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Cooperative
ECONOMIC INSECT
REPORT

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AGRICULTURAL RESEARCH SERVICE
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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPERS continue damaging in parts of Nevada, Utah and Texas; variable in the Dakotas, Nebraska, Kansas and Oklahoma; and general increase noted in Minnesota and Wisconsin. (pp. 741-742). CEREAL LEAF BEETLE adults causing severe injury in Michigan where numbers are high. Several new counties reported infested. (p. 743). CORN ROOTWORMS causing damage to corn in areas of Nebraska, South Dakota and Missouri; root pruning severe in some northwest Missouri fields. (p. 744). WHEAT STEM MAGGOT heavy in Edmunds County, South Dakota; damage evident in Oakes area of Dickey County, North Dakota; and reported to be more prevalent than usual in areas of Minnesota. (p. 744). CHINCH BUG caused considerable damage to sorghum in Sumner County, Kansas, and moderate to heavy populations migrating from wheat stubble to small corn and grain in north central Missouri. (p. 745).

ALFALFA WEEVIL a very serious problem in Pennsylvania and causing damage to alfalfa in areas of Asotin and Whitman Counties, Washington. Damage severe in southeastern Albany County, New York. (p. 746). MEXICAN BEAN BEETLE unusually numerous on soybeans in several northeastern Virginia counties; controls applied. PEA APHID beginning to build up again on alfalfa in several areas of the country. (p. 747). SPOTTED ALFALFA APHID numerous in portions of southern Kansas. (p. 748).

APPLE MAGGOT adults reported emerging and active in New Jersey, New York, Connecticut, Massachusetts, Michigan, Wisconsin and Minnesota. (p. 750). MEDITERRANEAN FRUIT FLY collected at 3 locations in Miami, Dade County, Florida, on June 19, 20 and 21; and MEXICAN FRUIT FLY (single male) trapped in San Diego County, California, (adjacent to Tijuana, Mexico) on July 1. (p. 752)

BOLL WEEVIL continues light on cotton in most areas; first-generation emergence expected to increase infestation rate in southeast. (p. 757). BOLLWORMS increasing in Texas, but generally light in other areas; however, constitute major immediate threat to cotton in Georgia. (pp. 757-758). LYGUS BUGS increasing on cotton in all sections of Arizona and in parts of California. SPIDER MITES appearing earlier than usual in North Carolina, and some cotton fields required controls in California and Arizona. (p. 759).

LARCH CASEBEARER causing serious defoliation of tamarack in northeast Aitkin and southwest St. Louis Counties, Minnesota. (p. 760). SPITTLEBUGS damaging pines in areas of Michigan, Minnesota and Wisconsin. (pp. 760-761). ELM LEAF BEETLE continues to cause severe defoliation of elms in localized portions of south central Oklahoma, and damage reported to elms in Arizona, Nevada, Idaho, Colorado, Alabama and Maryland; appearing in Vermont. (p. 761). JAPANESE BEETLE adults appearing in areas of North Carolina, Virginia, Maryland, New Jersey, New York, Rhode Island, Ohio, Michigan and Indiana; troublesome in several Maryland counties. ROSE CHAFER abundant in Vermont; common in Rhode Island; numerous in parts of New York; injury heavy in 3 Michigan counties; and unusually numerous, with serious injury to ornamentals in several Wisconsin counties. (p. 763). Populations of a WEEVIL (*Ochryomera ligustri*) at peak levels June 24 in North Carolina. (See CEIR 12(23):607-608; this is a relatively new pest of *ligustrum* in the United States). (p. 763).

(Continued on following page)

FACE FLY building up in Indiana, Ohio and Maryland, and prevalent in Vermont. (p. 767). LARDER BEETLE unusually numerous in Wisconsin, Michigan and South Dakota. (p. 768).

DETECTION

New county records are SOUTHWESTERN CORN BORER in Forrest and Copiah Counties, Mississippi (p. 742); CEREAL LEAF BEETLE in Jackson County, Michigan; Carroll, De Kalb, Huntington, Wabash, White and Whitley Counties, Indiana; and Fulton, Defiance and Allen Counties, Ohio (p. 743); ALFALFA WEEVIL in Crawford County, Pennsylvania (last county in State), and Phillips County, Arkansas (p. 746); WHITE-FRINGED BEETLES in Stewart and Evans Counties, Georgia (p. 769); and IMPORTED FIRE ANT in Colorado County, Texas, and Baldwin County, Georgia (p. 770).

CORRECTIONS

See page 749.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 766).

Hawaiian Insect Notes. (p. 773).

Field Method for Separating the Cereal Leaf Beetle (Oulema melanopa (L.)) from Similar-appearing Species of Lema in the United States. (p. 774).

Reports in this issue are for week ending June 28, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

July 1963

The Weather Bureau's 30-day outlook for July calls for temperatures to average above seasonal normals in most of the eastern two-thirds of the Nation, except for near to below normal in North Atlantic, South Atlantic and Gulf States. Over the Far West generally below normal temperatures are anticipated. Rainfall is expected to be subnormal over the Great Lakes, central Plains and middle Mississippi Valley. Above normal amounts are predicted for the Southeast and Northwest, and near normal in areas not specified.

WEATHER OF THE WEEK ENDING JULY 1

A large high pressure area centered over Ohio provided warm sunny weather to most of the eastern part of the Nation during the first half of the week. Light rain showers fell over the Carolinas, Georgia and the Florida Peninsula. Hot humid air flowed northward on the western side of the mound of high pressure. This air brought more than 2 inches of rain to most of southeastern Nebraska Sunday night and early Monday morning. Fourteen inches fell at Garrison, Nebraska, June 23-24, washing out 200 bridges and causing \$10 million damage in the vicinity.

(continued on page 773)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - UTAH - Numerous on rangeland and in planted grass fields in several areas of Kane County; generally moderate about farms and communities. (Knowlton, June 24). Outbreaks have been severe over more than 10,000 acres in Parowan area and 7,000 acres in Paragonah, plus a large outbreak in Summit area of Iron County. (Knowlton, Sjoblom). Outbreaks in Juab County continue moderate to severe over large areas. (Knowlton, Esplin). Causing injury in some areas of Millard County; extremely numerous over much of eastern part. (Knowlton, Rickenbach). IDAHO - First and second instars of Melanoplus spp. ranged up to 5 per sweep in field of alfalfa 5 miles east of Spaulding. (Portman). Undetermined species averaged 2-3 per sweep in Black Canyon area, Canyon County, on alfalfa. (Bechtolt). NEVADA - Third instars of Melanoplus sanguinipes, Oedaleonotus enigma and others averaged 30 per square yard over 7-mile area in valley of Selenite Range, western Pershing County. (Funk). Second to fourth instars of O. enigma reported to average 30 per square yard in unspecified area in Sun Valley, Washoe County. (Hampton). NEW MEXICO - Grasshoppers averaged 5-6 per square yard around Caprock and north of Tatum, Lea County. Spotted infestations, 8-10 per square yard, north of Tucumcari, Lea County. Buildup also reported from northern Rio Arriba County. (N.M. Coop. Rpt.). TEXAS - Several species causing significant damage to growing crops in small areas of central, south central, and southern sections. (Tex. Coop. Rpt.). Counts in northwest counties of Lubbock, Floyd, Scurry, Kent, Hale, Armstrong, Carson, Castro, Parmer, Swisher, Bailey and Lamb Counties generally less than 5 per square yard. Counts in few areas of Lubbock and Kent Counties as high as 12-14 per square yard. (Tex. Coop. Rpt.; Neilson, Duncan, Hatchett, Whitaker).

OKLAHOMA - Grasshopper populations in Rogers Mills County remain below threatening level. Rangeland counts in Beckham County showed 10-15 nymphs per square yard. Dominant species Melanoplus bivittatus, Phlibostroma quadrimaculatum and Aulocara elliotti. Counts in areas of Carter and Murray Counties showed 4-18 per square yard with isolated spots up to 30 per square yard. M. bivittatus, Mermiria maculipennis and Ageneotettix deorum species present. Crop margin populations in Carter County averaged 6-15 per square yard; rangeland counts in Pontotoc County 2-5 per square yard. (Okla. Coop. Sur.). KANSAS - Counts of Melanoplus spp. in field margins in south central and southeast generally ranged 0-5 per square yard. Highest counts 20-25 M. bivittatus (fourth and fifth instars) per square yard in border of alfalfa field in Wilson County, southeast. (Peters). COLORADO - Mermiria sp. 1-2 per square yard on pasture land in Logan and Washington Counties. (Jenkins). NEBRASKA - Cropland infestations in south and southwest ranged 4-9 per square yard in the field. Margin counts 5-30 per square yard. Dominant species Melanoplus femurrubrum, third instar, and M. differentialis, fourth instar. Light populations present in pasture and rangeland in same area, ranging from less than one in Harlan County to 30-50 per square yard in Webster County. Phaenocarpa coloradus, Ageneotettix deorum, Phlibostroma quadrimaculatum and Phaenocarpa nebrascensis species present. (Bell, Hauke, Bergman). SOUTH DAKOTA - Situation not changed significantly. (Hintz). NORTH DAKOTA - Nymphal survey conducted in Dickey, McIntosh, Emmons and Logan Counties. Counts ranged 0-30 in margins. Most of area had 2-3 per square yard. An area north of Hazelton showed 25-30 per square yard, and 15-20 seen in Lehr area. M. bivittatus and M. sanguinipes dominant species. Development of M. bivittatus second through fifth instar and M. sanguinipes second through fourth instar. (Olson). MINNESOTA - General hatch of M. differentialis and M. femurrubrum noted in Anoka and Sherburne Counties; counts 10-60 first and second instars per square yard in recently cut alfalfa and in soil bank land. In Winona and Olmsted Counties, 3-4 M. femurrubrum per square yard found in field margins; second to fifth instars. Counts of second and third instars in Pope County field ranged 15-20 per square yard in margin. Third instar of M. bivittatus 4 per square yard in field of sweetclover in Marshall County. (Minn. Ins. Rpt., June 28). Light hatch noted in scattered fields in southeast and south central districts. (Minn. Ins. Rpt., June 21). WISCONSIN - Considerable numbers already present in certain alfalfa fields in scattered areas. Several fields in

La Crosse County had excess of 50 per sweep. First to third instar M. femurrubrum and second to fourth instar M. differentialis numbered up to 60 per square yard in second-growth and thin first-growth alfalfa in another area of La Crosse County. M. bivittatus becoming full grown in Adams County. Nymphs, probably M. femurrubrum, becoming quite noticeable in Waushara County although no significant buildup evident in southwest corner of State where high populations anticipated. (Wis. Ins. Sur.). ILLINOIS - Varied 30-260 (averaged 118) per 100 sweeps in grass and 0-170 (averaged 35) per 100 sweeps in oats in Will and Cook Counties. In west-southwest district, counts per 100 sweeps in clover and alfalfa averaged 1,075 (ranged 200-3,500); all instars as well as occasional adults present. (Ill. Ins. Rpt.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - Emergence 84 percent in Cayuga area, Sargent County; no eggs observed. (N.D. Ins. Sur.). SOUTH DAKOTA - Preliminary egg survey in northeast showed average of 3 egg masses per 25 plants; average plant height 20 inches with leaves extended. (Hintz). MINNESOTA - Egg masses and first-stage larvae observed on field corn in southern half of State. Potential of greatest infestations in southwest and west central districts. (Minn. Ins. Rpt.). WISCONSIN - Percent leaf feeding by larvae, first and second stages, on corn 24-40 inches extended height by county was 14 in Iowa, 2 in Lafayette, 8 in Grant, 16 in Crawford, 1 in Vernon, 9 in La Crosse, 17 in Trempealeau and 36 in Sauk (Spring Green area). (Wis. Ins. Sur.). ILLINOIS - In general, all eggs hatched south of U.S. Highway 6. In west district, percent of plants infested ranged 4-72 (average 40.7), with average of 1.6 larvae per plant of which 28.6 percent first stage, 50 percent second stage and 21.4 percent third stage; corn examined in west district averaged 66.3 inches extended height. In Kankakee County, east district, 10-20 percent of plants infested with 1 larva per plant. In Will County, northeast district, 0-20 unhatched egg masses per 100 plants; 0-10 percent of plants infested, with 1 first-stage larva per infested plant. Practically all larvae in fifth stage in sweet corn in East St. Louis area. (Ill. Ins. Rpt.). MISSOURI - Leaf-feeding damage in central and northern areas ranged 0-98 percent. Beginning to enter stalks in central and northern areas; 12 percent of borers entered stalks in one northwest area field. (Munson, Thomas, Wood). MICHIGAN - Egg masses quite easily found in Wayne, Monroe and Oakland Counties; larval feeding on leaves evident in Ingham County. (Proctor). OHIO - Egg masses and larval feeding observed in few corn fields in southwest. (Lyon). MARYLAND - Larval infestations generally light to moderate but increasing on field and sweet corn in all sections. Several heavy infestations in garden sweet corn reported from Queen Annes and Frederick Counties. (U. Md., Ent. Dept.). DELAWARE - Infestations in corn 4, 10 and 20 percent in New Castle, Kent and Sussex Counties, respectively; larval development varies second to fifth instar. (Burbutis). NEW YORK - Moths continued light to moderate in trap, cage and field in Dutchess County; egg masses in all stages of incubation noted and first 2 larval stages found in whorls. Light hatch noted in sweet corn in early green tassel stage in Ulster County. Egg masses ranged 2-4 per 100 plants in Broome County June 19; some feeding evident. No egg masses found during thorough search in Niagara County. (N.Y. Wkly. Rpt., June 24).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Fifty percent of first-generation moths emerged in Desha County; egg laying very light. Seventy percent of first-generation larvae pupated in Conway County; no moth emergence. One egg mass found in Crawford County which will give rise to second-generation larvae. (Ark. Ins. Sur.). MISSISSIPPI - Light to medium on corn in Oktibbeha and Copiah Counties. (Ouzts). Previous reports in CEIR 13(21): 546 and 13(23):605 first ARS records of species in Forrest and Copiah Counties. (PPC).

CORN EARWORM (Heliothis zea) - NEW MEXICO - Larvae 6-8 per 100 sweeps in Dona Ana County seed alfalfa prior to treatments. (N. M. Coop. Rpt.). TEXAS - Head infestations appearing in widely scattered areas of south plains, but little economic damage has occurred. (Tex. Coop. Rpt.). Light infestations

in Jones County causing concern by boring into stem about 12 inches below head and causing some lodging. (Clayton). OKLAHOMA - Light in grain sorghum in Garvin (8 per 100 heads) and Marshall (40 per 100 heads) Counties. Light, 1-3 per 10 sweeps, present in alfalfa in Garvin County. Field corn virtually 100 percent infested in McClain, Garvin and Bryan Counties. Moderate counts reported on corn in Choctaw County. (Okla. Coop. Sur.). KANSAS - None noted in early blooming sorghum heads and only occasional specimen noted in silking field corn in southeast. (Peters). ARKANSAS - Two isolated infestations occurred in Conway and Desha Counties on soybeans. (Ark. Ins. Sur.). ALABAMA - Extremely heavy infestation locally in Mobile County; destroyed 20-acre cornfield; 1-4 larvae per stalk in 2 to 4-foot high plants. (Wallace, Seibels). DELAWARE - Infestations in corn show slight increase in many areas over previous week; collection in light trap in Sussex County low. (Burbutis).

ARMYWORM (*Pseudaletia unipuncta*) - OHIO - Local infestations present in wheat in Auglaize (northwest) and Montgomery (southwest) Counties. (Brown, Blair, Vermilya; June 21). Infesting 28-acre cornfield in Clark County, west central area; controls in wheat excellent. (Holdsworth). MINNESOTA - Low numbers found in Sherburne County in small grain and corn. (Minn. Ins. Rpt.). NORTH DAKOTA - Trace observed in ryefield near Wishek, McIntosh County. (N.D. Ins. Sur.).

FALL ARMYWORM (*Laphygma frugiperda*) - ALABAMA - Feeding on grain sorghum in Montgomery County; first report of season. (Kendrick). TEXAS - Grain sorghum in Rannels County has 10 percent infestation of larvae boring into stalks. Apparently larvae entering stalk where it has been partially lodged by high winds. Controls being tried in several instances. (Parker).

CUTWORMS - UTAH - Moderately damaged corn in Box Elder, Weber and Utah Counties. (Knowlton, June 24). NEW YORK - Continue a problem in Suffolk County on corn. (N.Y. Wkly. Rpt., June 24). MICHIGAN - Causing injury in several northern counties; field crops such as oats, corn, alfalfa, and clover being attacked. (Festerling, Rebman, Mullett, Campana).

STALK BORER (*Papaipema nebris*) - MINNESOTA - Reported feeding in marginal rows of corn in south central, southeast and central districts. (Minn. Ins. Rpt.). WISCONSIN - Second and third-stage larvae relatively common along marginal rows of corn in southern counties. (Wis. Ins. Sur.). ILLINOIS - Common in marginal rows of corn and small grains in many areas; count in Will County oatfield showed 30 percent of stems infested in first 10 feet bordering a weedy roadside which had been recently mowed. (Ill. Ins. Rpt.). PENNSYLVANIA - General on corn; quite abundant this season. (Pepper). DELAWARE - Approximately 8 percent of corn plants infested in New Castle County field. (Burbutis). RHODE ISLAND - In garden corn in Warrick, Kent County. (Mathewson).

SORGHUM WEBWORM (*Calama sorghiella*) - OKLAHOMA - First infestation of year noted in Bryan (84 larvae per 100 heads) and Marshall (occasional larva) Counties, south central. (Okla. Coop. Sur.).

CEREAL LEAF BEETLE (*Oulema melanopa*) - MICHIGAN - New quarantine scheduled to go into effect July 1. Seventeen counties currently involved in quarantine. New adults emerged in large numbers from untreated research plots in Berrien County during past few days. These along with adults from other untreated areas such as fence rows, meadows, pastures, etc. migrating to corn and other succulent grass-type plants. Adult feeding injury severe where numbers high. Larvae, pupae and new adults common in infested areas. (Ring, Yun). Jackson County reported as new county in CEIR 13(26):704. (PPC). INDIANA - Recent collections in Carroll, De Kalb, Huntington, Wabash, White and Whitley Counties confirmed as this species. These are all new counties. (PPC). OHIO - New quarantine will go into effect in 14 counties on June 28. Specimens have been collected in 4 northwest counties; namely Williams, Fulton, Defiance and Allen. (Walker, Sheppard, Porter). ILLINOIS - Survey of oats, wheat, grass and

several corn fields in northeastern Iroquois, eastern Kankakee and Will, and southern Cook Counties negative. (Ill. Ins. Rpt.).

CORN ROOTWORMS (Diabrotica spp.) - SOUTH DAKOTA - Causing heavy damage in Yankton County corn fields. (Hintz et al.). NEBRASKA - Second to fourth instars feeding in corn roots in Lincoln County. Heavy larval damage present in some treated fields in northeast, east and southeast. D. undecimpunctata howardi adults feeding in corn and alfalfa in Clay and Harlan Counties. (Bergman). KANSAS - D. virgifera development as follows: Egg through adult in Riley County, with over 30 percent pupation; small larvae through adult in Republic County, with 23 percent pupation and less than 1 percent emergence. Two fields in Republic County averaged 35 larvae per plant. (Burkhardt). MISSOURI - Damage showing up in north central and northwest areas. Some northwest fields show severe root pruning. Specimens collected in northwest mainly full-grown larvae and several pupae. First D. virgifera adult of season collected in northwest on June 27. (Munson, Thomas, Wood). MINNESOTA - D. undecimpunctata howardi feeding on corn in Wabasha County. (Minn. Ins. Rpt.). OHIO - First hatch of season of D. longicornis occurred throughout State. Half-grown larvae observed in Wyandot County, northwest. (Blair).

CORN FLEA BEETLE (Chaetocnema pulicaria) - DELAWARE - Remains present on corn in many areas; feeding injury generally light. (Burbutis). MARYLAND - Adults caused moderate damage to field corn at Ellicott City, Howard County. (U. Md., Ent. Dept.).

A FLEA BEETLE (Systema frontalis) - ILLINOIS - Severely damaged field of corn in Piatt County. (Ill. Ins. Rpt.).

DUSKY SAP BEETLE (Carpophilus lugubris) - DELAWARE - First adults of season present but scarce in area of Sussex County on corn. (Burbutis).

JAPANESE BEETLE (Popillia japonica) - DELAWARE - Present but still scarce on corn in New Castle County. (Burbutis).

WIREWORMS - VIRGINIA - Medium infestation of Melanotus communis in corn in Grant, Grayson County, and severely infesting corn in Abington, Washington County. (Tarpley, Cassell, Grosedose). OHIO - Limonius dubitans collected from field of soybeans near Tiffin, Seneca County. (Blair, Lyon).

WHEAT STEM MAGGOT (Meromyza americana) - MINNESOTA - Reported to be more prevalent than usual week ending June 21. Ranged from less than 1 percent to 5 percent in southeast, south central, central, west central and northwest districts week ending June 28; about 98 percent of "white heads" caused by this species. (Minn. Ins. Rpt.). NORTH DAKOTA - Evidence of damage moderate on wheat in Oakes area, Dickey County. (N.D. Ins. Sur.). SOUTH DAKOTA - Infestations heavy in Edmunds County; 30 percent loss estimated in 200-acre wheatfield. Loss 10-20 percent in several fields. (Kantack). NEBRASKA - Less than 1 percent damage occurred in Red Willow County wheat. (Bell, Hauke, Bergman).

HESSIAN FLY (Phytophaga destructor) - NEBRASKA - Less than 1 percent infestation present in wheat in Clay and Webster Counties. (Bell, Hauke, Bergman). OHIO - Damage occurred in wheat near Findlay, Hancock County (northwest). (Kroetz, Holdsworth, June 22). "Flaxseeds" present on wheat along with Harmolita tritici and Papaipema nebris at Eaton, Preble County (southwest). (Wadlington, Holdsworth).

CORN BLOTCH LEAF MINER (Agromyza parvicornis) - CONNECTICUT - Heavy on corn in New Haven County. (Savos).

GREENBUG (Schizaphis graminum) - ILLINOIS - Varied 0-200 (averaged 41.7) per 100 sweeps in oats in Will and Cook Counties. (Ill. Ins. Rpt.). WISCONSIN - Counts

averaged 50 per sweep in later-planted fields of grains in northeast; "red leaf" most serious in areas of Oconto, Shawano and Outagamie Counties. Few problems reported in northern Chippewa County. (Wis. Ins. Sur.). MINNESOTA - Continues low in small grains; however, few fields in Sherburne County had 700-1,500 per 100 sweeps. Feeding damage very noticeable in these high count fields. (Minn. Ins. Rpt.). NORTH DAKOTA - Counts 150 per 10 sweeps in oats in Brampton area, Sargent County. (N.D. Ins. Sur.). SOUTH DAKOTA - Counts per 40 linear feet of row ranged 6-139 in Turner, McPherson, Hyde, Day and Brookings Counties June 19-24 in small grains. (Kieckhefer).

ENGLISH GRAIN APHID (Macrosiphum avenae) - ILLINOIS - Varied 30-820 (average 218) per 100 sweeps in oats in Will and Cook Counties. (Ill. Ins. Rpt.). WISCONSIN - Counts generally 50 per sweep in later-planted fields of grain in northeast; "red leaf" most serious in areas of Oconto, Shawano and Outagamie Counties. Counts elsewhere in State relatively low, although counts appear to be steadily increasing. Some rye and wheat fields have relatively high numbers on heads. (Wis. Ins. Sur.). SOUTH DAKOTA - Counts per 40 feet of row ranged 9-81 in oats in Turner, McPherson, Hyde and Brookings Counties June 19-24. (Kieckhefer).

CORN LEAF APHID (Rhopalosiphum maidis) - NEVADA - Varied 1-15 per sweep in Smith and Mason Valleys, Lyon County. (Cooney). UTAH - Causing some damage to barley in eastern Millard County. (Knowlton, Rickenbach). SOUTH DAKOTA - Averaged 22 per 40 feet of row in barley in Waubay National Wildlife Refuge, Day County, June 21. (Kieckhefer). MISSOURI - Light to moderate in whorls of late corn and grain sorghum in areas throughout State. (Munson, Thomas, Wood). RHODE ISLAND - Scattered eggs found in Kent and Providence Counties. (Hannah, Mathewson).

FALSE CHINCH BUGS (Nysius spp.) - UTAH - Largely N. ericae, numerous on range and about farms over much of Washington and Kane Counties. (Knowlton, June 24).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Eighteen fields of rice surveyed in Lonoke County gave an average of 32 adults and 1 nymph per 100 sweeps. Fields with no grass that had formed seeds had no stink bugs present. Fields with headed grass present had as high as 25-30 per sweep present. (Ark. Ins. Sur.).

CHINCH BUG (Blissus leucopterus) - KANSAS - Considerable damage to sorghum noted in Sumner County, south central, and much less amount in adjoining Cowley County, southeast. Migrations about completed and no further damage expected. (Gates, Peters). MISSOURI - Moderate to heavy populations migrating from wheat stubble to small corn and grain in north central area. (Munson, Thomas, Wood). ILLINOIS - Averaged 10 small nymphs per linear foot of row in Cook County wheatfield. (Ill. Ins. Rpt.). SOUTH CAROLINA - Infesting corn adjacent to small grain in Newberry County. (Nettles et al., June 18).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Considerable numbers beginning to damage St. Augustine grass lawns in Bullock County. (Stone, Roberts et al.).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - MINNESOTA - Populations in small grains extremely high in south central, central and southeast districts. Counts per 100 sweeps averaged 1,234 adults and 1,656 nymphs in south central, 1,000 adults and 2,000 nymphs in central, 20 in west central and trace in northwest. (Minn. Ins. Rpt.). ILLINOIS - Very abundant in some fields of oats in eastern and northeastern areas; 18 nymphs and 40 adults per sweep in one field. (Ill. Ins. Rpt.).

THRIPS - MARYLAND - Undetermined species continue to cause conspicuous streaking of corn and soybean foliage in all sections of the State. (U. Md., Ent. Dept.).

PENNSYLVANIA - Undetermined species severely injured 20-acre field of corn 18 inches high in Adams County; noticed in others. (Pepper). INDIANA - Thrips tabaci abundant on corn in many parts of State. (Gould). ILLINOIS - Unidentified species common on corn, with light silvering observed in many areas. (Ill. Ins. Rpt.). OKLAHOMA - Frankliniella spp. moderate to heavy and causing considerable deformation of peanut leaves in most south central areas. (Okla. Coop. Sur.). COLORADO - Undetermined species causing curl of leaves on spring grain in Larimer County. (Jenkins). ARIZONA - Chirothrips spp. continue to injure Bermuda grass seed fields in Yuma County. (Ariz. Coop. Sur.).

BROWN WHEAT MITE (Petrobia latens) - UTAH - Caused some damage to barley and wheat in western Millard County. (Knowlton, Ogden; June 24).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius)- ILLINOIS - Common on corn, but no damage observed or reported. (Ill. Ins. Rpt.).

A SPRINGTAIL - ARIZONA - Again injuring bentgrass greens on golf courses in Maricopa County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - WASHINGTON - Visible for several years in roadside alfalfa in Clarkston area, Asotin County; now causing damage to fields in that area and near Colfax, Whitman County. (Telford). IDAHO - Generally light throughout southern area on alfalfa; damage occurred in only few fields and very few fields treated. (Waters). General infestations found in Gifford, Peck, Lenora and Moscow areas; up to 30 percent leaf damage. Mating still occurring. (Kambitsch, Futter, Portman). Larvae more numerous than spring adult populations would have indicated in Canyon County; plant damage slight. (Bechtolt). Found in alfalfa from Spaulding to Orofino along Clearwater River. All fields in Fraser area also infested. Mating commonly observed. Damage to fields ranged up to 30 percent of leaf area. (Fitzsimmons, Portman). NEVADA - Larvae averaged 15-20 per sweep in Lamaille, Elko County. (Earnist). UTAH - Larvae holding back second-crop alfalfa in many northern and central area fields. (Knowlton). WYOMING - Larvae averaged 35 and adults 5-10 per 100 sweeps in alfalfa in Laramie County. (Marks). ARKANSAS - Three specimens collected in St. Francis County and one in Phillips County; latter is new county record. (Ark. Ins. Sur.). VIRGINIA - Light infestation in alfalfa locally in King George County (8 adults and 26 larvae per 100 sweeps) and King and Queen County (2 adults and 12 larvae per 100 sweeps). (Tarpley). MARYLAND - Moderate numbers of larvae continue to feed on alfalfa in central sections. (U.Md., Ent. Dept.). PENNSYLVANIA - Found in Crawford County on June 19 (new county). All counties in State now known to be infested. (Newton). Eggs and numerous small larvae on second-cutting alfalfa. Recommended controls barely or not giving satisfactory control. Farmers quite upset; many going to eliminate alfalfa in their hay program. Communications to county agents and Extension Entomologist very numerous. A very real problem. (Udine). NEW YORK - Pupation continues at rapid rate in Ulster County, with adult emergence underway June 18; present in all parts of Albany County, with damage severe in southeastern area; in Broome County, widespread in Chenango and Susquehanna Valleys and south of Binghamton, with injury apparent but not serious. (N.Y. Wkly. Rpt., June 24). VERMONT - In Windham County, larvae averaged 3 per sweep in Townshend (West River Valley) and 1-2 per 10 sweeps at Dummerston, Putney and Westminster. (MacCollom, June 24).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - IDAHO - Adults still greater in white clover field margins in Lewiston, Culdresac and Moscow vicinity; averaged up to 7 per sweep. Greatest population in center of field was 2 per sweep. (Kambitsch, Futter, Portman).

BLISTER BEETLES (Epicauta spp.)- KANSAS - Present in most alfalfa examined in southeast and north central areas; only one field, in Cowley County, showed damage. (Peters).

A LEAF BEETLE (*Colaspis* sp.) - ILLINOIS - Adults varied 0-100 per 100 sweeps in clover and alfalfa in west-southwest district. (Ill. Ins. Rpt.).

A SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata tenella*) - NEW MEXICO - Adults present in majority of alfalfa checked in Dona Ana, Roosevelt and Eddy Counties. (N.M. Coop. Rpt.).

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - DELAWARE - Present on soybeans in most areas. (Burbutis). COLORADO - Present on alfalfa in Weld, Adams and Larimer Counties; not economic, 10-50 per 100 sweeps. (Jenkins).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Unusually large numbers in Charles City and New Kent Counties on soybeans; causing considerable damage to young plants. Populations increased during past 3 years, but never so many so early. Treatments applied to seedling plants. (Settle, June 20). Light to medium infestations in most soybean fields checked in King George, Westmoreland, Richmond, Northumberland and Lancaster Counties; controls applied. (Tarpley).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - DELAWARE - Adults generally much lighter this season on soybeans compared to last 2-3 years. (Burbutis). OKLAHOMA - Light feeding occurring on soybeans in Pauls Valley area. (Okla. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - IDAHO - Canyon County populations seemingly increasing on alfalfa and red clover. General infestation 10-25 per sweep; some fields had 40-50 per sweep. (Waters). Very numerous in 25-acre alfalfa field east of Nezperce. (Dailey). Building up in Canyon County alfalfa. (Bechtolt). Populations much below those of last several seasons in Jerome County alfalfa. (Priest). NEVADA - Varied 30-100 per sweep in alfalfa hay fields in Smith Valley and 30-400 per sweep in Mason Valley, Lyon County. (Cooney). Averaged 12 per sweep in hay fields in Lamoille, Elko County. (Earnist). ARIZONA - Found on alfalfa in Yuma County at Parker and also in Yuma area. Some infestations need controls. (Ariz. Coop. Sur.). UTAH - Damaging in some eastern Millard County alfalfa; moderately numerous in most. (Knowlton, Rickenbach). WYOMING - Averaged 80 per 100 sweeps in Laramie County alfalfa. (Marks). COLORADO - Increased in some uncut alfalfa in Weld County; 500-1,000 per 100 sweeps. Counts 200-600 per 100 sweeps on new growth of alfalfa in Mesa and Delta Counties. (Jenkins, Bulla). OKLAHOMA - Generally light, 0-50 per 10 sweeps, in south central area with exception of localized area in Garvin County where counts 150-2,000 per 10 sweeps noted. Light in Pawnee County (50 per 10 sweeps), north central; Choctaw County, southeast; and Kiowa County, southwest. (Okla. Coop. Sur.). NEBRASKA - Extremely low in southwestern area; averaged 12 per 10 sweeps. (Bell, Hauke, Bergman). SOUTH DAKOTA - Averaged 120-155 per 10 sweeps on alfalfa in north central, northeast and eastern areas. (Hintz). NORTH DAKOTA - Built up to 500 per 10 sweeps on alfalfa in La Moure County. (N.D. Ins. Sur.). MINNESOTA - Remained high on alfalfa past two weeks; counts per 100 sweeps week ending June 28 averaged 2,586 in south central, 2,200 in central, 1,000 in west central and 400 in northwest. Counts per 100 sweeps week ending June 21 ranged 50-2,000 in west central, 100-2,000 in south central, 300-2,000 in southeast and 200-500 in northwest. (Minn. Ins. Rpt.). WISCONSIN - Populations in alfalfa coincide rather closely with maturity of crop; counts per sweep ranged 4-14 in first cutting, 3-4 in second cutting 2-4 inches high and 20-50 in second cutting 8-10 inches high. (Wis. Ins. Sur.). ILLINOIS - Counts per 100 sweeps varied 30-1,000 in northwest and 200-1,000 in west-southwest in clover and alfalfa. (Ill. Ins. Rpt.). MARYLAND - Continues light on alfalfa in Howard and Frederick Counties; ranged 8-20 per sweep on alfalfa in Queen Annes County. (U.Md., Ent. Dept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Increasing in Pinal County. Infestations down in Graham County, but increasing in some other parts of State. (Ariz. Coop. Sur.). NEW MEXICO - Spotted, light infestations in Roosevelt County alfalfa. (N.M. Coop. Rpt.). OKLAHOMA - Heavy in McLain and Garvin County areas; honeydew present; 1,000-4,000 per 10 sweeps. Light to

moderate, 75-600 per 10 sweeps, in Murray and Bryan County areas; could become a problem if dry weather persists. Very light, 0-20 per 10 sweeps, in southeast and southwest and 150 per 10 sweeps in Kiowa County. (Okla. Coop. Sur.).

KANSAS - About 2 per sweep in Graham County, very scarce in Decatur County and less than 1 per sweep in Norton County; winged and wingless forms present. (Painter). Counts in south central and southeastern areas ranged 2-60 per sweep, with exception of eastern portion of southeast where only trace noted. Counts in counties with high populations were as follows: Reno, 1 field with 60 per sweep and damage apparent; Cowley, 1 field with 25 per sweep and damage apparent; Greenwood, 1 field with 50 per sweep and lower leaves yellowed and dropping off. (Peters). NEBRASKA - Populations in south and southwest counties 1 per 50 sweeps; Furnas, 1 per 10 sweeps; Hitchcock, 1 per 20 sweeps; Nuckolls, 1 per 30 sweeps; and York, 2 per 10 sweeps. (Bell, Hauke, Bergman).

COWPEA APHID (Aphis craccivora) - TEXAS - Heavy, local populations attacking field peas in Brazos County. (Randolph).

LYGUS BUGS (Lygus spp.) - NEVADA - Varied 0-50 per sweep in alfalfa hay fields in Smith and Mason Valleys, Lyon County. (Cooney). Averaged 3-5 per sweep in fields in Lamoille, Elko County. (Earnist). ARIZONA - Building up on alfalfa throughout State in both seed and hay crops. (Ariz. Coop. Sur.). NEW MEXICO - Counts per 100 sweeps averaged 8-20 adults and 12-30 nymphs in alfalfa in southern Dona Ana County, 15-60 in Roosevelt County and 30-90 in alfalfa near Artesia, Eddy County. (N.M. Coop. Rpt.). COLORADO - Nymphs increasing on alfalfa in Weld, Larimer and Adams Counties; 100-500 per 100 sweeps. (Jenkins). WYOMING - Counts per 100 sweeps in Laramie County alfalfa 20 adults and 32 nymphs. (Marks).

TARNISHED PLANT BUG (Lygus lineolaris) - NORTH DAKOTA - Adults and nymphs increasing on alfalfa and sweetclover in southeast. (N.D. Ins. Sur.). NEBRASKA - Counts ranged 4-12 per 10 sweeps in south and southwest area alfalfa. (Bell, Hauke, Bergman).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults averaged 17 per 100 sweeps in Laramie County alfalfa. (Marks). NEBRASKA - Adults 3 per 10 sweeps in Red Willow County alfalfa. (Bell, Hauke, Bergman). NORTH DAKOTA - Adults and nymphs increasing on alfalfa in southeast. This species and Lygus lineolaris 50-75 per 100 sweeps near Nome, Barnes County. (N.D. Ins. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - IDAHO - Adults found throughout northern area in gardens and fields. Averaged 7 per sweep in margin of white clover field in Culesac. (Kambitsch, Portman). Populations along Clearwater River at elevations of 750-1,500 feet about 70 percent in adult stage, while at 2,500 feet elevation, 90 percent of population in nymphal stages. Heavily infested alfalfa 6-12 inches shorter than uninfested plants. (Portman, Fitzsimmons).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults present to fairly common on soybeans throughout State. (Burbutis). MARYLAND - Ranged 1-4 per sweep in some Howard and Frederick County alfalfa; no damage apparent yet. (U. Md., Ent. Dept.). PENNSYLVANIA - Five per 10 sweeps on alfalfa in Adams County. (Pepper). OHIO - Adults averaged 4 per sweep in alfalfa near Bainbridge, Ross County, and 2 per sweep in Wilmington County. (Lyon). ILLINOIS - Counts per 100 sweeps in alfalfa varied 20-100 adults and 0-620 nymphs in northeast, 0-1,000 adults (average 400) and 0-900 nymphs (average 225) in Bond and Madison Counties (west-southwest). (Ill. Ins. Rpt.). MINNESOTA - Counts in alfalfa per 100 sweeps average 51 in south central, 100 in central, 50 in southeast, 40 in west central and trace in northwest district. (Minn. Ins. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Increasing in Pinal County. Present in all parts of State and causing injury in many fields. (Ariz. Coop. Sur.).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Present on soybeans in New Castle County. (Burbutis).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Light in all south central areas checked, 0-3 per 10 sweeps. Also light in Pawnee (north central) and Choctaw (southeast) Counties. Heavy populations continue in alfalfa in Kiowa County (southwest), 35-60 per 10 sweeps. (Okla. Coop. Sur.). MISSOURI - Light to moderate populations observed in northwest area alfalfa; light in weedy soybeans in central and northwest areas. (Munson, Thomas, Wood). MINNESOTA - Feeding on corn near Austin, Mower County; few infested plants observed. (Minn. Ins. Rpt.).

WEBWORMS (Loxostege spp.) - KANSAS - Counts in alfalfa in south central and southeast generally averaged 10-150 larvae per 100 sweeps; only few fields with 5-10 percent of plants webbed. (Peters).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae found in alfalfa in northern Eddy County; averaged 10-25 per 100 sweeps. (N.M. Coop. Rpt.). PENNSYLVANIA - Adults unusually abundant this year in south central area. (Pepper). MARYLAND - Light to moderate on alfalfa in Howard County. (U. Md., Ent. Dept.).

FORAGE LOOPER (Caenurgina erechtea) - KANSAS - Larvae ranged 10-300 per sweep in alfalfa in southeast and south central areas. (Peters).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - KANSAS - Larvae noted in most alfalfa in south central and southeast; ranged 0-30 per 100 sweeps. (Peters).

SPIDER MITES (Tetranychus spp.) - ARIZONA - Causing injury to some alfalfa seed fields in Yuma County. Also injuring corn in Yuma County. (Ariz. Coop. Sur.). IDAHO - T. telarius found in Canyon County alfalfa for first time this year; all stages present. (Bechtolt). ILLINOIS - T. telarius damaged soybeans locally in west district. (Ill. Ins. Rpt.). MARYLAND - Light numbers found on soybeans in Queen Annes and Worcester Counties; expect buildups if dry weather continues. (U. Md., Ent. Dept.).

CORRECTIONS

CEIR 13(13):163, and (25):669 - MAP - Distribution of Alfalfa Weevil - Distribution record for Yuma County, Arizona, in error. Delete area in southwestern part of State on California-Arizona state line. Area in north-central (Coconino County) only known infested county in State.

CEIR 13(24):644 - COCCIPS - ARIZONA - "Unspecified species ..." should read "Coccus pseudomagnoliarum ...".

FRUIT INSECTS

APPLE MAGGOT (*Rhagoletis pomonella*) - MINNESOTA - First adult of season trapped in La Crescent area June 24. (Minn. Ins. Rpt.). WISCONSIN - Adults appearing in Dane and Waupaca Counties. Adults collected in bait traps in Madison and Brodhead areas; three caught on June 20. (Wis. Ins. Sur.). MICHIGAN - First adults emerged in Oceana County June 25; first maggot controls recommended north of Ottawa-Kent-Montcalm-Gratiot-Saginaw County line by July 4. (Tompkins). OHIO - First adults of season in cages and traps in Lake County June 21. (Still). NEW YORK - Adult emergence at Poughkeepsie began June 16; increased steadily after June 18. In Niagara County, four males and two females taken from emergence cage June 21. First adult emergence in Niagara County occurred June 20, compared with June 26 at same location in 1962. (N.Y. Wkly. Rpt.). CONNECTICUT - Active since June 24 at slow rate; controls recommended. (Savos). NEW JERSEY - First adults of season trapped June 18 at Hammononton, Atlantic County, June 19 at Pemberton, Burlington County. (Ins.-Dis. Newsltr.). MASSACHUSETTS - Adults on untreated fruit. (Wheeler).

CHERRY FRUIT FLY (*Rhagoletis cingulata*) - NEW YORK - Emergence extremely slow in Monroe County; from one cage in early zone at Spencerport, emergence by date was as follows: June 8 - 12, June 9 - 10, June 10 - 1, June 11 - 2, June 12 - 0, June 13 - 2, June 14 - 6, June 15 - 1, June 16 - 3, June 17 - 0, June 18 - 2, June 19 - 0. (N.Y. Wkly. Rpt.).

CODLING MOTH (*Carpocapsa pomonella*) - VERMONT - Activity expected with high nighttime temperatures this period; emergence began previous period. (MacCollom, June 24). NEW YORK - Moth activity reduced by cool temperatures in eastern area, but spring-brood flight continues. Eggs hatching and many larval entries found in unsprayed orchards in Niagara County; moth emergence still moderate in emergence cage. Conditions not favorable for egg laying in Orleans County. Moth emergence in four cages seeded with 1,036 larvae in Monroe County, by date, as follows: June 10 - 7, June 11 - 4, June 12 - 1, June 13 - 5, June 14 - 13, June 15 - 15, June 16 - 15, June 17 - 18, June 18 - 22, June 19 - 22, June 20 - 28. Not considering winter mortality, 31 percent of moths emerged. (N.Y. Wkly. Rpt.). NEW JERSEY - Entries easily found in unsprayed apple orchard at Cranbury, Middlesex County. (Ins.-Dis. Newsltr., June 25). INDIANA - First-brood peak activity past at Vincennes, Knox County; however, occasional adult still being taken in bait traps in orchard not sprayed in June. (Hamilton, June 25). MISSOURI - Appearing in at least one orchard in northwestern area; where controls stopped early, few adults reported. (Wkly. Rpt. Fr. Grs., June 26). WISCONSIN - Two traps at Gays Mills yielded two adults on June 18 and one on June 24; none on dates between. Trap at Madison with one each on June 18 and 22 and eight on June 24. Trap at Middleton with one each on June 18, 19, 21, 22, and 24. (Wis. Ins. Sur.). COLORADO - Between-brood treatments posted for July 1 in Olathe area and July 3 in Montrose area, Montrose County. (Bulla).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - ALABAMA - Second generation attacking apple twigs in Coosa County. (Sessions). NORTH CAROLINA - Larvae present in tips of peach twigs in Lincoln County. (Mount, Waynick). CONNECTICUT - Little injury reported from Niantic; populations low for past few years and below economic levels in most of State. (Savos). INDIANA - Adults especially active at Vincennes, Kox County, June 11-16; small numbers still present June 25. Second-brood larval entries in twigs high June 18-21. (Hamilton). MISSOURI - Half-grown larvae in terminals in central area; light in southeast and northwestern areas. (Wkly. Rpt. Fr. Grs., June 26).

FRUIT-TREE LEAF ROLLER (*Archips argyrospilus*) - NEW JERSEY - Moths emerging. (Ins.-Dis. Newsltr., June 25). NEW YORK - Large numbers of moths present in unsprayed orchards in eastern area. (N.Y. Wkly. Rpt., June 24). WISCONSIN - Two traps at Gays Mills yielded following: June 18 - 8, June 19 - 3, June 20 - 4, June 21 - 2, June 22 - 1, June 23 - 12, and June 24 - 3. (Wis. Ins. Sur.).

LESSER PEACH TREE BORER (Synanthedon pictipes) - ALABAMA - Causing heavy damage to untreated trees in Lee County. (McQueen).

PEACH TREE BORER (Sanninoidea exitiosa) - ALABAMA - Causing heavy damage to untreated trees in Lee County. (McQueen). MISSOURI - No problems reported. (Wkly. Rpt. Fr. Grs., June 26). NEW YORK - Few infested peach trees in Nassau County dropping leaves and giving droopy appearance. (N.Y. Wkly. Rpt., June 24). PENNSYLVANIA - Emerging on peach in Adams County June 27. (Pepper).

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - OREGON - Infesting mazzard cherry liners in nursery in Eugene. (Dimalla).

CATFACING INSECTS - TEXAS - Many complaints of distorted fruit noted; most damage occurred earlier and now noticed by producers. (Newton). CONNECTICUT - Few growers suffered from plant bug injury on peaches; most now disappeared. (Savos). RHODE ISLAND - Heavy catfacing in peach locally in Warwick, Kent County; probably Lygus lineolaris. (Mathewson).

PERIODICAL CICADAS - INDIANA - Oviposition complete in Vincennes area, Knox County; only occasional adult now found in orchards. (Hamilton, June 25).

ORCHARD MITES - UTAH - Becoming serious in several Box Elder County orchards. (Knowlton, Allred). INDIANA - Control continues principal problem in apple orchards at Vincennes, Knox County. Weather ideal for mite development. As populations vary extensively from orchard to orchard, control for each orchard now individual problem. (Hamilton, June 25). NEW YORK - Steadily increasing on fruit trees in Nassau County. (N.Y. Wkly. Rpt., June 24). PENNSYLVANIA - Very few noted on apple in south central area. (Pepper). RHODE ISLAND - Bryobia rubricolus very heavy on untreated peach and apply locally in Providence County. (Mathewson).

EUROPEAN RED MITE (Panonychus ulmi) - NEW YORK - Peak populations should occur about July 8 in eastern area. Building up in some Westchester County orchards; developing slowly in Orleans County; few adults and eggs appearing in Monroe County, but not serious. (N.Y. Wkly. Rpt., June 24). CONNECTICUT - Active on apples. (Savos). MICHIGAN - Sizable populations noted on apple trees in Oakland, Monroe, and Ingham Counties. (Proctor, Wolfe). MISSOURI - Populations increased in both southeast and northwest; apparently mixed mite populations in southeast and central areas. (Wkly. Rpt. Fr. Grs., June 26).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - SOUTH CAROLINA - Rapidly building up in apple orchard in Tamassee area, Oconee County. (Nettles et al., June 18). CONNECTICUT - Active on apples. (Savos). MICHIGAN - Heavy on Delicious apple trees in Genesee County orchard. (Proctor, Wolfe). MISSOURI - Ranged none to light to heavy in west central area; few reported present in northwest area but hard to find. In southeastern area, part of population probably T. canadensis and Panonychus ulmi. (Wkly. Rpt. Fr. Grs., June 26). COLORADO - Increasing on cover crops in Mesa County, with up to 20-30 per leaf on bindweed; few found in trees. Numerous on apple trees in Boulder County. (Bulla, Hantsbarger).

SCALE INSECTS - TEXAS - Several species becoming troublesome on peach, plum, apple, pear, and apricot trees in central and north central areas. (Tex. Coop. Sur.). FLORIDA - Aspidiotus perniciosus light on pear at De Land, Volusia County. (Roberts, June 19). PENNSYLVANIA - Lecanium corni hatching on peach in Snyder County June 25. (Gesell). MICHIGAN - L. corni hatching 75 percent complete in Ingham County; controls recommended in July. (Dowdy). IDAHO - A. perniciosus crawlers active in Canyon County. (Bechtolt).

APPLE APHID (Aphis pomi) - PENNSYLVANIA - Very few noted in apple orchards. (Udine). CONNECTICUT - Increasing on sucker and terminal growth, especially in middle of tree tops. (Savos). RHODE ISLAND - Common on untreated apple in Lincoln and Cumberland, Providence County. (Mathewson).

BLACK CHERRY APHID (Myzus cerasi) - OREGON - Requires controls in Marion County cherry orchards. (Stephenson).

PEAR PSYLLA (Psylla pyricola) - CONNECTICUT - Appears under control in most commercial orchards, but extremely heavy in untreated checks at Storrs. (Savos).

PLUM CURCULIO (Conotrachelus nenuphar) - NEW YORK - Some late injury to plums noted in Monroe County. (N. Y. Wkly. Rpt., June 24). FLORIDA - Heavy on Prunus sp. at Orange Lake and Lowell, Marion County. (Adkins, June 17).

GRAPE SAWFLY (Erythraspides vitis) - NORTH CAROLINA - Larvae abundant on grape leaves in Brunswick. (Mount, West).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Destroying grapes at home in Hertford County. (Wright).

CURRENT FRUIT FLY (Epochra canadensis) - IDAHO - Nearly 100 percent of currants infested in home yard planting in Parma. (Scott).

AN AVOCADO LEAFHOPPER (Idona minuenda) - FLORIDA - Moderate on 25 avocado trees at Homestead, Dade County. (Knowles, June 7).

A PLANT BUG (Plagiognathus albatus vittiscutis) - FLORIDA - Moderate on pecan at Monticello, Jefferson County. (Phillips, May 7).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - First adult of second generation observed in Hamilton County June 22. (Lawrence). ALABAMA - Light in large orchard in Bullock County; all specimens in pupal stage in small nuts. (Roberts et al.).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Infestation seems checked following rains in Mobile, Bullock and Lee Counties; numerous colonies dead in Bullock County pecans where no controls used. (Wallace, Seibels, Roberts et al.)

BLACK-MARGINED APHID (Monellia costalis) - ARIZONA - Very prevalent on pecans in Graham County. (Ariz. Coop. Sur.).

AN ERIOPHYID MITE (Aceria brachytarsus) - CALIFORNIA - Larvae medium on walnut trees in Fresno, Fresno County. (Cal. Coop. Rpt.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - Collected in three locations in Miami, Dade County, on June 19, 20 and 21. (Humphries, Hickman, Brandt). MEXICO - Total of 7,170 inspections of 3,519 traps negative in States of Chiapas, Sinaloa, Sonora, Baja California, Yucatan, Campeche, Hidalgo, Veracruz, Tamaulipas, Tabasco and Guerrero and the Territory of Quintana Roo. (PPC, Mex. Reg., May Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Single male taken in a trap located adjacent to Tijuana in San Diego County on July 1. (Cal. Coop. Rpt.). MEXICO - Trapping during May in States of Baja California and northwestern Sonora negative. (PPC, Mex. Reg.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - Biological Control Zone - Total of 36,345 citrus trees inspected on 230 properties in southern Tamaulipas; 329 trees on 11 properties found infested. All light except one tree with medium infestation. Large number of adult Prospaltella opulenta noted in heavily infested trees in Municipio Llera, Tamaulipas; parasite expected to reduce infestation. Satisfactory control by parasites in groves north of Mante, Tamaulipas, except in one heavily infested grove with no parasites. Parasites generally hold infestations under control in Rio Verde section of San Luis Potosi; about one million citrus trees in that area. Chemical Control Zone - Total of 92,395 citrus trees inspected, with negative results, on 2,444 properties in States of Nuevo Leon, Tamaulipas, Baja California and Sonora. (PPC, Mex. Reg., May Rpt.).

SPIREA APHID (Aphis spiraeicola) - FLORIDA - Light to moderate on about 20,000 citrus trees at Oakhill, Volusia County. (Pott, June 5).

LEAFHOPPERS - ALABAMA - Oncometopia spp. and Homalodisca spp. nymphs and adults quite common and feeding on new grafts of citrus in Mobile County. (Wallace, Seibels).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - ALABAMA - Moderate on citrus in Mobile County. (Wallace, Seibels).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Appearing on citrus in some groves in Yuma area. (Ariz. Coop. Sur.).

A PINK CITRUS MITE (Aculus pelekassi) - FLORIDA - Infested citrus at Lutz (Hale, Fuller, June 6) and Tampa (Custead, June 12), Hillsborough County; at Pine Castle, Orange County (Crews, June 5); at Eagle Lake (Norton, June 18) and Davenport (Norton, Tyner, June 20), Polk County; at Umatilla, Lake County (Bentley, June 14).

SPIDER MITES (Eotetranychus spp.) - ARIZONA - E. yumensis and E. lewisi continue to cause injury to citrus in Yuma area. (Ariz. Coop. Sur.).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Infestation on tomatoes in Weber and Davis Counties above normal this season. (Knowlton, Duncan; June 24). TEXAS - Low numbers of larvae and adults on various wild hosts in Bailey County. (Tex. Coop. Rpt.; Hatchett). MISSOURI - Reported on potatoes near Greenwood and in Boone County. (Wkly. Rpt. Fr. Grs., June 26). OHIO - All larval stages and adults observed on potato plants in many southwestern counties. Several potato plants 50-95 percent defoliated near Hillsboro, Highland County. (Lyon). NEW YORK - Active in Albany County; some adults still laying eggs in Suffolk County. (N. Y. Wkly. Rpt., June 24). RHODE ISLAND - Under control in most commercial plantings in State; heaviest infestations in home gardens. (Sheehan, Mathewson). NEW JERSEY - Still active on eggplant, tomatoes, peppers and potatoes. (Ins.-Dis. Newsltr., June 25). DELAWARE - Present to numerous in few tomato fields in Sussex and Kent Counties; most fields throughout State not infested. (Burbutis). ALABAMA - Medium on potatoes in home gardens in Madison County. (Howell).

POTATO FLEA BEETLE (Epitrix cucumeris) - MICHIGAN - Adults heavy in Clinton, Ottawa and Menominee Counties. (Wells, Bowers, Machiele). RHODE ISLAND - Under control in most commercial potato plantings in State; heaviest in home gardens. (Mathewson).

FLEA BEETLES (undetermined) - VERMONT - Active on potatoes and tomatoes. (MacCollom, June 24). UTAH - Damage to tomato plants moderate this season in northern and central areas. (Knowlton, Duncan, June 24). Caused some damage to beets, radishes and turnips in Delta area, Millard County. (Knowlton, June 24). MISSOURI - Again appearing on eggplants in central area. (Wkly. Rpt. Fr. Grs., June 26).

A WEEVIL (Cylindrocopturus adspersus) - CALIFORNIA - Adults medium on tomato plantings in Reedley, Fresno County. (Cal. Coop. Rpt.).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Not found in economic numbers in Weld and Rio Grande Counties. (Jenkins).

Potato Aphids in Maine - Populations on untreated potato foliage at Presque Isle, Aroostook County, very small but increased at about normal rate. Average total number of aphids per plant increased from 0.1 to 0.2, while percent of plants

infested increased from 3.6 to 9.0. BUCKTHORN APHID (Aphis nasturtii) predominates. Small numbers of POTATO APHID (Macrosiphum euphorbiae) and traces of FOXGLOVE APHID (Acyrtosiphon solani) and GREEN PEACH APHID (Myzus persicae) present also. Overall populations now nearly four times size of 1962 and about double those of 1961 at same times. (Shands et al.).

AN APHID (Smyntthurodes betae) - NORTH CAROLINA - Stunting tomato plants in one-acre field; noted on roots. Det. by C. F. Smith. (Mount, June 21).

HORNWORMS (Protoparce spp.) - ARIZONA - Prevalent in some tomato fields in Yuma area. (Ariz. Coop. Sur.). MICHIGAN - P. quinque maculata emerging in Ingham County June 25. (Terry). MARYLAND - Light numbers of eggs noted on peppers and tomatoes in Worcester County. (U. Md., Ent. Dept.).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Medium in cherry tomato crops in Niland, Imperial County. (Cal. Coop. Rpt.).

TOMATO RUSSET MITE (Aculus lycopersici) - ARIZONA - Injuring many tomatoes in central area. (Ariz. Coop. Sur.).

GARDEN SYMPHYLAN (Scutigera immaculata) - COLORADO - Causing loss of tomato plants in field near Johnson, Weld County; 66 percent of plants lost. (Jenkins).

MEXICAN BEAN BEETLE (Epilachna varivestis) - IDAHO - Survey within Jerome City limits on May 19 failed to locate any adults or feeding injury; no adults detected through June 24. (Douglas, Priest). COLORADO - Causing trace damage in Larimer and Weld Counties. (Ins. Det. Comm.). MISSISSIPPI - Ranged light to heavy on beans in Choctaw and Prentiss Counties. (Ouzts). DELAWARE - Larvae present in large field of lima beans in southern Kent County. (Burbutis). VIRGINIA - Causing considerable damage to home gardens. Numerous for past 3 years but never so many so early. (Settle, June 20). ALABAMA - Activity appears checked by recent rains in Mobile County. (Seibels, Wallace).

PEA WEEVIL (Bruchus pisorum) - IDAHO - Numbers much greater this year in Latah and Nez Perce Counties than experienced for past several years; populations along margins of one Monroe Austrian winter peafield ran up to 8 per sweep. (Kambitsch, Portman).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults common on beans in several areas of State; on potatoes in Kent County. (Burbutis). WISCONSIN - Increasing on beans in western part of State; considerable number of adults present on lima and snap beans in La Crosse and Trempealeau Counties. Up to 5 per leaf on planting of snap beans near Holmen. (Wis. Ins. Sur.).

PEA APHID (Acyrtosiphon pisum) - OREGON - Averaging 8-10 per tip on fields of freezing varieties of peas in Woodburn area. (Hanna). IDAHO - Populations in green and seed peas below those requiring control in Lapwai and vicinity. (Portman, Kambitsch). Populations on peas below those of 1962. (Dailey). WISCONSIN - General, overall decrease observed and/or reported in most areas. Averaged 0.7 in Iowa County and 1.8 in Trempealeau County, per sweep, on early varieties of peas. Averaged 3 in Iowa County, 1.5 in Trempealeau County, 2 in Dane County, 15 in Dodge County, 5 in Fond du Lac County and 6 in Sheboygan County, per sweep, in late and midseason peas. (Wis. Ins. Sur.).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - ALABAMA - Heavy in several fields of beans in Mobile County. (Wallace, Seibels).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - DELAWARE - Generally very light on cucumbers and squash throughout State; common in field of watermelon in southwestern Sussex County. (Burbutis). MISSOURI - High populations on watermelons, cantaloups and squash in northwest area. (Munson, Thomas, Wood).

SQUASH BEETLE (Epilachna borealis) - NORTH CAROLINA - Adults noted on squash in Johnston County garden; no eggs, but a few small larvae present. (Mount).

SQUASH VINE BORER (Melittia cucurbitae) - WISCONSIN - Adults appearing in southern counties; observed in Madison area June 22. (Wis. Ins. Sur.).

SQUASH BUGS (Anasa spp.) - OKLAHOMA - A. tristis heavy on cucurbits in Bryan County area. (Okla. Coop. Sur.). DELAWARE - A. armigera on squash in southwest Sussex County. (Burbutis).

ASPARAGUS BEETLES (Crioceris spp.) - RHODE ISLAND - C. asparagi and C. duodecimpunctata common in planting in Lincoln, Providence County. (Mathewson). WISCONSIN - All stages of C. asparagi and C. duodecimpunctata causing noticeable damage to asparagus in Eau Claire County. (Wis. Ins. Sur.).

THRIPS - NEW MEXICO - Unspecified species moderately heavy and causing some damage to onions in Portales area, Roosevelt County; most fields treated. (N. M. Coop. Rpt.). COLORADO - Thrips tabaci counts 5-10 per plant on onions in Delta and Montrose Counties; fields treated where counts range 15-20 per plant. (Bulla). IDAHO - Undetermined species, probably Frankliniella tritici and T. tabaci - populations in Melba onion seed fields large; up to 350 per umbel. Damage ranges from trace to 50-70 percent of florets destroyed. Also destroying carrot seed plant umbels on very immature umbels and florets on more mature umbels, but not on flowering umbels. (Scott).

ONION MAGGOT (Hylemya antiqua) - COLORADO - Adults taken in bait traps in Delta County; no maggots found in fields to June 28. Loss of onions continues in Adams and Weld Counties. (Bulla, Jenkins).

WHEAT CURL MITE (Aceria tulipae) - IDAHO - Infested experimental onions in Parma area; ranged up to 40 per floret on umbels. (Scott).

BEEB WEBWORM (Loxostege sticticalis) - UTAH - Flight conspicuous nights of June 17 and 18; moderate flights June 19, 20, 25 and 26 at Ogden, Weber County. (Knowlton). WYOMING - Few larvae appearing in sugar beets in Laramie County; averaged 3 per 100 plants in fields surveyed. (Marks). COLORADO - Adults numerous in Adams, Larimer, Logan and Weld Counties; trace numbers of adults in Mesa County. Larvae present on sugar beets in trace numbers in Weld County. (Jenkins, Bulla).

BEEB LEAFHOPPER (Circulifer tenellus) - COLORADO - Counts high in late plantings; 1-3 per square foot in Mesa County and 1-2 per square foot in Montrose County. (Bulla).

SPINACH LEAF MINER (Pegomya hyoscyami) - OREGON - Infesting table beets in Eugene area. (Crowell).

IMPORTED CABBAGEWORM (Pieris rapae) - DELAWARE - Causing heavy damage to small field of cabbage in Sussex County. (Burbutis). PENNSYLVANIA - Adults unusually abundant in south central area. (Pepper). MICHIGAN - Young larvae appearing in Monroe County. (Proctor). OHIO - Larvae and adults moderate to heavy on cabbage throughout southwestern area. Several cabbage plants in Highland County severely eaten by larvae; 3-4 larvae per cabbage plant in some instances. Groups of 3-5 adults flying near cabbage plants and depositing eggs. (Lyon). WISCONSIN - Adults very common in southwest and west; larvae scarce. (Wis. Ins. Sur.).

CABBAGE MAGGOT (Hylemya brassicae) - NEW YORK - Damage reported by one grower in Albany County. (N. Y. Wkly. Rpt., June 24). RHODE ISLAND - Numerous in radishes in Kingston, Washington County. (Hyland).

A JAPANESE WEEVIL (Calomycterus setarius) - DELAWARE - On horseradish in a Kent County area. (Burbutis).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - Two specimens found in traps at Charleston, SOUTH CAROLINA. In GEORGIA, 13 properties released from regulation. Surveys in north FLORIDA counties resulted in finding 2 infestations in Gadsden County, 9 in Holmes County, 96 in Jackson County, one in Madison County, 3 in Okaloosa County and one in Walton County; seedbeds and storage sites being cleaned as found. All surveys in ALABAMA negative except in Escambia County where 4 new infestations found. In MISSISSIPPI, 2 infested properties found in Simpson County and one in Lincoln County; negative surveys made in 7 other counties. All surveys negative in LOUISIANA; 13 properties released from regulation. (PPC, South, Reg., May Rpt.).

STRAWBERRY ROOT APHID (*Aphis forbesi*) - WISCONSIN - Killed small planting of strawberries in La Crosse County. (Wis. Ins. Sur.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Numerous on strawberries in Weld County. (Bulla, Hantsbarger).

CYCLAMEN MITE (*Steneotarsonemus pallidus*) - NEW YORK - Severe on bed of strawberries in Niagara County. (N. Y. Wkly. Rpt., June 24).

SAWFLIES - MINNESOTA - Damage severe on strawberries and raspberries in Aitkin and Grand Rapids areas. (Minn. Ins. Rpt., June 21).

A SPIDER MITE (*Tetranychus cocosinus*) - FLORIDA - Light on blackberry at Fort Pierce, St. Lucie County. (Hayslip, June 3).

PARSLEYWORM (*Papilio polyxenes asterius*) - ALABAMA - Larvae feeding heavily on carrots, parsley and dogfennel in several locations in Mobile County. (Seibels).

GREEN PEACH APHID (*Myzus persicae*) - WASHINGTON - Average 1 per 10 leaves on sugar beets; increasing most rapidly in Walla Walla County. (Landis). COLORADO - Counts low in early potato fields in Weld County; 2-4 per 100 leaves in most fields examined. Field near La Salle, Weld County, with increasing population and now at 27 per 20 leaves. Trace numbers present on late potatoes in Larimer County. (Berry, Cress, Jenkins). DELAWARE - Scarce on peppers in Sussex County area. (Burbutis).

TOBACCO INSECTS

HORNWORMS (*Protoparce* spp.) - MARYLAND - Larvae caused heavy damage in one St. Marys County tobacco field. (U. Md., Ent. Dept.). VIRGINIA - Larvae generally very light on tobacco in Pittsylvania County; light trap collections unusually low to date. (Dominick, June 24).

TOBACCO BUDWORM (*Heliothis virescens*) - VIRGINIA - Larvae generally very light on tobacco in Pittsylvania County. (Dominick, June 24).

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - Light infestations generally present on tobacco in St. Marys County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Adults abundant in several tobacco fields in St. Marys County. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Observed in nearly all areas of State; nearly all cotton rapidly approaching 8-leaf stage; controls recommended. (Cott. News Ltr., June 20). Numbers quite low in Scotland County. Highest counts in experimental plots; about 25 per acre. (Mistic). SOUTH CAROLINA - Emergence increased over previous week in Florence area, and infestations increasing in both treated and untreated fields. With rain restricting insecticide applications, infestations can become severe. (Taft et al., June 26). GEORGIA - Percent punctured squares June 13-19 in southern area, 1-10 in 85 percent of fields, 11-25 in 2 percent of fields and none in 13 percent of fields. Activity increased somewhat from previous week, but remains generally low. With current rainy weather coinciding with expected emergence of first-generation weevils in many fields, sharp increase in infestations expected. (Jordan, June 24). Percent punctured squares June 20-26 in 20 counties, 19 below fall line and 1 in northwest, 1-10 in 91 percent of fields, 11-25 in 4 percent of fields and none in 5 percent of fields. (Jordan, June 28). ALABAMA - Several adults reported from Monroe County. Larvae becoming full grown and emergence of new generation evidently occurred in some spots in southern end of State. Infestation 40 percent punctured squares locally in southern area. Increased emergence of new generation expected in other areas; movement of overwintered adults continues. (McQueen et al.). TENNESSEE - Some squares show signs of feeding and egg laying in early cotton. Conditions ideal for emergence from hibernation. Some weevils found in Chester, Hardin, McNairy, Hardeman, Fayette and Shelby Counties. (Locke). MISSOURI - Three adults collected; total of 856 fields scouted. (French). MISSISSIPPI - Light in delta counties, and in Attala, Calhoun, Choctaw, Copiah, Holmes, Jefferson Davis, Lowndes, Madison, Monroe, Prentiss and Quitman Counties; controls applied. (Ouzts). In delta counties, punctured squares found in 21 of 37 fields checked. In infested fields, average percent punctured squares 1.2 (range 0.25-16.67). (Pfrimmer et al.). LOUISIANA - Overwintered populations remain light in Tallulah area. Square infestation light generally, but some first-brood weevils observed. Emergence from hibernation should be about finished. (Smith et al.). TEXAS - Except for few locally heavy infestations in southern and northwest areas, situation fairly favorable and some say this is lightest year of last several. (Tex. Coop. Rpt.). In McLennan and Falls Counties, percent punctured squares averaged 1.3 in early treated fields and 10.8 in untreated fields with overall average of 2.7. (Cowan et al). OKLAHOMA - Activity present in all cotton fields checked; percent punctured squares by counties 2-6 in Garvin, 16 in Johnson, 6 in Bryan, 12 in Marshall, 1 in Choctaw and 4 in Kiowa. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - GEORGIA - Eggs per 100 terminals in southern area June 13-19 ranged 1-10 in 77 percent of fields, 11-25 in 5 percent of fields, 26-50 in one percent of fields and none in 18 percent of fields. Larvae per 100 terminals ranged 1-3 in 45 percent of fields, 4-10 in 11 percent of fields, 11-25 in one percent of fields and none in 43 percent of fields. Situation unchanged from previous week; few more fields had larvae than previous week. (Jordan, June 24). Counts per 100 terminals in 20 counties, 19 below fall line and 1 in northwest, were as follows: Eggs 1-10 in 81 percent of fields, 11-25 in 3 percent of fields and none in 16 percent of fields. Larvae 1-3 in 52 percent of fields, 4-10 in 17 percent of fields, 11-25 in 2 percent of fields and none in 29 percent of fields. Number of eggs has remained fairly constant past 3 weeks, but larvae increased. Constitute major immediate threat and rains complicated problem. (Jordan, June 28). ALABAMA - Eggs decreased; ranged 0-30 per 100 terminals; probably result of rains working eggs off plants and decreased moth flights. Count of larvae in Autauga County field revealed that *H. virescens* 3 times more abundant than *H. zea*. (McQueen et al.). TENNESSEE - Small larvae causing some injury to young squares in isolated cases over western area, with heaviest damage being in rank, early cotton; counts ranged 0-16 larvae or eggs per 100 terminals. Controls needed in number of cases. (Locke). MISSOURI - Total of 856 fields scouted; 14 fields infested with 0-2 larvae per 100 plants. (French). ARKANSAS - Limited examinations show

presence of H. virescens in cotton; 7 of 10 larvae taken in cotton in Little River County were H. virescens and 4 of 7 taken in Conway County were H. virescens. (Ark. Ins. Sur.). MISSISSIPPI - H. zea and H. virescens (approximately 50 percent each species) light to medium on cotton in delta counties, and in Attala, Calhoun, Copiah, Holmes, Jefferson Davis, Lowndes, Madison, Monroe, Montgomery and Quitman Counties; controls applied. (Ouzts). In delta counties, eggs averaged 0.4 per 100 terminals in 4 of 37 fields checked. Larvae found in terminals in 9 of 37 fields and injured squares found in 18 of 37 fields. In infested fields, average percent injured squares 3.4 (range 0.67-16.67). (Pfirmer). LOUISIANA - Square damage heavy on few farms in Tallulah area; treatments applied. Egg and larval terminal counts generally low. (Smith et al.). TEXAS - Moths of H. zea increased greatly and egg deposition has been very heavy in practically all of eastern half of State; high larval populations expected within next few days. Percentage of H. virescens in bollworm-tobacco budworm complex steadily dropping due to increased H. zea activity. (Tex. Coop. Rpt.). In McLennan and Falls Counties, counts per 100 terminals 23.5 eggs and 8.2 larvae. Square injury averaged 7.1 percent in untreated fields and 4.2 percent in treated fields. Boll injury averaged 6.7 percent. Determinations of larvae showed further decrease in number of H. virescens with 89 percent being H. zea. (Cowan et al.). OKLAHOMA - No square damage noted in Garvin, Johnson and Marshall Counties. In Bryan County, 2 percent square infestation noted with 28 percent of plants showing egg deposition in one field. Counts of 5-6 percent noted in Kiowa and Choctaw Counties. (Okla. Coop. Sur.).

BOLLWORM (Heliothis zea) - NEW MEXICO - Adults appearing in light traps in Mesilla and Pecos Valley areas. (N. M. Coop. Rpt.). ARIZONA - Appearing on cotton in most parts of State. (Ariz. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Economic infestations continue in areas of coastal bend and upper coastal counties. Few infested blooms found in central area near Waco. (Tex. Coop. Rpt.). ARIZONA - One moth emerged from cages located at Safford, Graham County. (Ariz. Coop. Sur.).

BEEET ARMYWORM (Spodoptera exigua) - TEXAS - Beginning to cause light but noticeable damage to cotton in Midland and Culberson Counties. (Tex. Coop. Rpt.).

GARDEN WEBWORM (Loxostege similalis) - TEXAS - Infestations sufficient to justify controls in areas of Collingsworth, Wheeler, Floyd, Cottle, King, Hardeman and Wilbarger Counties. (Tex. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Migrating to cotton in Shafter area, Kern County, from weeds in adjacent barley and safflower fields. Few infestations still present. (Leigh, June 20). NORTH CAROLINA - Causing minor damage locally in Edgecombe County. (Powell).

STALK BORER (Papaipema nebris) - TENNESSEE - Occasional cotton plant found infested in Hardin and McNairy Counties. (Locke).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Evident in many fields and counts in Kern and Fresno County areas generally range 1-5 adults per 50 sweeps. Nymphs evident in few cases. Close observation urged. Harvest of certain crops such as alfalfa hay, safflower and potatoes causing some migration. (Leigh, June 20). Some areas along east side of Tulare County experiencing migrations of treatment level. Most fields now squaring. Prolonged wet spring delayed migrations from foothills until cotton is fruiting. Careful checks urged. (George, June 20). ARIZONA - Increasing on cotton in all sections. (Ariz. Coop. Sur.). NEW MEXICO - Populations remain relatively light in cotton throughout State. (N. M. Coop. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - LOUISIANA - Counts generally low in Tallulah area; as high as 10 per 100 sweeps found in only few fields. (Smith et al.). MISSISSIPPI - Light to medium in delta counties, and in Calhoun, Madison, Marshall, Montgomery and Quitman Counties; controls applied. (Ouzts). In

delta counties, ranged 1-5 (averaged 1.8) per 100 sweeps in 13 of 37 fields checked. (Pfrimmer et al.)

COTTON FLEAHOPPER (*Psallus seriatus*) - ARIZONA - Increasing on cotton in all sections. (Ariz. Coop. Sur.). TEXAS - Still serious in areas where cotton squaring heavily; controls being applied. (Tex. Coop. Rpt.). LOUISIANA - Counts generally low in Tallulah area. (Smith et al.). ALABAMA - No increase apparent. (McQueen et al.).

A BLACK FLEAHOPPER (*Spanogonicus albofasciatus*) - NEW MEXICO - Averaged up to 20 adults per 100 sweeps in cotton in southern Dona Ana County prior to treatment. (N. M. Coop. Rpt.). ARIZONA - Increasing in all sections on cotton. (Ariz. Coop. Sur.).

APHIDS - NORTH CAROLINA - Problems reported in Coastal Plain area. (Cott. News Ltr., June 20). CALIFORNIA - *Aphis craccivora* continues severe in portions of some fields in Shafter area, Kern County; controls necessary. Severe stunting evident where infestations persistent. Rapid growth evident following control. (Leigh, June 20).

LEAFHOPPERS - MISSISSIPPI - Various species medium on cotton in Montgomery County. (Ouzts).

THRIPS - CALIFORNIA - Moderately present in all fields of untreated cotton in Riverside County. (Eskafi, June 20). NEW MEXICO - Moderately heavy populations damaging cotton foliage in Portales area, Roosevelt County. Populations generally light in southern counties. (N. M. Coop. Rpt.). TEXAS - Causing spotted damage to cotton in northwest, but most cotton in other areas large enough to escape further damage. (Tex. Coop. Rpt.).

A SERPENTINE LEAF MINER - OKLAHOMA - Infestations caused considerable concern as from 1-5 miners present in leaves of cotton in Choctaw County. (Okla. Coop. Sur.).

SPIDER MITES - NORTH CAROLINA - Appearing earlier than usual; spotted in dangerous proportions in Nash, Halifax and Lincoln Counties. (Cott. News Ltr., June 20). ALABAMA - *Tetranychus cinnabarinus* heavy locally in Monroe County; mites further north in State mixed species including *T. atlantius* and *T. schoenel*. (Canerday, McQueen et al.). MISSISSIPPI - *Tetranychus* spp. light in Calhoun and Prentiss Counties. (Ouzts). ARIZONA - *Tetranychus* spp. continue a problem in many cotton fields. (Ariz. Coop. Sur.). CALIFORNIA - Evident in most fields in Shafter area of Kern County; *Tetranychus atlanticus* dominant with some *T. telarius* and *T. pacificus* also present. (Leigh, June 20; Black, June 21); *T. atlanticus* low to moderate in Riverside County with some fields requiring treatment. (Eskafi, June 20). Controls effective in Tulare County; populations moving into new growth in some fields recently irrigated. (George, June 20).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE BARK BEETLES - MISSISSIPPI - Light to heavy, isolated infestations of Ips spp. occurring on pines in Choctaw and Forrest Counties. (Ouzts). ALABAMA - Dendroctonus frontalis and D. terebrans damaged pine in Mobile County during drought; trees now dying in spots following heavy rains. (Wallace, Seibels). VIRGINIA - Continuing epidemic of D. frontalis did not materialize; in most instances, majority died prior to emergence. Ips spp. commonly found in association with new attacks in 1962 D. frontalis infested areas. Salvage value realized from pulpwood and timber (beetle-killed trees only) from D. frontalis epidemic in 1962 on Cumberland, Buckingham-Appomattox and Prince Edward State Forests totaled 17,000 and 1,200 and 1,575 dollars, respectively. Single new spot in loblolly pine in King William County killed by D. frontalis; overwintering beetles noted in several Virginia and shortleaf pines in Prince Edward County and 2 tracts in Cumberland County; suspected activity in these hosts in Fairfax and Fauquier Counties involving several small spots; new activity also noted in Fluvanna County; continues evident on Eastern Shore although no alarming increase in activity evident. Dendroctonus spp. killed scattered loblolly pine on 3 tracts of 1-20 acres in Brunswick County. (For. Pest Sur. Rpt., May).

WHITE-PINE WEEVIL (Pissodes strobi) - MINNESOTA - Very low populations causing some leader damage in plantation south of Biwabik, St. Louis County. (Minn. Ins. Rpt.). WISCONSIN - Larvae nearly full grown and damage conspicuous in Sauk County June 25; many weeviled leaders opened by birds. (Wis. Ins. Sur.). NEW YORK - Damage appears to be considerably less in central area this season. (N. Y. Wkly. Rpt., June 24).

A PINE WEEVIL (Pissodes approximatus) - OHIO - Damaged Scotch and Austrian pines at Granville, Licking County, central area; 50 percent pupae June 21. (Walker). PENNSYLVANIA - Pupation 75 percent in Scotch pine stumps in Jefferson County. (Adams, June 21).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - OKLAHOMA - Populations heavy in Stillwater area, Payne County, with 50-75 percent of terminals infested. (Okla. Coop. Sur.). ARKANSAS - Full-grown larvae and pupae of second generation observed in Conway County. (Ark. Ins. Sur.). VIRGINIA - Damage noted on loblolly pine in Henrico County; remains prevalent throughout Portsmouth district. (For. Pest Sur. Rpt., May).

JACK-PINE BUDWORM (Choristoneura pinus) - MINNESOTA - High numbers of middle and late larval stages present in Camp Riley Reservation and Foot Hills State Forest. (Minn. Ins. Rpt., June 21). Pupating in north central area; late stages still feeding. (Minn. Ins. Rpt.). WISCONSIN - Pupae found in Polk County June 20; defoliation light. Populations light in Marinette County; larvae three-sixteens to half inch long June 14. (Wis. Ins. Sur.).

ZIMMERMAN PINE MOTH (Dioryctria zimmermani) - MINNESOTA - Causing some damage to pine terminals in Sturgeon Lake area, Pine County. (Minn. Ins. Rpt.).

LARCH CASEBEARER (Coleophora laricella) - MINNESOTA - Causing serious defoliation of tamarack in northeast Aitkin and southwest St. Louis Counties; infestation spread slightly from that of 1962. (Minn. Ins. Rpt., June 21).

SPITTLEBUGS (Aphrophora spp.) - MICHIGAN - A. saratogensis heavy in Huron National Forest, in Alcona County; 5,500 acres to be treated during second week of July. (Millers). A. parallela heavy on jack pine in Oscoda County; light in Lake and Kalkaska Counties. (Millers, Brown). WISCONSIN - Highest populations of A. parallela observed in recent years reported in Sterling, Polk County, June 20; 10-20 last-stage nymphs per twig found on natural and planted jack pine. Adults observed in Dane County. A. saratogensis light to moderate on few scattered plantings in Vilas County; higher numbers found in some Marinette County plantations with some controls anticipated. Most nymphs in

northeast counties in third stage; small proportion in fourth and fifth stages. (Wis. Ins. Sur.). MINNESOTA - High counts of A. parallela found in Crow Wing, Cass and Hubbard Counties; still in nymphal stage and in spittle masses on jack pine. (Minn. Ins. Rpt., June 21).

PINE BARK APHID (Pineus strobi) - MINNESOTA - Generally distributed in midcentral and north central areas; heavy in Grand Rapids area, Itasca County. (Minn. Ins. Rpt., June 21).

CONIFER SAWFLIES - WASHINGTON - Neodiprion sp. causing extensive damage to native ponderosa pine stands in Amber Lake-Cheney area, Spokane County. (Harwood, James). MINNESOTA - Early stage Diprion similis larvae present, with some adults still laying eggs; principal infestations in Cass and Crow Wing Counties. White pine preferred host, but much damage has occurred on jack pine in area. (Minn. Ins. Rpt., June 21). First to fourth-stage D. similis larvae generally distributed; first-generation numbers generally low. Larvae of Neodiprion pratti banksianae beginning to cocoon; late instars still defoliating in southern St. Louis, northern Pine and Cass Counties. N. lecontei adults ovipositing in Aitkin and Pine Counties; larvae should appear in 10-14 days. (Minn. Ins. Rpt.). NEW YORK - Neodiprion sertifer larvae completed feeding on Scotch pine Christmas-tree plantation near Utica, Oneida County. (N. Y. Wkly. Rpt., June 24). VIRGINIA - Neodiprion pratti pratti noted throughout Brunswick County and scattered spots in Dinwiddie County on loblolly and shortleaf pines; increasing slightly in Louisa and Fluvanna Counties; remained low in Spotsylvania, Orange, Fauquier and Culpeper Counties; activity light throughout Charlotte County and defoliation less than in 1962 in Tappahannock district. Unspecified species caused defoliation of loblolly pine on 15-acre stand in Powhatan County and active on Virginia and loblolly pines on scattered areas in King William County. (For. Pest Sur. Rpt., May).

LARCH SAWFLY (Pristiphora erichsonii) - MINNESOTA - Early stage larvae causing some damage to tamarack in northeastern area. (Minn. Ins. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ARIZONA - Injuring elms in Maricopa, Pinal and Apache Counties; controls needed. (Ariz. Coop. Sur.). NEVADA - Adults and larvae caused heavy damage to elms in Smith and Mason Valleys, Lyon County. (Cooney). Damage to elms in Caliente, Lincoln County, much heavier than in 1962. (Bechtel, Martinelli, Zoller). IDAHO - Adults, eggs and first and second stage larvae present in Parma area, Canyon County; larvae range up to 8 per leaf on unsprayed foliage. (Scott). COLORADO - Defoliating elm in western Montrose County. (Hantsbarger). OKLAHOMA - Third-generation larvae feeding in Stillwater area, Payne County. Severe defoliation occurring in localized portions of south central area of State. (Okla. Coop. Sur.). ALABAMA - Larval feeding heavy on elms, with adults appearing in large numbers. An estimated 90 percent of leaves on many untreated elms affected; approximately same conditions exist in Lee and several other central area counties. (Smith et al.). MARYLAND - Injuring Chinese elms in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.). VERMONT - Appearing in Chittenden and Addison Counties. (MacCollom, June 24).

LEAF BEETLES - NORTH DAKOTA - Large numbers of Chrysomela crotchii continue to appear on willow and poplar, in grain fields, and around homes. (N. D. Ins. Sur.). MICHIGAN - Plagioderma versicolora larvae infesting willow windbreaks in Clinton County muck fields; dropped to soybeans prior to pupation causing concern to farmers, but no damage. (Janes). ARKANSAS - Xenochalepus dorsalis heavy on locust in Faulkner County. (Ark. Ins. Sur.). ALABAMA - Heavy, isolated infestations of Chrysomela scripta complex noted on willows in Mobile County. (Bolton, Seibels).

BARK BEETLES - WISCONSIN - Numerous active cases of Dutch elm disease observed in Rock and Green Counties; most severely affected trees in Rock, Sugar and Avon River bottoms. (Wis. Ins. Sur.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Webbing and defoliation extensive on variety of trees in Bryan and Marshall Counties. (Okla. Coop. Sur.).
DELAWARE - First larvae of season found in a Kent County area. (Bray).

CANKERWORMS - MICHIGAN - Paleacrita vernata and Alsophila pometaria larvae caused widespread damage to birch, oak, elm, wild cherry, apple and poplar in Emmet, Charlevoix and Otsego Counties. (Festerling, Pangborn, Durren).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Infestations of 20-30 percent reported in Bryan County; continues active in Okfuskee County area. (Okla. Coop. Sur.).

CATALPA SPHINX (Cerotomia catalpae) - WISCONSIN - Relatively high numbers of second-stage larvae feeding on catalpas in a southern area of Grant County. (Wis. Ins. Sur.). OHIO - Small larvae light on catalpas near Hillsboro, Highland County, southwest; few leaves 20-25 percent skeletonized; occasionally 18-20 larvae per leaf. (Lyon, Triplehorn).

A LEAF MINER MOTH (Phyllocnistis populiella) - IDAHO - Severe on aspen in Priest River, Bonner County. (Portman).

GYPSY MOTH (Porthetria dispar) - Egg hatch noted as follows: MAINE - Dayton May 8, Brownfield May 10, Skowhegan May 13, Waterville May 14, Dixfield May 15; in NEW HAMPSHIRE - New London and Concord May 10; VERMONT - Bellows Falls May 4, Pownal and Sandgate May 7, Rutland May 11 and Shelborne May 14; NEW YORK - Orleans May 6. Heavy frost in Vermont and New Hampshire did not affect first and second instars. Aerial treatments began in NEW JERSEY May 3, completed May 30. Total of 34 separate blocks treated in Sussex, Morris, Passaic, Bergen and Warren Counties. Aerial treatment began in southern New York May 16 in Westchester and Rockland Counties. Accessible infestations in Nassau and Queens Counties, Long Island, treated with ground equipment. More than two-thirds of 160,000 acres scheduled for treatment in heavily infested areas of eastern New York treated by end of May. Treatment completed in PENNSYLVANIA May 16; involved 8,060 acres in Pike and Monroe Counties. Total of 109,268 acres treated in Franklin, Hampden and Hampshire Counties, MASSACHUSETTS. Nursery and environ treatment of 2,026 acres in CONNECTICUT completed. (PPC, East. Reg.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - NEW YORK - Prevalent in some sections about Schenectady where elms, willows and other trees partially defoliated. (N. Y. Wkly. Rpt., June 24).

EUROPEAN ELM SCALE (Gossyparia spuria) - PENNSYLVANIA - Infesting 30-40 foot elms in Lebanon County; severe on some trees. (Wolf). COLORADO - Crawlers active in Yuma County. (Hantsbarger).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - INDIANA - Abundant at Fowler, Benton County; many silver maples heavily infested. Controls being applied. (Schuder). IDAHO - Crawlers active in Canyon County. (Bechtolt).

PECAN LEAFROLL MITE (Aceria caryae) - OKLAHOMA - Causing considerable damage to pecan leaves in Stillwater area, Payne County; one-third of leaves curled. (Okla. Coop. Sur.).

A MIDGE (Dasyneura gleditschiae) - IDAHO - First-generation emergence nearly complete in Parma area, Canyon County. Adults numerous around honeylocusts; 5-10 per leaf. (Scott).

BIRCH LEAF MINER (Fenusa pusilla) - NEW YORK - Damage especially severe in Schenectady area, with new growth just appearing. Moderately damaged birch in Broome County; second egg laying underway. (N. Y. Wkly. Rpt., June 24).

A GALL WASP (Callirhytis cornigera) - ALABAMA - Galls heavy on isolated red oaks in Madison County; same situation has occurred for 3 consecutive years. (Magnusson).

JAPANESE BEETLE (Popillia japonica) - NEW YORK - Observed June 18 in Schenectady area. (N. Y. Wkly. Rpt.). RHODE ISLAND - Single adults collected in Kingston, Washington County, and in Warwick, Kent County. (Mathewson, Sorensen). NEW JERSEY - Adults appearing generally on ornamentals. (Ins.-Dis. Newsltr., June 25). MARYLAND - Adult emergence continues at high rate in several Prince Georges County areas; reported troublesome on roses, flowering crab apple and other ornamentals in several counties. (U. Md., Ent. Dept.). VIRGINIA - First adults noted in Charles City and New Kent Counties, June 20 (Settle); active on many ornamentals in Pittsylvania County, first collected June 14 (Dominick); medium on corn and crapemyrtle in Amelia County (Holmes, June 20); large numbers present in Newport News area (Evans, June 26); common on wide variety of plants in King George, Westmoreland, Richmond, Northumberland, Lancaster, Essex, Middlesex, Mathews, Gloucester, King and Queen and King William Counties (Tarpley). NORTH CAROLINA - Damaging grapes, roses and other ornamentals at a Hertford County location. (Wright). OHIO - Two adults observed feeding on roses in Athens, Athens County, southeast; 2 adults found on buckthorn hedge at Wooster, Wayne County, northeast. (Davidson). INDIANA - First adults of season found June 22 in Newton County. (Gould). MICHIGAN - Two adults collected at traps at Battle Creek, Calhoun County, June 24; this is 2 weeks earlier than first collections during other years. (Dowdy). Adult traps being placed in Greater Detroit, Ypsilanti, Lansing, Flint, Grand Rapids, Niles, Battle Creek, rural Monroe County, rural Lenawee County and rural Berrien County. Few traps also being located along major highways near truck-stops and other places where beetles might possibly be found. (Godlewski, Ring).

ROSE CHAFER (Macroductylus subspinosus) - WISCONSIN - Unusually high numbers and serious injury to ornamentals reported from some parts of Columbia, Shawano, lower Trempealeau, Waushara and Marquette Counties. (Wis. Ins. Sur.). MICHIGAN - Injury heavy in Charlevoix, Emmet and Midland Counties, light to moderate in Kalkaska, Menominee, Grand Traverse and Ottawa Counties. (Rebman, Pangborn, Durren, Grose, Brown, Bowers, Mullet, Machiele). PENNSYLVANIA - Large numbers, probably this species, defoliating oak in Potter County. (Adams). NEW YORK - Adults active and numerous in Putnam, Genesee and Onondaga Counties; quite prevalent on wide variety of plants in Schenectady area. (N. Y. Wkly. Rpt., June 24). RHODE ISLAND - Common statewide on variety of plants. (Mathewson, Buonaiuto). VERMONT - Abundant. (MacCollom, June 24).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - IDAHO - Adults notched 30-foot row of peonies in a backyard in Orofino, Clearwater County. (Portman). RHODE ISLAND - First adults of season observed at Portsmouth, Newport County. (Cartier).

ARBORVITAE WEEVIL (Phyllobius intrusus) - NEW YORK - Adults active on juniper and white-cedar at Huntington Station, Long Island, June 11 and 19. (N. Y. Wkly. Rpt.). RHODE ISLAND - Adults found on arborvitae in nursery in Middletown, Newport County; this is late record for adults. (Cartier).

A WEEVIL (Ochyromera ligustri) - NORTH CAROLINA - Population peak of large numbers occurring on ligustrum from Davidson to Wake and New Hanover Counties June 24. (Sessions, Wray). See CEIR 12(23):607-608 for other information.

PINE WEBWORM (Tetralopha robustella) - MARYLAND - Infesting Christmas-tree pine seedlings at Woodbine, Howard County. (U. Md., Ent. Dept.).

MIMOSA WEBWORM (Homadaula albizziae) - DELAWARE - First young larvae of season noted on honeylocust in northern Kent County. (MacCreary).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Continues damaging to evergreens around State. (Okla. Coop. Sur.).

SUNFLOWER MOTH (Homoesoma electellum) - TEXAS - Heavy, localized larval population damaging ornamental sunflowers in Hill County. (Hoermann).

APHIDS - CALIFORNIA - Aphis fabae heavy on Viburnum sp. in Chico, Butte County. Cinara curvipes heavy on deodar cedars in Tracy area of San Joaquin County. Myzocallis ulmifolii and Eriosoma lanigerum heavy on elms in Oroville, Butte County, with M. ulmifolii also heavy on same host in Sacramento, Sacramento County. Chromaphis juglandicola medium on pecan and walnut trees in Sanger, Fresno County. (Cal. Coop. Rpt.). ARIZONA - Unspecified species appearing on arborvitae in Graham, Greenlee and Pima Counties. (Ariz. Coop. Sur.). UTAH - Drepanaphis utahensis and D. granovskyi heavy on bigtooth maple in areas near Mantua, Box Elder County. Eucерaphis gillettei sometimes heavy and Calaphis coloradensis moderate on birch in unspecified locations. Eriosoma americanum curled many leaves on elms in northern part of State. (Knowlton, June 24). NORTH DAKOTA - Several additional instances of Chermes sp. on spruce observed in Fargo area, Cass County. (N. D. Ins. Sur.). MINNESOTA - Unspecified species infesting some ornamental crab apple and apple trees in nurseries. (Minn. Ins. Rpt.). NEW JERSEY - Unspecified species plentiful on shrubs, roses and shade trees. (Ins.-Dis. Newsltr., June 25). RHODE ISLAND - Neopropociphilus sp. extremely heavy on maple at Rice City, Kent County. (Mathewson). Miscellaneous species common statewide on shade trees and increasing with hot weather, especially on maple, oak and linden. (Mathewson, Cartier, Buonaiuto).

BOXELDER BUG (Leptocoris trivittatus) - IDAHO - Eggs hatching in Parma, Canyon County. Adults, eggs and first three larval stages present. (Scott, Waters).

LACE BUGS - MARYLAND - Injuring azaleas and Crataegus sp. in sections of Prince Georges County. (U. Md., Ent. Dept.). NEW YORK - Stephanitis pyrioides damaging extensive azalea planting at a Nassau County garden center. (N. Y. Wkly. Rpt., June 24).

COCCIDS - VERMONT - Lecanium sp. infesting yew in Windham County. (MacCollom, June 24). RHODE ISLAND - Lecanium fletcheri eggs hatched on yew in North Kings-town, Washington County. Lepidosaphes yanagicola eggs hatching on euonymus in Middletown, Newport County, June 27; this is first report of hatch date for this species in State. (Cartier). CONNECTICUT - Lecanium sp. a problem on Taxus sp. in Manchester. (Savos). NEW YORK - Various species notably prevalent and damaging to ornamentals throughout State. Lecanium corni still in egg stage on ornamental blueberry at Farmingdale, Long Island, June 10. Lecanium spp. of concern to homeowners in Broome County. (N. Y. Wkly. Rpt., June 24). PENNSYLVANIA - Pseudococcus maritimus medium to heavy on yew nursery stock in Berks County. (Stroehrer). MARYLAND - In Prince Georges County, Ceroplastes sp. crawlers appeared June 26 at Lewisdale, and Unaspis euonymi heavy on euonymus at several locations in Cheverly. (U. Md., Ent. Dept.). FLORIDA - Ceroplastes floridensis infesting Raphidophora decursiva at Ocala, Marion County (Graham, June 19). Gymnaspis aechmeae light on 100 Billbergia moreli at Ft. Myers, Lee County (Shirah, June 19). Pulvinaria psidii severe on Sideroxylon foetidissimum at Miami, Dade County (Brown). Aspidiotus perniciosus infesting Diospyros sp. at Orlando, Orange County (Crews, June 20). OHIO - Chionaspis salicis-nigrae infesting willows at St. Clairsville, Belmont County, east central. (Brown, Holdworth). ARIZONA - Icerya purchasi killed many pittosporum plants in Safford area, Graham County. (Ariz. Coop. Sur.).

CRICKETS - ALABAMA - Apparently Orocharis saltator principal species, on increase on ornamentals in southern Mobile County, following extended rains. Rapid increase in size indicates considerable feeding. (Wallace, Seibels).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Moderately troublesome about some yards, with some damage to flowering plants, in parts of Cache, Davis, Salt Lake, Utah and Sanpete Counties, and at Kanab, Kane County. (Knowlton, June 24).

A DRYWOOD TERMITE (Cryptotermes cavifrons) - FLORIDA - Heavily infested Sabal palmetto at Shired Island, Dixie County, May 30, 1963. Abundant on stems or trunks of living plants; some so heavily infested that wind breakage of trunks occurred. Det. by L. A. Hetrick. Confirmed by T. E. Snyder. Also collected at Tampa, Hillsborough County, May 6, 1963, by E. P. Burnett. (Fla. Coop. Sur.).

A ROTTENWOOD TERMITE (Zootermopsis angusticollis) - CALIFORNIA - Heavy in oak stumps in Paradise, Butte County. Many yard infestations occurred this season; probably result of early rain at flight time last fall. (Cal. Coop. Rpt.).

NATIVE HOLLY LEAF MINER (Phytomyza ilicicola) - DELAWARE - Development of first larval brood completed in new spring growth. (Burbutis). NEW YORK - Oviposition continued in new growth at Middle Island, Suffolk County, June 12. (N. Y. Wkly. Rpt.).

SPIDER MITES - CALIFORNIA - Oligonychus coniferarum heavy on junipers in Sacramento, Sacramento County. (Cal. Coop. Rpt.). MINNESOTA - Tetranychus telarius infesting spruce and arborvitae in Brainerd area, Crow Wing County. (Minn. Ins. Rpt., June 21). Unspecified species building up on many evergreen plantations; as warm weather favors rapid buildup, susceptible stock should be closely watched. (Minn. Ins. Rpt.). CONNECTICUT - Various species injuring many evergreens. (Savos). RHODE ISLAND - Reports and complaints of various species increasing with advent of warm weather. (Mathewson).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - NEVADA - Aedes spp. adult numbers heavy in Fallon, Churchill County; Elko, Elko County; and Smith and Mason Valleys, Lyon County. (Bechtel, Cooney, Earnist, Martinelli). UTAH - Continue very numerous from Manti to Moroni and in other localities in Sanpete County; also troublesome in western areas of Millard County. (Knowlton, Funk; June 24). Annoyance severe in Randolph-Woodruff and Bear Lake areas, Rich County; annoyance common in Cache County agricultural fields. (Knowlton). Very abundant and annoying many Box Elder County communities and farm areas (Knowlton, Allred); very troublesome in parts of eastern Millard County (Knowlton, Rickenbach); extremely numerous and troublesome in many parts of Duchesne County (Knowlton, Smith). WYOMING - Several species becoming considerably annoying to man and animals throughout State. (Marks). MINNESOTA - Total of 841 larval collections made June 9-15; Aedes vexans, main pest species, present in 53 percent of collections; 29 percent contained Culex territans, 15 percent Culiseta inornata. Aedes vexans comprised 74 percent of light trap collections and 65 percent of evening bite collections. Remainder of evening bite collections were 11 other Aedes spp. Mansonia perturbans (a vicious biter) appearing in significant numbers in light trap and bite collections. Substantial increase in mosquitoes occurred during past week, as result of rain that occurred on 8 of 10 days. Indications are that population peaked June 19 and is declining. Heavy rains resulted in gradual rise of St. Croix, Minnesota and Mississippi Rivers, inundating adjacent low-lying areas and resulting in almost continuous hatch. During period June 16-22, total of 444 larval samples taken; 196 contained Aedes vexans, 69 Culiseta inornata, 141 Culex restuans, 103 Culex territans. Small numbers of 15 other species also taken. (Minn. Ins. Rpt.). WISCONSIN - High numbers of unspecified species reported in Madison area, Dane County; light trap catches also indicate above normal activity. Aedes vexans comprised approximately 95 percent of species taken in traps. Few reports indicate mosquitoes bothering cattle grazing at night, but situation not acute. (Wis. Ins. Sur.). MISSISSIPPI - Psorophora spp. range medium to heavy in delta area; controls applied. (Ouzts).

area, Payne County. (Okla. Coop. Sur.). MISSISSIPPI - Medium to heavy on livestock in Choctaw, Holmes and Lowndes Counties and in delta area. Controls applied. (Ouzts). MICHIGAN - Annoying in many areas. (Campana, Machiele, Bowers, Brown). INDIANA - Populations apparently declining in central area with advent of hot, dry weather. Ranged 25-50 per treated animal. (Dobson). MARYLAND - Ranged 2-20 (average 5) per head on dairy cattle checked in Frederick County. (U. Md., Ent. Dept.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Particularly troublesome in Dodge County; most troublesome fly species in Oconto and Chippewa Counties. (Wis. Ins. Sur.). KANSAS - Ranged 0-40 per animal on cattle in south central and southeast areas. (Peters). OKLAHOMA - Light to moderate in south central and southeast; 3-5 per head. Averaged 3 per animal in Stillwater area, Payne County. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta area; no controls. (Ouzts). NORTH CAROLINA - Noted as very annoying to group of horses in Lenoir County. (Bruce).

TABANIDS - UTAH - Becoming troublesome in parts of Tooele and Millard Counties. (Knowlton, June 24). Severely annoying in Randolph-Woodruff and Bear Lake areas of Rich County. (Knowlton). WISCONSIN - A problem in areas near woods in Oconto and Chippewa Counties. (Wis. Ins. Sur.). MICHIGAN - Unspecified species annoying in many areas. (Campana, Machiele, Bowers, Brown). OKLAHOMA - Tabanus spp. remain light on animals in southeast. (Okla. Coop. Sur.). MISSISSIPPI - Tabanus spp. medium on livestock in delta area; controls applied. (Ouzts).

FACE FLY (Musca autumnalis) - VERMONT - Prevalent statewide. (MacCollom, June 24). MARYLAND - Increasing slowly; ranged 2-50 per head on dairy cattle in Frederick and Howard Counties. (U. Md., Ent. Dept.). OHIO - Building up rather rapidly; 20-30 per cow observed at Columbus, Franklin County, central area; populations higher on calves. (Holdsworth). INDIANA - Apparently building up in central area; up to 25 per face, with flies resting on other areas of animal when horn fly numerous. Dry weather apparently affecting face fly. (Dobson). ILLINOIS - Varied 0-34 (average 7.2) per face on dairy cattle in Will and Cook Counties. (Ill. Ins. Rpt.). WISCONSIN - Ranged 10-15 per cow in Dodge County. (Wis. Ins. Sur.). MISSOURI - Counts remain about same as previously reported in central and north central areas; averaged 11, 5 and 6.4 per animal on 3 herds in extreme northwest area, with high count of 39 on one animal. (Wingo).

HOUSE FLY (Musca domestica) - VERMONT - Breeding rapidly. (MacCollom, June 24). INDIANA - Building up in poorly cared for barns in central area. (Dobson). OKLAHOMA - Averaged 35 per Scudder grid in Stillwater area, Payne County. (Okla. Coop. Sur.). UTAH - Troublesome about Duchesne and other communities in Duchesne County. (Knowlton, Smith).

CATTLE GRUBS (Hypoderma spp.) - INDIANA - H. lineatum adult activity apparently over in central area; very little gadding noted since June 20; apparently due to dry weather. (Dobson). UTAH - "Heel flies" running cattle in Cache County; especially noticeable week of June 5. Also reported in several other areas of State. (Dorst, Knowlton).

LICE - WISCONSIN - Linognathus sp. and Haematopinus sp. infesting cattle in La Crosse County. (Wis. Ins. Sur.).

BITING MIDGES (Culicoides spp.) - WISCONSIN - Troublesome in Vilas and Sauk Counties. (Wis. Ins. Sur.).

BLACK FLIES - MICHIGAN - Unspecified species annoying in many areas. (Campana, Machiele, Bowers, Brown).

CHIGGERS - SOUTH CAROLINA - Troublesome in Clemson area, June 16. (Nettles et al.). INDIANA - Eutrombicula spp. active in brushy areas; caused considerable problem to householders. (Dobson).

TICKS - MICHIGAN - Abundant in Menominee, Delta and Dickinson Counties. (Bowers, Pangborn). RHODE ISLAND - Dermacentor variabilis adults continue active, but complaints relatively few in number. (Mathewson).

A BROWN SPIDER (Loxosceles reclusa) - OKLAHOMA - Causing considerable concern in Stillwater area, Payne County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

LARDER BEETLE (Dermestes lardarius) - SOUTH DAKOTA - Unusually large number of specimens still being sent in for determination. (Spawn). WISCONSIN - Unusually high numbers present this season in Fond du Lac and Grant Counties. Number of inquiries from scattered areas of State indicate problem is widespread. (Wis. Ins. Sur.). MICHIGAN - Larvae reported from such widespread locations as Alger, Clare and Ingham Counties indicate more general problem than usual. Reported chewing through ceiling insulation. (Campana, Janes). PENNSYLVANIA - Reported from a Potter County home. (Adams).

CARPET BEETLES - CALIFORNIA - Anthrenus verbasci heavy in carpets and throughout house in Heber, Imperial County. Heavy adult numbers on pyracantha common this spring. (Cal. Coop. Rpt.). NORTH CAROLINA - Attagenus piceus heavy in a Wake County home June 12. (Wray).

OLD-HOUSE BORER (Hylotrupes bajulus) - MARYLAND - Adults appeared in buildings June 20 at Whitehaven, Wicomico County, and June 25 at Prince Frederick, Calvert County. (U. Md., Ent. Dept.). PENNSYLVANIA - Infesting floor of gymnasium in school building in McKean County. (Adams, June 21).

CASEMAKING CLOTHES MOTH (Tinea pellionella) - ALABAMA - Complaints received from several homeowners in Mobile County. (Wallace, Seibels).

INDIAN-MEAL MOTH (Plodia interpunctella) - PENNSYLVANIA - More than usual number of inquiries concerning home infestations being received. (Pepper).

CARPENTER ANTS (Camponotus spp.) - CONNECTICUT - Workers and swarms creating problems statewide. (Savos). RHODE ISLAND - Heavy in several buildings on same property in Little Compton, Newport County. (Mathewson). MISSISSIPPI - Light in Neshoba County. Controls applied. (Ouzts). NORTH CAROLINA - C. pennsylvanicus heavy in a Caldwell County home June 17. (Wray).

PAVEMENT ANT (Tetramorium caespitum) - CONNECTICUT - Swarms and workers a problem statewide. (Savos). NEW JERSEY - Swarming and of concern to homeowners. (Isn.-Dis. Newsltr., June 25). MARYLAND - Winged forms and workers appearing in homes and around properties in Baltimore and Prince Georges Counties. (U. Md., Ent. Dept.).

LARGER YELLOW ANT (Acanthomyops interjectus) - NEW JERSEY - Swarming and causing concern to homeowners. (Isn.-Dis. Newsltr. June 25).

CLOVER MITE (Bryobia praetiosa) - CALIFORNIA - Heavy adult numbers occurred on walls of army base hospital in Suisun, Solana County. (Cal. Coop. Rpt.).

MILLIPEDS - NORTH CAROLINA - Oriulus venustus very numerous in a Wake County home; also reported in Piedmont area. Millipeds have been unusually abundant around houses this spring because of wet weather. (Wray).

BENEFICIAL INSECTS

LADY BEETLES - IDAHO - Larvae ranged up to one per sweep in some Canyon County alfalfa; first of season. (Bechtolt). WYOMING - Adults of several species averaged 25 per 100 sweeps in Laramie County alfalfa. (Marks). NEBRASKA - Hippodamia spp. adults ranged 2-5 per 10 sweeps in alfalfa in southern and southwest areas. (Bell, Hauke, Bergman). ALABAMA - Hippodamia convergens and Coleomegilla maculata fuscilabris most numerous predators on citrus graft fields in Mobile County. (Wallace, Seibels).

FIERY HUNTER (Calosoma calidum) - WISCONSIN - Very numerous and flying from tree to tree in a pine tussock moth outbreak area in Douglas County June 23. (Wis. Ins. Sur.).

MELYRID BEETLES (Collops spp.) - CALIFORNIA - Evident on cotton in Tulare County. (George, June 20).

PUNCTUREVINE WEEVILS (Microlarinus spp.) - NEVADA - Adults of M. lareynii and M. lypriformis heavy on puncturevine in Moapa Valley, Clark County. (Bechtel, Martinelli, Zoller).

LACEWINGS - NEBRASKA - Averaged 2 per 10 sweeps in Red Willow County alfalfa. (Bell, Hauke, Bergman). IDAHO - Larvae ranged up to one per sweep in some alfalfa in Canyon County; first of season. (Bechtolt).

DAMSEL BUGS (Nabis spp.) - NEBRASKA - Adults ranged 4-10 per 10 sweeps in southern and southwestern area alfalfa. (Bell, Hauke, Bergman). WYOMING - Adults averaged 22 per 100 sweeps in Laramie County alfalfa. (Marks).

FLOWER BUGS (Orius spp.) - NEBRASKA - Ranged 3-10 per 10 sweeps in south and southwest area alfalfa. (Bell, Hauke, Bergman).

BIG-EYED BUGS (Geocoris spp.) - CALIFORNIA - Increasing numbers being observed on cotton in Tulare County; numerous eggs appearing in mite colonies. (George, June 20).

AN ICHNEUMON (Magarhyssa sp.) - COLORADO - Active around trees infested with horntails in Elbert County. (Hantsbarger).

MISCELLANEOUS INSECTS

A POWDER-POST BEETLE (Lyctus cavicollis) - CALIFORNIA - Heavy in bamboo furniture in residence in Santa Rosa, Sonoma County. Infestations in household bamboo accessories becoming more frequent. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Small extension found in Wilmington, NORTH CAROLINA; treatments completed in several counties; damage to tobacco reported in several fields in Pender County. Treatment of 20 acres of railroad right-of-way and industrial area in Florence, SOUTH CAROLINA, completed; border treatment applied to infestations in Orangeburg County. Specimens collected for the first time in Stewart and Evans Counties, GEORGIA. Larval surveys in northern FLORIDA counties revealed number of small infestations near known infested properties. Damaged field peas in Covington County, cotton in Conecuh County, corn and strawberries in Baldwin County, ALABAMA. Treatment completed at Paris, Henry County, TENNESSEE. Specimens collected for first time in Poinsett County, ARKANSAS. (PPC, South. Reg., May Rpt.). Soil treatment of 2,149 acres completed in City of Norfolk, VIRGINIA, May 14. (PPC, East. Reg.).

JAPANESE BEETLE (Popillia japonica) - Milky spore dust applied to 250 acres in Ashe County, NORTH CAROLINA; treatment of additional 250 acres planned. (PPC, South. Reg., May Rpt.). Traps placed in Clay, Crawford, Du Page, Henry, Jefferson, Kane, Kankakee, McHenry, Richland, Wayne and White Counties, ILLINOIS. Traps set in Atchison, Doniphan, Johnson, Leavenworth and Wyandotte Counties, KANSAS. Traps set in number of railroad yards and airports in Martin, Watonwan and Brown Counties, MINNESOTA. (PPC, Cent. Reg., May Rpt.). Residual soil treatment of 3,000 acres at Otis Air Force Base, MASSACHUSETTS, completed. (PPC, East. Reg., May Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - Trapping begun in MARYLAND-DELAWARE area and along the PENNSYLVANIA Turnpike interchanges; both chemical and blacklight traps in use. (PPC, East. Reg., May Rpt.).

ASIATIC GARDEN BEETLE (Autoserica castanea) - DELAWARE - Adults common in blacklight trap in Sussex County. (Brubutis).

A SCARAB (Serica sp., probably fimbriata) - CALIFORNIA - Medium in Westminster area, Orange County; attracted to Japanese beetle lure. (Cal. Coop. Rpt.).

TILE-HORNED PRIONUS (Prionus imbricornis) - ALABAMA - Few adults caught at lights in Lee County. (McQueen).

A WEEVIL (Phyllobius oblongus) - PENNSYLVANIA - Light numbers collected from heads of wheat and barley in Mercer County. This is only second record for State. Det. by Negley. (Adams).

A TENEBRIONID BEETLE (Cynaesus angustus) - OHIO - Adults taken in blacklight trap at Hoytville, Wood County, northwest, for new county record. (Catterheinrich, Triplehorn).

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Populations extremely heavy this season. Large numbers have occurred in Rancho Cordova area, Sacramento County, with numerous complaints of residents being bitten. Heavy invasions of residential areas occurring in other localities where house and yard populations create considerable nuisance. (Cal. Coop. Rpt.).

A LONGHORN GRASSHOPPER (Rehnia spinosa) - TEXAS - Two specimens collected in pear tree in San Saba County. (Newton, Kidd).

EUROPEAN EARWIG (Forficula auricularia) - RHODE ISLAND - Present generally, but population appears relatively low to June 28. (Mathewson).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Collected for the first time in Colorado County, TEXAS, during May. Treatment completed in all known infestations in Brazoria and Montgomery Counties and treatment of highway rights-of-way in Jasper County; limited survey in Bexar County, negative. Surveys in 11 LOUISIANA parishes show extensions of infestations. Aerial treatment completed in Adams, Lee and Washington Counties, MISSISSIPPI, and in Morgan-Limestone County area, ALABAMA. Damage to young corn reported in Meriwether County, GEORGIA; Baldwin County reported infested for the first time. Treatment applied along pulpwood and logging roads in Charleston area, SOUTH CAROLINA; spot treatments made in city of Columbia. Treatments applied to the Camp LeJeune Marine Corps Base and city of Fayetteville, NORTH CAROLINA. Negative surveys made in 31 counties in TENNESSEE. (PPC, South. Reg., May Rpt.).

LIGHT TRAP COLLECTIONS

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta quinq. | Heliothis zea vires. |
|--------------------------------|-----------------|----------------|------------------|------------------|-------------------|----------------------------|-------------------------|
| ARKANSAS | | | | | | | |
| Hope 6/20-26 | | | | | | | 29 |
| Morrilton 6/20-26 | 13 | 6 | 46 | | | | 23 4 |
| Kelso 6/20-26 | | | 1 | | | | 2 |
| Fayetteville 6/20-26 | | | 3 | | | | 28 |
| FLORIDA | | | | | | | |
| Gainesville 6/24 | | | | 2 | | | 1 |
| ILLINOIS (County) | | | | | | | |
| Champaign 6/21-27 | 212 | 10 | 221 | | | 1 | |
| INDIANA (Counties) | | | | | | | |
| La Porte 6/19-23 | 11 | 2 | 9 | 9 | | | 1 |
| Lawrence 6/18-20 | 19 | 9 | 37 | 3 | | | 1 |
| Tippecanoe 6/20-27 | 231 | 14 | 39 | 1 | | | |
| Vanderburgh 6/19-26 | 13 | 1 | 15 | 2 | | 1 | 1 |
| Jasper 6/19-26 | 86 | 1 | 17 | 1 | 16 | | |
| KANSAS | | | | | | | |
| Garden City 6/19,21,24 | 29 | 12 | 13 | 23 | | | 7 |
| Hays 6/21,24 | 3 | 3 | 2 | 2 | | | |
| Manhattan 6/22-28 | 73 | 13 | 115 | 41 | 1 | | 3 |
| Wathena 6/19,21,23,25 | 12 | 2 | 28 | 8 | 2 | | 1 |
| MARYLAND | | | | | | | |
| Centreville 6/19-25 | 37 | 32 | 17 | | 7 | <u>4</u> | |
| MICHIGAN (Counties) | | | | | | | |
| Monroe 6/18-24 | 2 | 4 | | | | | |
| Washtenaw 6/18-24 | 1 | | | | | | |
| *McComb 6/18-24 | 4 | | 2 | | | | |
| *Livingston 6/18-24 | 6 | 2 | 3 | | | | |
| Kent 6/18-24 | 7 | | 9 | | | | |
| Wayne 6/18-24 | | 2 | | | | | |
| MISSISSIPPI | | | | | | | |
| *Stoneville 6/21-27 | 19 | 9 | 3 | 51 | | 17 | 55 3 |
| NEBRASKA | | | | | | | |
| Kearney 6/10-15 | 9 | 40 | 23 | | 222 | 1 | 2 33 |
| Lincoln 6/20-26 | 975 | 97 | 213 | 24 | 15 | | 4 |
| Ogallala 6/7-14 | 21 | 11 | 21 | | | | 1 1 |
| NEW JERSEY (Counties) | | | | | | | |
| Cumberland 6/5,9,12, 17, 24 | 39 | | | 1 | 12 | 1 1 | |
| Burlington 6/5,9,17, 20, 24 | 18 | | | 1 | 8 | | |
| NORTH DAKOTA | | | | | | | |
| Fargo 6/22-28 | 14 | | 2 | | 1 | | |
| Emrick 6/22-28 | 4 | 2 | | | | | |
| Trotters 6/22-28 | 1 | | 1 | | | | |

* Two traps - McComb, Livingston, Stoneville.

(continued on page 772).

Light Trap Collections (Continued)

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta | Heliothis zeae | quinq. vires. |
|-----------------------|-----------------|----------------|------------------|------------------|-------------------|---------------------|-------------------|------------------|
| OHIO | | | | | | | | |
| Wooster 6/21-27 | 35 | 25 | | | 20 | | | |
| Ripley 6/21-27 | 3 | | | | | | | |
| Marietta 6/21-27 | | 4 | | | | 2 | | |
| Hoytville 6/21-27 | 1 | | | | 5 | | | |
| Columbus 6/21-27 | | 1 | | | | | | |
| Toledo 6/21-27 | | 1 | | | | | | |
| SOUTH CAROLINA | | | | | | | | |
| Clemson 6/15-21 | 1 | 1 | 3 | 53 | | | 5 | |
| Clemson 6/22-28 | 2 | 4 | 5 | 106 | | | 3 | 1 |
| Charleston 6/24-30 | | 1 | | 27 | | 4 | 1 | 1 |
| SOUTH DAKOTA (County) | | | | | | | | |
| Brookings 6/27 | 13 | | 26 | | | | | |
| TEXAS | | | | | | | | |
| Waco 6/22-28 | 133 | 186 | 99 | 174 | | | 1,917 | 31 |
| *Brownsville 6/22-26 | | 64 | 180 | 200 | | | 117,713 | 54 |
| WISCONSIN | | | | | | | | |
| Janesville 6/18-24 | 122 | | | | 12 | | | |
| Platteville 6/18-24 | 41 | 3 | 5 | | 14 | | | |
| Mazomanie 6/19-24 | 14 | 11 | 4 | | 24 | | | |
| Middleton 6/20-25 | 6 | 6 | 1 | | 2 | | | |
| Madison 6/20-25 | 19 | 8 | 4 | | 1 | | | |
| De Forest 6/18-24 | 9 | 1 | 3 | | 4 | | | |
| Arlington 6/18-24 | 44 | | | | 15 | | | |
| Fox Lake 6/18-24 | 52 | | | | 14 | | | |
| Beaver Dam 6/18-24 | 23 | | | | | | | |
| Astico 6/18-24 | 8 | | | | 8 | | | |
| Wayne 6/18-24 | 11 | | | | | | | |
| Theresa 6/18-24 | 30 | | | | 16 | | | |
| Nenno 6/18-24 | 8 | | | | 5 | | | |
| Waldo 6/18-24 | 11 | 5 | | | 1 | | | |
| WYOMING | | | | | | | | |
| Centennial 6/6-10 | | | 1 | | | | | |

Additional Light Trap Collections

TEXAS - Trichoplusia ni - (Waco, 6/22-28) - 5,330; (*Brownsville, 6/22-26) - 30,582; Pectinophora gossypiella - (Waco, 6/22-28) - 4; (*Brownsville, 6/22-26) - 267.

* Six traps - Brownsville.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 690th meeting of the Hawaiian Entomological Society held on June 10, 1963.

An unidentified FLAT BUG (Aradidae) was discovered by Donald Oatley, a general entomology student, in May 1963. This bug was somewhat abundant, feeding on fungus under loose bark of trees above Fort Shafter, Oahu. Specimens have been sent to U. S. National Museum for identification. This is the first record of this family in Hawaii. (B. D. Perkins).

A general entomology student collected an adult of a predaceous CARABID (*Tefflus zanzibericus alluaudi*) in the Kaneohe area, Oahu, recently. This carabid was introduced in 1952, 1953, 1957 and 1959 to control a giant African snail (*Achatina fulica*). This is the third recovery and the first in 2 years from this area, indicating that this carabid may have become established. (D. E. Hardy).

Young shoots of a navel orange showing severe damage by feedings of SOUTHERN GREEN STINK BUG (*Nezara viridula* var. *smaragdula*) were exhibited. In general, the feeding of 2 pairs of adults produced complete collapsing of the shoots between 24 and 48 hours. There was no recovery. (C. J. Davis).

Weather of the week ending July 1 (continued from page 740)

The eastward movement of a front that extended from North Dakota to New Mexico set off moderate to heavy showers in North Dakota, Minnesota and Wisconsin. Light rains also fell over the Pacific Northwest. Hot sunny weather prevailed over the Southwest, with afternoon temperatures approaching or exceeding 100° daily. By midweek, the high pressure area had moved slowly southeastward to a position off the coast of South Carolina and Florida. A slowly moving cold front stretched from the middle Plains to New England. Hot humid air moved across the South Central States to New England, bringing 90° temperatures as far north as Burlington, Vermont. Thursday afternoon, the temperature shot to 97° at Philadelphia, Pennsylvania, and 95° or higher over the central Plains, the southern Rockies, and southwestern deserts. Albuquerque, New Mexico, registered 99°; Goodland, Kansas, and North Platte, Nebraska, 101°. A few heavy thundershowers occurred along the front which became almost stationary. Near the weekend, cooler weather moved inland across the Pacific Northwest. The Northeast also cooled. By daytime, heating sent the mercury to the upper 90's over the Plains and Prairies. Pierre, South Dakota, registered a sizzling 108° on Saturday afternoon, and Marquette, Michigan, registered 101° Sunday, equaling the previous June record-high temperature. As July began, the hot humid weather continued over most of the eastern half of the Nation, but more pleasant temperatures prevailed over the Rockies and Pacific Northwest. No rain, or only light showers, fell during the week over most of the Nation from the Pacific Ocean to the High Plains. Some exceptions were the extreme Northwest and a few isolated spots in the central Plains. Rainfall was also light in the Ohio River Valley and northward to Canada. Precipitation totals exceeded 4 inches at a few stations near the Gulf Coast between Corpus Christi and Houston, Texas, at Jacksonville and Orlando, Florida, and at a few stations in southeastern Georgia. Torrential rains, with amounts of 5 to 7 inches, hit the Athens, Georgia, area late Wednesday, causing flash flooding and extensive damage to roads and buildings. Temperatures averaged below normal over central and southern Texas and eastward to the Carolinas; also from the Pacific eastward to Montana, Wyoming, Utah and Arizona. They averaged above normal over New Mexico, Colorado, Nebraska, the Dakotas, and eastward to the Atlantic Ocean. Temperature departures ranged from -9° at Salem, Oregon, and Red Bluff, California, to +11° at Goodland, Kansas, International Falls, Minnesota, and Marquette, Michigan. (Summary supplied by U.S. Weather Bureau).

FIELD METHOD FOR SEPARATING THE CEREAL LEAF BEETLE, Oulema melanopa (L.),
FROM SIMILAR-APPEARING SPECIES OF LEMA IN THE UNITED STATES

Prepared by

Darol L. Kaufmann 1/

The cereal leaf beetle, Oulema melanopa (L.), is presently known to occur in several counties in southwestern Michigan, northern Indiana and northwestern Ohio. Its economic importance and the danger of its dispersal made apparent the need of a field method for distinguishing it from similar-appearing species in the genus Lema known to occur in the United States.

Oulema melanopa (L.):

Sternites of abdomen dark or metallic blue;
legs with some reddish areas.

U. S. Species of Lema superficially resembling
O. melanopa:

| | |
|-------------------------------|--|
| <u>L. longipennis</u> Linnell | Sternites and legs dark or metallic blue. |
| <u>L. collaris</u> Say | Sternites and legs dark or metallic blue. |
| <u>L. brunnicollis</u> Lac. | Sternites and legs dark or metallic blue. |
| <u>L. texana</u> Cr.* | Sternites reddish. |
| <u>L. cornuta</u> F.* | Sternites reddish. |
| <u>L. simulans</u> Schffr.* | Sternites reddish. |
| <u>L. sayi</u> Cr.* | Sternites reddish. |

*Leg color not needed to distinguish from
O. melanopa.

1/ Graduate Research Assistant, Department of Entomology, Kansas
State University, Manhattan, Kansas

July 12, 1963

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Operational

ENDOMIC INSECT

FOR

CONTROL DIVISION

NATIONAL RESEARCH SERVICE

U.S. DEPARTMENT OF AGRICULTURE



FEDERAL CENTER BUILDING, HYATTSVILLE, MARYLAND

New Home of Plant Pest Control Division

The Plant Pest Control Division is one of six Agricultural Research Service divisions located in Washington that will move to the new Federal Center Building located on the outskirts of Washington, D. C., at Hyattsville, Maryland. The Division will move the week beginning July 22.

Correspondence addressed to the Director, Plant Pest Control Division, should be as follows:

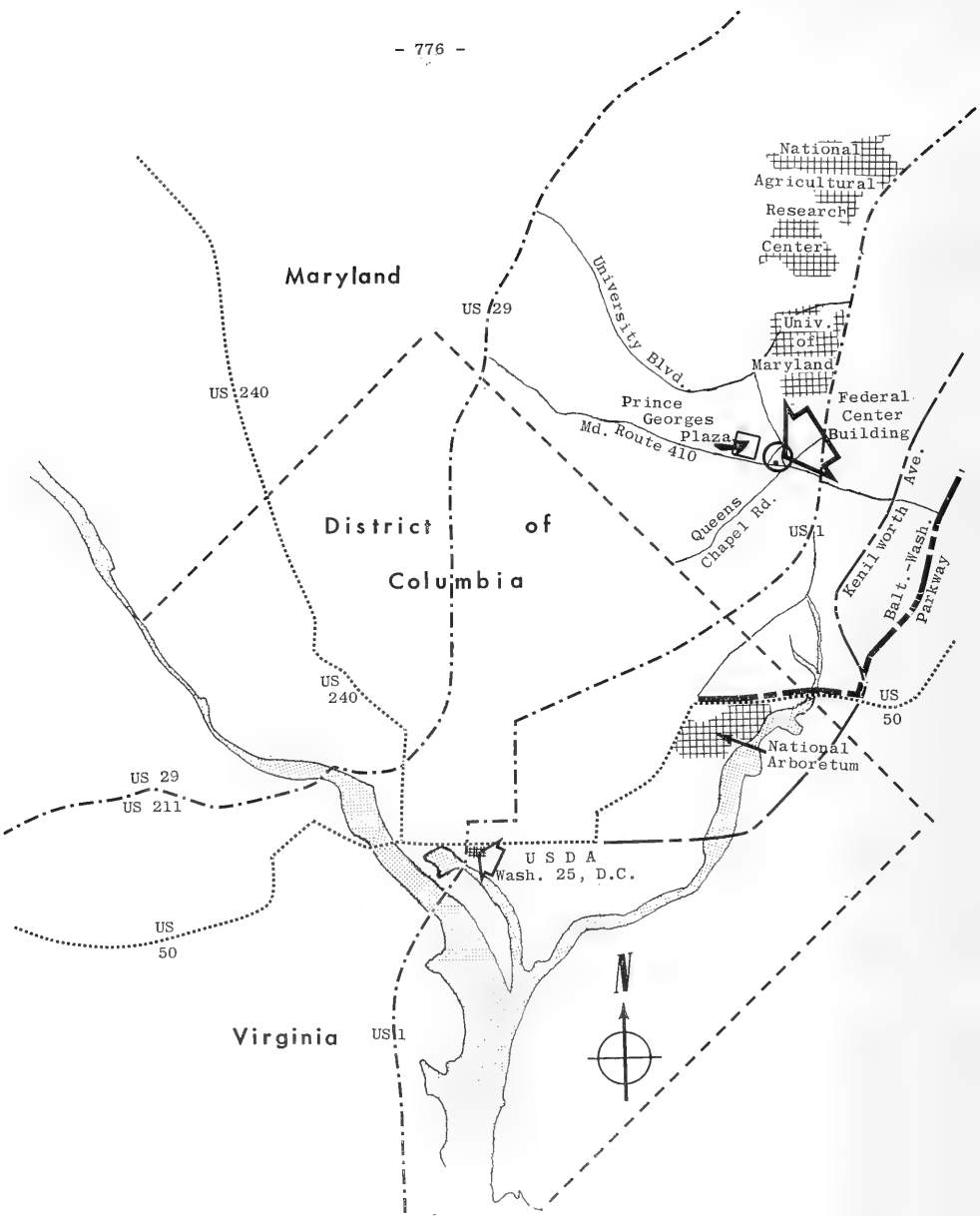
Mr. Emory D. Burgess, Director
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

Insect condition reports and other related correspondence for Survey and Detection Operations should be addressed as below beginning July 24.

Mr. Kelvin Dorward
Survey and Detection Operations
PPC, ARS, USDA
Federal Center Building
Hyattsville, Maryland 20781

It is our intention to have no interrupted service in publishing and mailing the Cooperative Economic Insect Report to cooperators and interested parties. However, certain delays may occur which will limit its content and mailing date for one or two issues.

The new telephone number for Mr. Emory D. Burgess, Director of Plant Pest Control Division, is DUDley 8-8460 (Area Code 301). The new telephone number for Survey and Detection Operations is DUDley 8-8349 (Area Code 301). For the convenience of those who may wish to visit persons relocated in the new Federal Center Building in Hyattsville, Maryland, a map has been reproduced on the following page which shows the building's location in relation to the District of Columbia, and major highways and connecting roads of the Metropolitan area.



COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPERS increasing in croplands, pastures, etc., in several Midwestern and North Central States; controls applied in some instances. Outbreak continues in Utah, and damage reported in areas of New Mexico, Nevada and California. (pp. 779-780). CORN ROOTWORMS damaging corn in parts of Indiana, Missouri, Iowa, Wisconsin, South Dakota, Nebraska and Kansas. (p. 780). CORN LEAF APHID appearing in Delaware, Wisconsin and Minnesota; damaging some barley in Utah. (p. 782). SPOTTED ALFALFA APHID continues light to heavy in south central Oklahoma. (p. 783). LYGUS BUGS required controls in Utah and Arizona, and heavy populations present in areas of Texas and Nevada. (p. 784).

EUROPEAN RED MITE building up rapidly on apples in several Northeastern States; serious problem in some areas. Also increasing in Michigan and Ohio. TWO-SPOTTED SPIDER MITE becoming a problem in Maine, New Jersey, Michigan and Missouri orchards. (p. 786). Emergence of APPLE MAGGOT adults increasing rather generally from New Jersey to Wisconsin, but temperatures and dry ground delaying emergence in Connecticut. (p. 787). Additional MEDITERRANEAN FRUIT FLY collections made June 25, 26 and 29 in Miami, Dade County, Florida. (p. 788). CHAFF SCALE and GLOVER SCALE more numerous in Florida citrus than any time in past 12 years, and YELLOW SCALE population higher than in any prior year. Infestations of CITRUS RUST MITE very high in some Florida districts in some groves. (pp. 788-789). BLUEBERRY THRIPS moderate to heavy, and damaging to blueberries in areas of Maine. (p. 789).

GREEN PEACH APHID increasing on sugar beets in sections of Washington, and increased rapidly on early potatoes in Colorado. LYGUS BUGS abundant on various crops in Washington, but causing noticeable damage to sugar beets. (p. 790).

BOLL WEEVIL continues relatively light in cotton, but increasing. (pp. 793-794). SPIDER MITES caused some serious damage to cotton in parts of California. BOLLWORMS major problem of cotton in most cotton-growing areas from Texas to South Carolina. (p. 794).

JACK-PINE BUDWORM damage light to heavy in Crawford, Oscoda and Iosca Counties, Michigan. (p. 796). GREEN-STRIPED MAPLEWORM defoliating maples in parts of Missouri and Kansas; LINDEN LOOPER caused considerable defoliation of most hardwoods in western Emmet County, Michigan, and prevalent in Vermont. (p. 797).

MOSQUITOES unusually severe throughout Utah and a nuisance in several other States including New Mexico, Wisconsin and Alabama. (p. 800). HORN FLY continues annoying to cattle in various States, as do several species of HORSE FLIES and DEER FLIES to both man and animals. (p. 802). STABLE FLY is major fly species causing most concern to dairymen in Wisconsin. (p. 802).

DETECTION

New county records are ALFALFA WEEVIL in Schoharie County, New York (p. 785), and LOCUST LEAF MINER in Pope, Franklin, Johnson and Will Counties, Illinois (p. 797).

(Continued on following page)

CORRECTIONS

See page 804.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 801).

Interceptions of Special Interest at U. S. Ports of Entry. (p. 807).

Survey Method for Grape Root Borer (Vitacea polistiformis polistiformis) as Used in Arkansas. (p. 808).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods in Arkansas in 1962. Cotton - p. 809; Rice - p. 810.

Reports in this issue are for week ending July 5, unless otherwise indicated.

WEATHER OF THE WEEK ENDING JULY 8

At the beginning of the week, a cold front extended from a Low centered north of Lake Superior southwestward to Colorado. A weak warm front extended eastward across northern New England. South of these fronts, afternoon temperatures were mostly in the 90's. They reached 95° or higher in a broad band from western Lower Michigan southwestward to Arizona and nearby portions of California. On Monday afternoon, the temperature shot to 97° at Philadelphia, Pennsylvania, and New York and Albany, New York, to 98° at Boston, Massachusetts, and to 101° at Lancaster, Pennsylvania, and New Brunswick, New Jersey. The weather was especially oppressive over the Southeast where the dew points were near or above 70°. The western end of the front moved northeastward becoming a warm front, and temperatures near or above 100° continued in the Midwest. Valentine, Nebraska, registered 101° on July 3. The eastern portion of the front continued southward and brought cooler, more comfortable temperatures to the North Central and Northeast. A few stations near the Great Lakes registered record-low temperatures on July 4. Towering cumuli were common over the Rockies. Sunny weather predominated in the Northwest and the Southwest, with temperatures in the Southwest going past the 100° mark each day. By Friday, both ends of the front had become stationary. The front then extended diagonally across the country from Montana to Georgia. A pleasant pattern prevailed in the Northeast -- mild afternoon temperatures and record or near-record low temperatures in the early morning. Numerous localities in New England saw temperatures no higher than the 70's from July 4 to 7, and minimum temperatures were mostly in the 40's and 50's. On the hot side of the front, early morning temperatures were mostly in the 70's and afternoon temperatures were in the 90's or higher. Near the end of the week, another mass of cool, dry air was pushing across the Canadian Border from Minnesota to New England. It kept the humidity low and the temperatures at comfortable levels. By Tuesday morning, July 9, the front had reached the Gulf States and record-low temperatures were being registered at some stations in the Northeast. Near-freezing temperatures occurred at a few locations in the Appalachians by sunrise.

Many stations throughout the Nation received no rain or only light showers. Large areas in California, Nevada, Utah, Colorado and Oklahoma received no rain. Rainfall exceeded 1 inch over a few scattered areas, mostly in the eastern half of the country. Some of the heavier weekly totals include: Springfield, Illinois, 4.12 inches; Wilmington, North Carolina, 4.20 inches; Brookings, South Dakota, 4.48 inches; and Britt, Iowa, 6.10 inches.

(Continued on page 804)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - ILLINOIS - Melanoplus spp. varied 0-60 (averaged 12) per 100 feet of row in soybeans in west-southwest district, 0-8 (averaged 2.4) per square yard in grassy roadsides and fencerows in east-southeast and southeast districts and 40-1,400 (averaged 615) per 100 sweeps in clover and alfalfa in west-southwest and southwest districts. Populations heavy enough to require treatment in pasture locally near Arenzville, Cass County. (Ill. Ins. Rpt.). MISSOURI - Melanoplus spp. light to moderate throughout some pastures and alfalfa in west central area; counts 4-15 per square yard in field and 8-35 in margins. Development ranged from first instar to adult. (Munson, Thomas, Wood). IOWA - Unspecified species about half grown in most of southern half of State. Populations ranged from 2 to 30-40 per square yard. (Iowa Ins. Inf., July 1). WISCONSIN - Grasshoppers, primarily Melanoplus femurrubrum, relatively heavy in many fields of second-growth alfalfa in parts of Dane, Green, Rock and Walworth Counties. Counts in some fields range as high as 60 per square yard and 30 per sweep. Few fifth instars found in Green County. M. differentialis nymphs common in area of Green County and make up approximately 50 percent of total grasshopper population. M. bivittatus adults severely damaged alfalfa field and completely ruined an adjacent oatfield in Adams County; some treatments applied for this species in Adams and Waushara Counties. M. femurrubrum nymphs increasing rapidly in Marquette County alfalfa and, to a lesser extent, in Waushara County; counts range up to 45 per square yard. Few nymphs of this species present in more northerly counties of Waupaca, Shawano, Oconto, Marinette, Burnett and Washburn. (Wis. Ins. Sur.). MINNESOTA - Scattered and localized grasshopper infestations found in Anoka and Sherburne Counties; counts 5-80 per square yard. M. femurrubrum and M. differentialis eggs still hatching in area. These two species ranged from first to third instar, with majority in second instar. Margin rows of corn and soybeans show light feeding damage in few fields. (Minn. Ins. Rpt.).

NORTH DAKOTA - Grasshopper survey conducted in McLean, McIntosh, Logan and La Moure Counties showed marginal infestations of 12-15 per square yard in McLean County and 5-6 per square yard in Logan, McIntosh and La Moure Counties. All field infestations 1 or less per square yard. Dominant species in McLean County M. packardii, M. bivittatus, M. sanguinipes and Camnula pellucida. In remainder of these counties, M. bivittatus and M. sanguinipes species involved. Majority of grasshoppers in third and fourth instars, but occasional adults of M. bivittatus observed. Habitats surveyed were small grains. (Wilson). Survey in Stark, Slope, Bowman, Adams and Hettinger Counties showed marginal infestations of less than 1 to 30 per square yard. Dominant species M. sanguinipes and M. bivittatus; most in second and third instars. (Olson). Survey in Richland, Ransom and Sargent Counties showed field counts of less than 1 per square yard while marginal counts ranged from less than 1 to 3 per square yard. Nymphs ranged from first through fifth stages. Dominant species M. bivittatus, M. sanguinipes and M. femurrubrum. (Brandvik). SOUTH DAKOTA - Some heavy grasshopper infestations, showing up in croplands and rangeland in parts of central and western areas. Heavy infestation exists in Wewela area in Tripp County near Nebraska line; migrating out of mowed alfalfa and soil bank land to new alfalfa and oats. Large numbers hatched out in alfalfa following first cutting in White River bottoms in northern Tripp County. Ranchers treating in this area. (Zimmerman, Burge). OKLAHOMA - Nymphal surveys continued in 4 south central and 4 western counties. Additional surveys in 3 south central counties of Carter, Garvin and Murray show range populations of 5-10 per square yard, with counts around ponds and weedy areas up to 20 per square yard. Dominant species in this area, in addition to those reported previous week, are M. packardii and M. occidentalis. Ten rangeland stops in Jefferson County showed 1-4 per square yard. Populations in 4 southwest counties considered light to threatening in rangeland areas surveyed. Highest populations 10 per square yard found on approximately 20,000 acres. Dominant species in this section Ageneotettix deorum, Phlibostroma quadrimaculatum, Aulocara elliotti and Melanoplus bivittatus. Twelve rangeland counts in Kiowa and Greer Counties ranged 1-12 per square yard. Heavy populations of small nymphs reported in

pastures in eastern half of Marshall County. (Okla. Coop. Sur.). UTAH - Besides large outbreak in Gunnison, Redmond, Clarion, Mayfield, Salina and Fayette areas of Sanpete County, outbreak extends well into northern Sevier County where situation is serious over approximately 30,000 acres of range and crop lands. (Knowlton, July 5). Outbreak around Monticello (north, east and southeast) covers at least 5,000 acres, being less severe beyond this area. Approximately 10,000 acres of rangeland seriously infested at Maverick Point, more than 10,000 acres each at Dry Mesa and Deer Flats, all in San Juan County. In Grand County, more than 5,000 acres of crop and range lands infested on Wilson Mesa, with less serious infestations at Moab. In Juab County, about 100,000 acres infested in general area of Nephi-south Levan, much of the infestation coming from retired acreage. About 5,000 acres spottedly severe in Kanarrville area, 6,000 acres around Summit and the untreated portions of 10,000 acres in Parowan, and 10,000 acres in Paragonah areas of Iron County. New Harmony area of Washington County has an outbreak on at least 5,000 acres. Grasshopper outbreaks serious in east Millard County, including 4,000 acres at McCormick, plus bad situations about Kanosh, Scipio, Scipio Lake and elsewhere. Local areas developing in Salt Lake, Davis and Cache Counties. (Thornley, Knowlton, July 2).

NEW MEXICO - Grasshoppers remain light throughout State, with exception of small area around Cuba and Chama in Rio Arriba County. Populations range from 15 to over 100 per square yard. Farmers and ranchers in area organized voluntary control program and treated 2 blocks of 500 acres each. Results good in areas checked. (N. M. Coop. Rpt.). NEVADA - Heavy infestations of predominantly Oedaleonotus enigma on rangeland south of Denio, Humboldt County. O. enigma and some Camnula pellucida and M. sanguinipes heavily infesting 3,000-4,000 acres of crested wheatgrass seedings in Horse Creek area of Kings River Valley, Humboldt County. Approximately 25,000 acres of rangeland and crested wheatgrass seedings infested in Orovada area, Humboldt County, by Aulocara elliotti, C. pellucida, M. sanguinipes and O. enigma; counts per square yard higher than reported in CEIR 13(26):701 since more hatching has occurred. Currently, grasshoppers moving into cultivated areas. Heavy infestations of a complex of range grasshoppers also reported in Grass Valley area in southern Humboldt and northern Pershing Counties. Infestations, mostly O. enigma and M. sanguinipes, present in small valleys north of Reno, Washoe County, with movements into cultivated crops and yards as range hosts dry up. (Coop. Rpt.). CALIFORNIA - Eggs of C. pellucida hatching in Tulalake area, Modoc County. Some 350-400 acres of wildlife refuge will be treated for grasshoppers about July 9. In Coahilla Indian Reservation, Riverside County, grasshoppers 15-20 per square yard on 6,000 acres of pastureland. Test plots put on in this area, but failure to follow up with complete treatment indicates damage will be severe. (Thompson).

CORN ROOTWORMS (Diabrotica spp.) - INDIANA - Larvae causing damage to corn in localized, untreated fields in Porter County, northwest. (Matthew). MISSOURI - Reports of heavy larval damage to corn in northwest continues. Adults of D. virgifera observed in early planted fields tasseling in area; larvae and pupae also observed. (Munson, Thomas, Wood). IOWA - D. virgifera beginning to assume major importance in western one-third of State; reported or sent in for determination from Fremont, Page, Mills, Montgomery, Pottawattamie, Shelby, Woodbury, Crawford, Cherokee, Plymouth, Sioux and O'Brien Counties. D. longicornis slightly behind D. virgifera in development. (Iowa Ins. Inf., July 1). First ARS records for Woodbury and Sioux Counties. WISCONSIN - Larvae of D. longicornis becoming full grown in Arlington area, Columbia County; lodging not evident. (Wis. Ins. Sur.). SOUTH DAKOTA - Continuing to cause damage in southeastern region counties, with heaviest infestations in Bon Homme, Hutchinson and Yankton. Larvae ranged 3-17 per plant in fields observed. One field in Yankton County showed "goosenecking" where average populations very high compared with other fields surveyed. Damaging populations in fields treated with certain chlorinated hydrocarbons at planting time. (Kantack, Hintz). NEBRASKA - Larval damage to corn roots very heavy in some north and northeast area fields. (Bergman). KANSAS - Adults of D. virgifera

emerging rapidly in Republic County, north central. With continued hot weather, emergence will be complete in few days. Counts ranged from zero to 25-30 larvae and pupae plus 0-18 or more adults per plant. Damage ranges from none to very severe. (Burkhardt, Gates, Peters).

CEREAL LEAF BEETLE (*Oulema melanopa*) - MICHIGAN - Approximately 75 percent of spring-brood larvae, not destroyed by treatment program, emerged as new adults. Remaining 25 percent practically all pupae. Very few larvae, eggs and overwintered adults left. New adults migrating short distances to succulent grasses and corn; no mating or egg laying observed. After mid-July, adults expected to be relatively inactive at base of corn leaves and in other hiding places. No more severe feeding injury expected until larvae of 1964 spring brood appear. Plans for treatment program against new adults to reduce populations nearly complete. (Castro, Ring, Hanna). OHIO - Florence, Superior and Madison Townships in Williams County, and Hicksville Township, Defiance County, new regulated areas in State. (Porter).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Light to moderate on field and sweet corn in Howard and Worcester Counties. (U. Md., Ent. Dept.).

A BILLBUG (*Sphenophorus* sp.) - MICHIGAN - Larvae infested up to 30 percent of wheat stems locally in Berrien County. (Guyer).

JAPANESE BEETLE (*Popillia japonica*) - DELAWARE - Noticeably increased; fairly common on corn and soybeans in areas of New Castle and Kent Counties. (Burbutis, Evans). MARYLAND - Adults causing conspicuous foliage injury in several Queen Annes and Talbot County soybean fields. (U. Md., Ent. Dept.).

WIREWORMS - MARYLAND - Undetermined species caused severe injury to field of corn in Allegany County. (U. Md., Ent. Dept.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Moths present on sweet corn in Hudson Valley, but numbers declining. Larvae ranged up to fourth stage in tassels. In fields treated once or twice, plants with infestation signs in whorl or tassel ranged 3-35 percent. Stem invasion started in occasional plants by June 28. (N. Y. Wkly. Rpt., July 1). MARYLAND - Whorl infestations ranged 0-24 percent (averaged 5) in more advanced field and sweet corn in Frederick, Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). MICHIGAN - Larval feeding heavy in Wayne County. (Kidd). INDIANA - Larvae feeding in midribs of corn plants in Porter County, northwest; no stalk entry observed. No egg masses found. (Matthew). IOWA - Fifty-inch corn in southeast and east 44-100 percent infested, with 1-6 borers per plant. In Henry County, larvae 11 percent first stage, 31 percent second stage, 50 percent third stage, 4 percent fourth stage and 4 percent fifth stage. Some heavily infested fields in Hamilton County treated. (Iowa Ins. Inf., July 1). WISCONSIN - Moths continue to be trapped in scattered areas, particularly further north in State. Heaviest flight in years occurred in Dodge County. Leaf-feeding counts little changed in southern counties. Larvae mostly second and third stages, although fourth stage found tunneling into stalk of corn in Rock County field. (Wis. Ins. Sur.). SOUTH DAKOTA - Egg surveys in northeast and north central areas as follows: Northeast - 4 masses per 25 plants, corn height (leaves extended) 30 inches; north central - 5 masses per 25 plants, corn height 36 inches. Egg masses in black-head stage averaged 1 per 25 plants in northeast; none found in north central. (Hintz). NEBRASKA - Infestations 20-75 percent in north and northeast. Second to fourth instars feeding in whorls of plants. (Bergman).

CORN EARWORM (*Heliothis zea*) - MARYLAND - Light in whorls of more advanced field and sweet corn in all sections. (U. Md., Ent. Dept.). OHIO - Adults emerging in southeast; 6 adults collected in blacklight trap at Marietta, Washington County. (Rings). ARKANSAS - Isolated infestations reported in soybeans; 80 percent of larvae in one Conway County field parasitized by tachinid flies. (Ark. Ins. Sur.). OKLAHOMA - Medium infestations on corn in Blaine County (central) and only light in corn in east central area. Moth flights of *H. zea* and *H. virescens* down considerably from previous weeks at light traps in Stillwater area. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Light in small sorghum checked in Payne County area. (Okla. Coop. Sur.).

STALK BORER (Papaipema nebris) - RHODE ISLAND - Damaging sweet corn in Richmond, Washington County, and Coventry, Kent County. (Mathewson). OHIO - Infesting corn locally in Medina County. (Schurr). INDIANA - Reports and specimens still being received from various areas of State. (Matthew). MINNESOTA - Light in marginal rows of corn in Anoka and Sherburne Counties. (Minn. Ins. Rpt.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - OHIO - Very light infestations in field corn north of Lodi, Medina County, northeast area; approximately 50 percent of plants infested. (Schurr). UTAH - Causing some damage to alfalfa and rangeland in Kanosh area of Millard County. (Knowlton).

FALL ARMYWORM (Laphygma frugiperda) - COLORADO - Trace numbers on few corn plants in Bent, Otero and Prowers Counties. (Schweissing).

ARMYWORM (Pseudaletia unipuncta) - WISCONSIN - Outbreak not expected. (Wis. Ins. Sur.). MINNESOTA - Light in marginal rows of corn in Anoka and Sherburne Counties. (Minn. Ins. Rpt.).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - Adults and nymphs high in central and east central districts; averaged 2,500 per 100 sweeps in small grains. Some grain fields maturing rapidly due to warm weather. Counts in these fields dropped sharply. (Minn. Ins. Rpt.).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Survey of 18 rice fields in Lonoke County (east central) showed average of 52 adults and one nymph per 100 sweeps. Sweep method of survey being used prior to rice heading. After rice heads, binoculars will be used. (Ark. Ins. Sur.). See CEIR 13(1):7 for Survey Method on rice stink bug.

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Populations continue heavy in many places statewide. Grain fields in Stockton area, San Joaquin County, showing heavy nymphal populations; also in uncultivated areas along ditches in Visalia, Tulare County. (Cal. Coop. Rpt.).

CHINCH BUG (Blissus leucopterus) - OHIO - Nymphs and adults migrating from ryefield and infesting first few rows of corn near South Charleston, Clark County, west central area. (Foster, Blair). WISCONSIN - Infesting a cornfield in Trempealeau County. (Wis. Ins. Sur.). OKLAHOMA - Damaging small sorghum plants in many areas of State; counts averaged 50 per foot of row on 10-inch sorghum plants adjacent to barley in Muskogee County. (Okla. Coop. Sur.).

CHINCH BUGS - CONNECTICUT - Activity in lawns reported in southern area; controls may be necessary. (Savos). SOUTH CAROLINA - Caused serious damage to centipede and St. Augustine grass lawns in Greenwood County. (Nettles et al., June 25).

CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Damaging some barley near Garland, Box Elder County, and several fields near Gunnison, Sevier County. (Knowlton). Damaging several thousand acres of late barley in several areas of Sanpete County. (Knowlton, Funk). NEW MEXICO - Light on barley in La Plata area, San Juan County. (N. M. Coop. Rpt.). COLORADO - Trace numbers on corn in Adams, Larimer and Weld Counties. (Jenkins). KANSAS - Reported on sorghum in Harvey County, south central, and Woodson County, southeast. (Gates). MINNESOTA - Appearing on corn; colonies small and found in whorl. (Minn. Ins. Rpt.). WISCONSIN - First colonies noted forming in tassels of sweet corn in Walworth County. (Wis. Ins. Sur.). DELAWARE - First small colonies of season noted on corn in Kent County. (Burbutis, Evans). ALABAMA - Heavy, isolated infestation locally on field corn in De Kalb County; lady beetle and syrphid fly larvae active. (McQueen).

GREENBUG (*Schizaphis graminum*) - MINNESOTA - Populations in small grains declined in high count fields in Sherburne County. (Minn. Ins. Rpt.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - WASHINGTON - Counts 30-40 per head of wheat in Othello area, Adams County. Some fields treated. Population variable with field. (Landis).

GRAIN APHIDS - SOUTH DAKOTA - Counts per 40 linear feet of row as follows: Brookings County, July 1, in oats, 7 *Schizaphis graminum*, 5 *Macrosiphum avenae*; Southeast Experiment Station Farm, Centerville, Turner County, June 26, in oats, 15 *S. graminum*, 20 *M. avenae*; Northcentral Experiment Station Farm, Eureka, McPherson County, June 27, in oats, 25 *S. graminum*, 11 *M. avenae*; Central Experiment Station Farm, Highmore, Hyde County, June 27, in oats, 46 *S. graminum*, 45 *M. avenae*; Waubay National Wildlife Refuge, Day County, June 28, in barley, 14 *S. graminum*, 24 *M. avenae*, 20 *Rhopalosiphum maidis*. (Kieckhefer).

WHEAT STEM MAGGOT (*Meromyza americana*) - NORTH DAKOTA - Observed infesting stems of spring wheat in Richland and McIntosh Counties; up to 6 percent infested in Richland County and 1 percent in McIntosh County. (Brandvik, Wilson).

WHEAT MIDGE (*Sitodiplosis mosellana*) - OHIO - Infesting wheat locally in Hardin and Putnam Counties, northwest. (Klingler, Gerber, Blair).

HESSIAN FLY (*Phytophaga destructor*) - OHIO - "Flaxseeds" observed in wheat stems at Ottawa, Putnam County. (Berber, Blair). IOWA - Some winter wheat in Monona County found heavily infested; 80-90 percent of straws infested by 1-6 "flaxseeds" per straw. (Iowa Ins. Inf., July 1).

THRIPS (undetermined) - SOUTH CAROLINA - Damage to peanuts moderate to heavy in Allendale, Barnwell and Lee Counties. (Smith, June 25). MARYLAND - High populations continue present on alfalfa, corn and soybeans in all sections. (U. Md., Ent. Dept.). ILLINOIS - Common on soybeans in west-southwest and east-southeast districts. Light silvering observed on many plants in west-southwest district. (Ill. Ins. Rpt.). COLORADO - Damage to corn and spring-planted small grains appearing in Weld and Larimer Counties. (Titensor, Jenkins).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Present on corn in Adams, Bent, Crowley, Larimer, Otero, Pueblo and Weld Counties; populations on lower 3-4 leaves and not economic at present in most cases. (Titensor, Hantsbarger, Schweissing, Jenkins). WASHINGTON - All stages attacking red clover grown for seed in Connell area, Franklin County; apparent leaf damage. (Landis).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - MISSOURI - Light infestations observed in few scattered fields of alfalfa in west central and southwest areas; 0-17 per sweep. (Munson, Thomas, Wood). NEBRASKA - Averaged 1 per 20 sweeps in Cedar County. (Bergman). OKLAHOMA - Infestations continue to vary from light to heavy, 20-1,500 per sweep, in alfalfa in south central area. (Okla. Coop. Sur.). TEXAS - Moderate, widespread infestations present on alfalfa in Gaines County. Stage of growth ranged from early to full bloom and some fields recently cut. Infestations in Terry County, although widespread, somewhat lighter. (Tex. Coop. Rpt.; Whitaker). COLORADO - Found for first time this year south of Swink in Otero County; 1 per 100 sweeps. (Schweissing). ARIZONA - Apparently increasing on Buckton alfalfa in Yuma County; parasites on decrease. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - ILLINOIS - Varied 100-300 per 100 sweeps in clover and alfalfa in west-southwest district and 200-3,100 (average 1,700) in southwest district. (Ill. Ins. Rpt.). WISCONSIN - Populations dropped to low level in alfalfa; highest counts 70 per sweep in field of 8-inch alfalfa in Waupaca County. Other counts 1-30 per sweep. (Wis. Ins. Sur.). MINNESOTA - Generally high on alfalfa in central and east central districts; 30-5,000

per 100 sweeps. (Minn. Ins. Rpt.). SOUTH DAKOTA - Averaged 950 and 630 per 10 sweeps in Codrington and Clark Counties, respectively. (Hintz). WYOMING - Averaged 120 per 100 sweeps in Goshen County alfalfa. (Marks). COLORADO - Continues low on alfalfa in eastern area. Few fields with moderate populations, 500 per 100 sweeps, in Arkansas Valley. Parasites and predators kept aphid populations at low levels. (Schweissing, Jenkins). UTAH - Extremely heavy in 100-acre field at Kelton, Box Elder County. Generally heavy in alfalfa from Snowville through Park Valley area of Box Elder County. (Knowlton). ARIZONA - Increasing in Yuma and Maricopa County alfalfa. (Ariz. Coop. Sur.). NEVADA - Increasing on seed alfalfa in Haulapi Valley, Washoe County. (Lauderdale) Averaged 30 per sweep in alfalfa hay fields in Reno-Sparks area, Washoe County. (Cooney). Varied 10-400 per sweep in Fallon area, Churchill County. (Busteed, York). WASHINGTON - Averaging 300 per 10 sweeps on second cutting of alfalfa. Less abundant on red and ladino clover grown for seed, Connell, Franklin County; Othello, Adams County. (Landis).

LYGUS BUGS (*Lygus* spp.) - TEXAS - Widespread, light infestations of 3-4 per sweep present on alfalfa in Terry County. Counts as high as 25 per sweep in some Gaines County fields. (Tex. Coop. Rpt.; Whitaker). WYOMING - Adults averaged 40 and nymphs 46 per 100 sweeps in Goshen County alfalfa. (Marks). COLORADO - Decreased on alfalfa in Arkansas Valley; varied 20-100 per 100 sweeps. In northern area, increased and migrating from alfalfa and other crops. (Schweissing, Jenkins). UTAH - Controls necessary in northern and central area alfalfa seed fields. (Knowlton). NEW MEXICO - Counts remain light in Dona Ana County alfalfa. (N.M. Coop. Rpt.). ARIZONA - Adults being controlled in alfalfa seed fields in Yuma County; counts in alfalfa forage fields in Maricopa County averaged 21 per 100 sweeps. (Ariz. Coop. Sur.). NEVADA - Heavy infestations in alfalfa seed fields in Haulapi Valley, Washoe County. (Lauderdale). Averaged 20-30 per sweep in Reno-Sparks area, Washoe County. (Cooney). WASHINGTON - Averaged 10 per 10 sweeps in alfalfa and clover. (Landis).

TARNISHED PLANT BUG (*Lygus lineolaris*) - ILLINOIS - Adults varied 0-400 (averaged 170) per 100 sweeps in clover and alfalfa in west-southwest district and 20-60 (averaged 40) in southwest. (Ill. Ins. Rpt.). WISCONSIN - Common in central part of State. (Wis. Ins. Sur.). NEBRASKA - Nymphs averaged 8 per 10 sweeps in Cedar, Madison and Pierce Counties. (Bergman).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - ILLINOIS - Adults varied 0-100 (averaged 67) per 100 sweeps in clover and alfalfa in west-southwest district and 20-100 (averaged 53) in southwest district. (Ill. Ins. Rpt.). WISCONSIN - Continues common in alfalfa in southern area. (Wis. Ins. Sur.). WYOMING - Adults averaged 24 per 100 sweeps in Goshen County alfalfa. (Marks).

RAPID PLANT BUG (*Adelphocoris rapidus*) - ILLINOIS - Adults varied 0-100 (averaged 43) per 100 sweeps in clover and alfalfa in west-southwest district and 10-50 (averaged 23) in southwest district. (Ill. Ins. Rpt.). WISCONSIN - Common in central part of State. (Wis. Ins. Sur.).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - OHIO - Light in many northwestern counties; heaviest counts 60-95 adults per 50 sweeps in Putnam County. Fields surveyed primarily second-cutting alfalfa. (Lyon). WISCONSIN - Adults 1-3 per sweep in Columbia, Dodge, Green Lake, Fond du Lac, Winnebago, Outagamie, Waupaca and Portage Counties; generally 3-12 per sweep in Dane, Rock, Green, Jefferson and Walworth Counties. (Wis. Ins. Sur.). MARYLAND - Adults abundant, up to 5 per sweep, in several alfalfa and red clover fields in Frederick and Howard Counties. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (*Empoasca fabae*) - NEW JERSEY - Averaged 13 per 25 sweeps in 10 alfalfa fields surveyed in Monmouth, Burlington and Mercer Counties; highest count 31 per 25 sweeps, lowest count 0 per 25 sweeps. (Ins.-Dis. Newsltr., July 2). DELAWARE - Continues to increase on several crops throughout State,

including alfalfa, soybeans and snap beans. (Burbutis, Evans). MARYLAND - Ranged 1-10 per sweep on alfalfa in Frederick and Howard Counties. (U. Md., Ent. Dept.). OHIO - Moderate damage observed on alfalfa in Meigs County, southeast. (Treece). ILLINOIS - Adults varied 10-60 and nymphs 20-30 per 100 sweeps in soybeans in east-southeast district. In clover and alfalfa, adults varied 50-400 (averaged 275) and nymphs 0-4,500 (averaged 2,450) per 100 sweeps in west-southwest district; and, in southwest district, corresponding figures were adults 100-800 (averaged 377) and nymphs 0-400 (averaged 233). (Ill. Ins. Rpt.). WISCONSIN - Counts remain relatively low in most alfalfa. (Wis. Ins. Sur.).

ALFALFA WEEVIL (Hypera postica) - VERMONT - Averaged 5 per sweep on alfalfa in Arlington, Bennington County. No field yet found where injury would cause economic loss. (MacCollom, July 1). NEW YORK - Larvae found in 4 townships in Schoharie Valley, Schoharie County. (N. Y. Wkly. Rpt., July 1). First ARS record for county. MARYLAND - Larvae generally declining on alfalfa in central areas; highest population 3 per sweep in Frederick County field. (U. Md., Ent. Dept.). OHIO - Adults and larvae readily collected in second-cutting alfalfa in Belmont County, east central area. Adults extremely scarce in second-cutting alfalfa in Meigs, Gallia and Lawrence Counties, southeast. No larvae present. (Treece). WYOMING - Larvae averaged 45 per 100 sweeps in Goshen County alfalfa; about 95 percent of fields cut. (Marks). NEW MEXICO - Counts remain light in La Plata Valley alfalfa (San Juan County); 1 per 25 sweeps. (N. M. Coop. Rpt.). NEVADA - Larvae averaged 5-10 per sweep in Reno-Sparks area, Washoe County; pupation mostly completed. (Cooney, Gardella).

BLISTER BEETLES - MISSOURI - Spotty infestations of Epicauta spp. observed in soybeans and alfalfa in west central area; counts 2-31 adults per sweep in infested spots. (Munson, Thomas, Wood). KANSAS - Undetermined species reported abundant on alfalfa grown for seed in Mitchell County, north central. (Gates). OKLAHOMA - Several species heavy in localized areas in alfalfa in north central section and on soybeans in east central areas. (Okla. Coop. Sur.). UTAH - Numerous on alfalfa at Wellsville, Cache County. (Knowlton).

LEAF BEETLES (Colaspis spp.) - DELAWARE - Present on soybeans in western Kent County. (Burbutis, Evans). OHIO - Moderate to heavy damage observed in 5-acre cornfield near Pemberville, Wood County. Several plants 50-75 percent skeletonized; 6-7 adults per plant feeding on leaves and whorl. (Triplehorn, Lyon).

PALE-STRIPED FLEA BEETLE (Systema blanda) - WISCONSIN - Adults fairly common in certain alfalfa fields in Walworth and Rock Counties. (Wis. Ins. Sur.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Adults range 8-10 per 25 sweeps in Dona Ana County alfalfa. (N. M. Coop. Rpt.).

GARDEN WEBWORM (Loxostege sticticalis) - ILLINOIS - Larvae very light in alfalfa and soybeans in southern area. (Ill. Ins. Rpt.). MISSOURI - Observed feeding on alfalfa, soybeans, small corn and grain sorghum in central, north central and west central areas. Moths numerous in west central area in river bottom fields where larvae completely destroyed first plantings of grain sorghum. (Munson, Thomas, Wood). ARKANSAS - Spot treatments in soybeans reported from Pope County. (Ark. Ins. Sur.). OKLAHOMA - Light to medium infestations apparently common on alfalfa throughout southwest and west central areas, with scattered reports of light infestations noted in north central area. (Okla. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - DELAWARE - Present on soybeans locally in Kent County. (Burbutis). MARYLAND - Light on alfalfa in Frederick and Howard Counties. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Low in soybean fields in Lonoke (east central), Conway (central) and Pope (west central) Counties. (Ark. Ins. Sur.). MARYLAND - Light to moderate on alfalfa and red clover in Frederick and Howard Counties. (U. Md., Ent. Dept.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Light infestations appear to be common in peanuts in Caddo and Bryan Counties. (Okla. Coop. Sur.).

SOD WEBWORMS (Crambus spp.) - OKLAHOMA - Light to medium infestations noted in Bermuda grass in Washita County, southwest area. (Okla. Coop. Sur.).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Very high numbers on alfalfa in eastern Weld County. (Titensor).

SAY STINK BUG (Chlorochroa sayi) - NEVADA - Light infestations on Indian ricegrass in Churchill, Lyon and Mineral Counties. (Lauderdale).

A LEAF BEETLE - NEW MEXICO - Heavy on rabbitbrush in Rio Arriba County; severe defoliation noted. (N. M. Coop. Rpt.).

A MIRID BUG (Rhinacloa forticornis) - CALIFORNIA - Adults medium in flax plantings in Westmorland, Imperial County. (Cal. Coop. Rpt.).

FRUIT INSECTS

EUROPEAN RED MITE (Panonychus ulmi) - MAINE - Populations quite heavy and building up rapidly. Counts as high as 40-50 per leaf in untreated check trees in Monmouth area, Kennebec County. Third-generation adults laying eggs June 27. If hot, dry weather continues, 6-7 generations can be expected this season, as well as causing a continuing control problem to end of season. (Boulanger, June 28). VERMONT - Serious in many locations due to excessively warm, dry weather. (MacCollom, July 1). NEW YORK - Becoming problem in some Clinton County orchards. Not numerous in Wayne County, but eggs found on leaves. (N. Y. Wkly. Rpt., July 1). CONNECTICUT - Continues at low level. (Savos). NEW JERSEY - Populations increased rapidly on apples during past 2 weeks. Young apples interplanted with peaches severely bronzed in orchard at Bridgeton, Cumberland County; only an occasional mite on peaches except where apple and peach limbs touched. Where populations high, 2 miticide applications at 7-10 day intervals may be necessary to obtain adequate cleanup. (Ins.-Dis. Newsltr., July 2). OHIO - Beginning increase in apple orchards at Wooster, Wayne County; ranged 5-9 per leaf in contrast to 1.5-2 per leaf week of June 19 in check plots. Pre-bloom oil control plots have 1-2 mites per leaf; controls starting to fall off. (Forsythe). MICHIGAN - Buildup rather general on apples in southwestern area. (Carpenter, Tatter). IOWA - Eggs, nymphs and adults numbered 500 per leaf in improperly treated orchard. (Iowa Ins. Inf., July 1).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MAINE - Infestations much above normal; populations well established in early mowed orchards and rather high in trees. Conditions variable where no mowing done, but can be expected to parallel above situations when orchard cover is cut. (Boulanger, June 28). CONNECTICUT - Remains at low level; slight increase noted on Red Delicious apples in some orchards. (Savos). NEW JERSEY - Moving into apple trees; problem will increase as ground cover dies. (Ins.-Dis. Newsltr., July 2). MICHIGAN - Building up on apples; present on some peaches and plums in southwestern area. (Carpenter, Tatter). IOWA - Averaged one per leaf in southeastern area June 26. (Iowa Ins. Inf.). MISSOURI - Will be main concern for remainder of season on both apples and peaches; all areas of State report at least some buildup, but currently under control. (Wkly. Rpt. Fr. Grs., July 3). CALIFORNIA - Heavy on fruit of Delicious apples in San Diego, San Diego County. (Cal. Coop. Rpt.).

APPLE RUST MITE (Aculus schlechtendali) - NEW YORK - Large numbers noted on foliage in 2 blocks checked June 27 and 28 in Clinton County; also noted on Yellow Delicious in Wayne County. (N. Y. Wkly. Rpt., July 1).

APPLE MAGGOT (Rhagoletis pomonella) - NEW JERSEY - Adults emerging rapidly. In one field of blueberries at Hammoncton, Atlantic County, number of adults trapped to July 1 was 299, compared with 172 on same date in 1962. At another field at same location, count was 28 compared with 0 last year. Counts in 2 representative fields at Pemberton, Burlington County, were 129 and 108, compared with 0 and 84 in 1962. These high fly counts make it necessary to adhere to strict 10-day schedule to remain maggot-free. Adults also active in untreated apple orchard in Burlington County. No emergence noted in apple orchard at Cranbury, Middlesex County, by July 1; possibly because soil very dry and hard. (Ins.-Dis. Newsltr., July 2). CONNECTICUT - Emergence continued at very low rate probably caused by high temperatures and dry ground; expected to increase soon. (Savos). MASSACHUSETTS - Treatment for maggot control recommended on blueberries. (Wheeler). NEW YORK - First adult taken in cages at Geneva July 1. Emergence continues in Niagara and Monroe Counties, but very light in latter county. (N. Y. Wkly. Rpt.). OHIO - New adults emerged from ground in cages at Wooster, Wayne County, July 3; first emergence for county. Adults noted in Geauga County June 29. (Schurr). IOWA - Absent in southeastern orchards. (Iowa Ins. Inf., July 1). WISCONSIN - Ammonia trap at Madison yielded one each on June 25, 28, 29 and 30 and July 1; three on June 27. Trap at Gays Mills negative period of June 25-July 1. (Wis. Ins. Sur.).

CHERRY MAGGOT (Rhagoletis cingulata) - NEW YORK - Emergence continues in Monroe County, but at low rate; peak occurred about June 10. (N. Y. Wkly. Rpt., July 1).

CODLING MOTH (Carpocapsa pomonella) - MAINE - Populations appear to be at normal levels and in many areas below normal incidence. No difficulties expected. (Boulanger, June 28). VERMONT - Activity prevalent in those areas with overwintering populations. (MacCollom, July 1). NEW YORK - Emergence decreasing in cages in western area; however, larval activity continues heavy. Warm weather will aggravate existing problems. Some moths still emerging in Niagara County; emergence decreased very sharply in Monroe County. (N. Y. Wkly. Rpt., July 1). MICHIGAN - New entries still appearing but most commercial orchards maintained good control in southwestern area. (Carpenter). INDIANA - Second-brood hatch just starting in Vincennes area, Knox County, July 2. Peak larval entries should occur between July 8-19 since most of the successful first-brood entries late. First-brood control very good in commercial orchards; difficult to find injured apples. (Hamilton, July 2). WISCONSIN - One trapped at Gays Mills June 30; trap at Madison yielded 4 June 25, one each June 26 and 27, two on June 28 and one on June 30. Trap at Middleton yielded one each on June 25, 28 and July 1. (Wis. Ins. Sur.). IOWA - Larvae absent in southeastern orchards. (Iowa Ins. Inf., July 1). MISSOURI - New entries continue in southeast while remainder of State free; second brood due but expected to be very light. (Wkly. Rpt. Fr. Grs., July 3). CALIFORNIA - Larvae medium locally in apple fruit in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - NEW YORK - Adults taken in bait traps June 28 in Niagara County; evidently start of second brood. (N. Y. Wkly. Rpt.). MISSOURI - Now between broods in southeast; larvae in terminals now about one week old in northwestern area. (Wkly. Rpt. Fr. Grs., July 3).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MAINE - Numbers appear to be at normal levels; incidence below normal in many areas. No difficulty expected. (Boulanger, June 28). NEW YORK - Pupae found at Geneva and Wolcott June 27; moth emergence anticipated on or soon after July 4. (N.Y. Wkly. Rpt.). MICHIGAN - Small larvae of second brood noted in Allegan County orchards. (Carpenter). WISCONSIN - Blacklight in Gays Mills yielded one each on June 26 and 30. (Wis. Ins. Sur.). IOWA - Absent in southeastern orchards. (Iowa Ins. Inf., July 1).

PEACH TREE BORER (Sanninoidea exitiosa) - INDIANA - Adults active in Vincennes area, Knox County; protection needed. (Hamilton, July 2).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Adults still active and some overwintering larvae continue development in Vincennes area, Knox County. (Hamilton, July 2).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - WISCONSIN - Blacklight trap at Gays Mills yielded 6 on June 26; 4 on June 27; 6 on June 28; 4 on June 29; and 12 on June 30. (Wis. Ins. Sur.).

APPLE APHID (Aphis pomi) - MAINE - Generally light throughout State; colonies having difficulty in becoming established. (Boulanger, June 28). CONNECTICUT - Most prevalent pest of apple at present time; heavily infested sucker and terminal growth easily found. (Savos). NEW YORK - Becoming problem in some orchards in Clinton County. (N.Y. Wkly. Rpt., July 1). MICHIGAN - Abundant on suckers in tree centers in southwestern orchards. (Carpenter).

APHIDS - NEW MEXICO - Appearing light to medium on untreated orchards in Eddy and Dona Ana Counties; species probably Myzocallis caryaefoliae. (N.M. Coop. Rpt.). UTAH - Myzus cerasi and Anuraphis helichrysi unusually severe in Utah County orchards this season. (Knowlton, Acord). M. cerasi badly curled black cherry foliage in Brigham-Willard area, Box Elder County. (Knowlton).

APPLE MEALYBUG (Phenacoccus aceris) - MAINE - Light on apple trees in yard of commercial orchardist in Auburn, Androscoggin County; however, none observed in orchard. (Boulanger, June 28).

PEAR PSYLLA (Psylla pyricola) - CONNECTICUT - Inspection of all blocks urged; pest little more numerous than in 1962. (Savos).

PERIODICAL CICADAS - INDIANA - Practically all adult activity completed; only occasional adult seen in woodlands surrounding orchards in Vincennes area, Knox County. (Hamilton, July 2). IOWA - Apple twigs with fruit broken because of egg punctures. (Iowa Ins. Inf., July 1).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - Collections made in Miami, Dade County, June 25 (Sherron); June 26 (Healy); June 29 (Brant).

Citrus Insect Situation in Florida - End of June - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 54 percent of groves (norm 56 percent); 36 percent economic (norm 32 percent). Statewide population near normal high level for June and will increase to normal high for July. Infestations very high in some districts and in certain groves. Mites nearly as abundant on fruit as on leaves. Highest districts Bartow, ridge, Brooksville and upper east coast. TEXAS CITRUS MITE (Eutetranychus banksi) infested 65 percent of groves (norm 56 percent); 43 percent economic (norm 35 percent). Above average for June, but lower than in past 2 years. Although decrease expected in July, many groves will harbor heavy infestations. Highest districts ridge, Indian River, upper east coast and Orlando. CITRUS RED MITE (Panonychus citri) infested 60 percent of groves (norm 79 percent); 27 percent economic (norm 54 percent). Although high infestations occur in scattered groves, statewide population lowest level in 12 years of record. Little change expected. Highest districts Orlando, west coast and upper east coast. PURPLE SCALE (Lepidosaphes beckii) infested 66 percent of groves (norm 76 percent); 13 percent economic (norm 14 percent). Population near normal, with most infestations light except for scattered groves in upper east coast and Indian River districts; little change expected. CHAFF SCALE (Parlatoria pergandii) infested 60 percent of groves (norm 44 percent); 19 percent economic (norm 1 percent). GLOVER SCALE (Lepidosaphes gloverii) infested 50 percent of groves (norm 27 percent); 24 percent economic (norm 1 percent). Moderate to heavy infestations of chaff scale and Glover scale more numerous than at any time in past 12 years. Current level will prevail through July. Heavy infestations confined to groves undamaged by cold. BLACK SCALE (Saissetia oleae) infested 44 percent of groves (norm 55 percent); 30 percent economic (norm 36 percent). Although statewide population below normal, heavy infestations occur in Indian River, ridge and Bartow districts which will continue high through

July. YELLOW SCALE (*Aonidiella citrina*) infested 24 percent of groves (norm 12 percent); 2 percent economic (norm none). Population higher than in any prior year. *A. citrina* now more abundant than FLORIDA RED SCALE (*Chrysomphalus aonidium*). WHITEFLIES and MEALYBUGS reached summer peak near-normal level and will decrease. Comment - In cold-damaged groves, CITRUS RUST MITE will increase and remain at high level for several weeks. TEXAS CITRUS MITE, CITRUS RED MITE, WHITEFLIES and most SCALE INSECTS will continue to increase from current low levels. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - FLORIDA - Infested *Citrus* sp. at Tampa, Hillsborough County. (Davis, June 25).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Heavy where tender growth occurs on citrus in Yuma County. (Ariz. Coop. Sur.).

A PINK CITRUS RUST MITE (*Aculus pelekassi*) - FLORIDA - Infested *Citrus* spp. in Osceola County at St. Cloud June 18 (Crews); in Hillsborough County at Ft. Lonesome June 19 (Hale, Fuller), at Dover June 26 and Brandon June 27 (Simmons), at Balm June 24 and Plant City June 26 (Custead); in Lake County on June 26 at Leesburg (Bentley) and Fruitland Park (Brown).

RED-HUMPED CATERPILLAR (*Schizura concinna*) - CALIFORNIA - Heavy, local infestations on plum and walnut trees in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Light to medium on pecans and other trees in Lee, Chambers, Cleburne, Shelby and Tallapoosa Counties; none noted in De Kalb and Marshall Counties. (Yost et al.). OKLAHOMA - Common on pecan, hickory, walnut, persimmon and other trees in eastern half of State. (Okla. Coop. Sur.).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - OKLAHOMA - First generation in Sparks area appears to be mainly in pupal stage. (Okla. Coop. Sur.).

A SOFT SCALE (*Coccus acutissimus*) - FLORIDA - Infested lychee at Miami, Dade County, in June. (Rateosian).

BLUEBERRY THRIPS (*Frankliniella vaccinii*) - MAINE - Infestations numerous in areas of Hancock and Washington Counties. In Hancock County, infestations and damage heavy in Gouldsboro and Surry; moderate in Sullivan, Aurora, Waltham and Sedgwick; light in Dedham. Also moderate in Jonesboro and other Washington County areas. (Boulanger, June 28).

A THRIPS (*Frankliniella occidentalis*) - CALIFORNIA - Adults medium on boysenberry fruit in Arlington, Riverside County. (Cal. Coop. Rpt.).

LEAF ROLLER MOTHS - CONNECTICUT - Second-brood adults expected soon. (Savos). NEW JERSEY - Few *Sparganothis* spp. observed in flight over cranberries but well confined to higher edges of bogs. (Ins.-Dis. Newsltr., July 2). CALIFORNIA - *Platynota stultana* light on boysenberry bushes in Keys, Stanislaus County, and medium in Fresno, Fresno County. (Cal. Coop. Rpt.).

SPITTLEBUGS - NEW JERSEY - Active in blueberries. (Ins.-Dis. Newsltr., July 2). RHODE ISLAND - Common on blueberries in Richmond, Washington County, and Coventry, Kent County. (Mathewson).

LEAFHOPPERS - NEW JERSEY - Sharp-nosed species active in blueberries and blunt-nosed species active in cranberries. (Ins.-Dis. Newsltr., July 2).

A FULGORID PLANTHOPPER (*Ormenis pruinus*) - ALABAMA - Most prevalent hemipteron in Mobile County; now heavily attacking new growth of figs. (Seibels).

GRAPE BERRY MOTH (*Paralobesia viteana*) - MISSOURI - Few full-grown larvae found; new adults expected; controls urged. (Wkly. Rpt. Fr. Grs., July 3).

TRUCK CROP INSECTS

APHIDS (undetermined) - MAINE - Light generally throughout 5 acres of green peppers in Scarborough, Cumberland County; conditions excellent for population buildup and mosaic infection later in summer. (Boulanger, June 28). NEW YORK - Require controls on lettuce in Oswego, Onondaga and Cayuga Counties. Present on most tomato acreage in Orleans County, and numerous on tomatoes in Niagara County. (N.Y. Wkly. Rpt., July 1). MASSACHUSETTS - Most severe problem on crops such as potatoes, cucumbers, peppers, tomatoes, cabbage and other cole crops. Controls recommended. (Wheeler).

GREEN PEACH APHID (*Myzus persicae*) - WISCONSIN - Colonies appearing on peppers in Walworth County and on tomatoes in Dane County. (Wis. Ins. Sur.). COLORADO - Increased rapidly on early potatoes; one field with increase of 4 to 400 per 100 leaves. Trace numbers of winged forms found on late potatoes in Weld County; 4 per 100 sweeps. (Berry, Cress, Jenkins). WASHINGTON - Continues lower than usual on potatoes at Othello, Adams County. (Landis). Average per 100 sugar beet leaves 3 at Ellensburg, Klickitat County; 7 in Columbia Basin; 107 at Walla Walla, Walla Walla County; and 54 in Yakima Valley. Increasing in latter 2 areas. (Wallis).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Adults very common on lima beans in Rock County and on mint in Jefferson County. Little "hopperburn" noted on potatoes in Portage County. (Wis. Ins. Sur.).

SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) - WISCONSIN - Adults prevalent in planting of mint in Jefferson County. Adults abundant on carrots in Palmyra area, Jefferson County; some leafhoppers more viruliferous than originally thought, because about 50 percent of lettuce planting in Portage County infected with lettuce yellows. (Wis. Ins. Sur.).

FLEA BEETLES - VERMONT - Unspecified species easily found on unsprayed plots of potatoes and tomatoes. (MacCollom, July 1). COLORADO - *Phyllotreta striolata* damaging home-garden tomatoes in Larimer County. (Hantsbarger). NEVADA - Unidentified species medium and continue to cause damage to very young, seedling sugar beets, but not to older beets, in Haulapi Valley, Washoe County. (Lauderdale). WASHINGTON - Populations of *Epitrix tuberis* generally low in eastern area on potatoes; this is fifth year of low abundance. (Landis).

JAPANESE BEETLE (*Popillia japonica*) - DELAWARE - Common on tomatoes and asparagus in area of New Castle County. (Burbutis, Evans).

LYGUS BUGS (*Lygus* spp.) - COLORADO - Causing damage to terminal growth of potatoes in Weld County. (Felton). WASHINGTON - Adults and nymphs abundant on various crops, but causing noticeable damage to sugar beets. Causing slight leaf damage to potatoes next to hay fields at Connell, Franklin County; Othello, Adams County; and Yakima, Yakima County. At Walla Walla, Walla Walla County, and Toppenish and Brownstown, Yakima County, adults attacked sugar beet tops causing numerous feeding punctures on petioles and main leaf veins resulting in distortion and yellowing of leaf distad of punctures. (Landis).

TARNISHED PLANT BUG (*Lygus lineolaris*) - VERMONT - Prevalent on raspberries; primary cause of scarred fruit. (MacCollom, July 1). WISCONSIN - Adults relatively common on lima beans in Rock County. (Wis. Ins. Sur.).

LEAF MINERS - VERMONT - Common on beets and spinach. (MacCollom, July 1). SOUTH CAROLINA - Considerable damage present on tomatoes in Georgetown and Marion Counties. (Nettles et al.).

STALK BORER (*Papaipema nebris*) - RHODE ISLAND - Larvae in strawberry fruit in Charlestown, Washington County. (Howard, Mathewson, June 28). OHIO - Moderate in tomato and green pepper plants at Columbus, Franklin County. (Galford).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Overwintered adult found on foliage of untreated potato plant in field 5 miles south of Presque Isle, Aroostook County. (Shands et al.). VERMONT - Easily found on untreated potato and tomato plots. (MacCollom, July 1). MASSACHUSETTS - Larvae appearing in too many fields; controls recommended. (Wheeler). CONNECTICUT - A problem in North Canaan, Litchfield County. (Savos). DELAWARE - Larvae very abundant in field of commercial tomatoes in Sussex County; causing severe injury to foliage, stems and fruit. (Burbutis, Evans). ALABAMA - Extremely light in potato-growing area of Sand Mountain. (Glissendanner, Jones). OHIO - Moderate in several north central counties; 30 larvae counted on one potato plant in Huron County. Several plants 20-60 percent defoliated. Few new adults in same potato patch. (Lyon). NORTH DAKOTA - Light in central and northern Grand Forks County. (Schultz).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Light populations, probably this species, causing light damage to tomatoes and Swiss chard in Orono, Penobscot County. (Boulanger, June 28).

TOMATO FRUITWORM (Heliothis zea) - ALABAMA - Fewer appearing on tomatoes in Blount County than usual. (Loyd, Butler).

HORNWORMS (Protoparce spp.) - MARYLAND - Small larvae light to moderate on commercial tomatoes in Worcester County. (U. Md., Ent. Dept.). ALABAMA - Fewer appearing on tomatoes than usual in Blount County. (Loyd, Butler). COLORADO - Damage noted in tomato fields in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Schweissing). MICHIGAN - P. quinquemaculata taken in blacklight traps in 8 counties; egg laying underway over entire Lower Peninsula. (Newman).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Adults heavy in potato field in Stockton, San Joaquin County. (Cal. Coop. Rpt.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MARYLAND - Few larvae found in commercial potatoes at Public Landing, Worcester County. (U. Md., Ent. Dept.).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Very low in Prowers, Bent, Otero, Crowley, Pueblo, Adams, Weld and Larimer Counties. (Schweissing, Jenkins).

POTATO APHID (Macrosiphum euphorbiae) - RHODE ISLAND - Light on potatoes in Kingston area. (Kerr).

Potato Aphids in Maine - Populations continue very small on foliage of untreated potatoes, but increased at usual, rapid rate in experimental plantings of potatoes on Aroostook Farm, near Presque Isle, Aroostook County. In commercial plantings in vicinity of Presque Isle, potato plants infested range from 42 percent in early planted field to only 3 percent in one planted later. BUCKTHORN APHID (Aphis nasturtii) in largest numbers, but in some places percent of plants infested by POTATO APHID (Macrosiphum euphorbiae) nearly equal that by A. nasturtii. GREEN PEACH APHID (Myzus persicae) and FOXGLOVE APHID (Acyrtosiphon solani) present in trace numbers only. (Shands et al.).

CABBAGE MAGGOT (Hylemya brassicae) - MAINE - Infestation and damage light on cabbage in Jonesboro, Washington County. (Boulanger, June 28). VERMONT - Caused severe loss (50 percent or more) to large cabbage planting in Windham County. (MacCollom, July 1). WISCONSIN - Second generation just beginning in southeast; some still in pupal stage and peak flight not yet occurred, although some eggs found. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW YORK - Adult activity very low in Ontario and Yates Counties. Adults active in many areas of Orleans County. First pupae found June 27 in Niagara County. (N.Y. Wkly. Rpt., July 1). OHIO - Many adults observed flying near cabbage plants in northwest; feeding damage and larvae not present. (Lyon).

SPINACH LEAF MINER (Pegomya hyoscyami) - MAINE - Infestations and damage heavy on beet greens in Berwick area, York County; light on spinach, beets and Swiss chard in Monmouth area, Kennebec County. (Boulanger, June 28). WISCONSIN - Relatively heavy in planting of beets and sugar beets in sections of east central area. (Wis. Ins. Sur.).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Adults noted near sugar beets in Grand Forks County. (Schultz).

MARGINED BLISTER BEETLE (Epicauta pestifera) - OHIO - Light feeding on sugar beets at Hardin and Putnam Counties noted; few plants 15-21 percent defoliated with 4-5 adults per plant. Heavier infestations expected later. (Lyon).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 48 per 100 sweeps in untreated sugar beet fields of Goshen County with some as high as 88 per 100 sweeps. High larval numbers found on kochia and lambsquarters on ditchbanks and field margins. (Marks). COLORADO - Larvae causing damage in sugar beet fields in Prowers and Weld Counties; 5-25 larvae per 10 plants. Trace numbers of 0-2 larvae per 10 plants found in Bent, Otero, Crowley and Pueblo Counties. Larvae controlled in one field in Weld County by disease and predators. (Schweissing, Jenkins, Titensor, Hantsbarger). UTAH - Adults moderately numerous to numerous in blacklight trap at Ogden, Weber County, June 25-July 2. (Knowlton).

MEXICAN BEAN BEETLE (Epilachna varivestis) - RHODE ISLAND - Feeding and ovipositing on beans in Richmond, Washington County, and Coventry, Kent County. (Mathewson, Cartier, Sorensen). DELAWARE - Larvae spottedly heavy in several commercial fields of snap beans in Sussex County. (Burbutis, Evans). ALABAMA - Extremely light on beans this season in Blount and Marshall Counties. (Martin, Loyd). COLORADO - Trace numbers in Otero, Pueblo, Weld and Larimer Counties. No eggs observed in bean fields checked. (Schweissing, Jenkins). UTAH - Damaging bean foliage in many Cache County home gardens; control necessary to protect commercial bean plantings in Davis and Weber Counties. (Knowlton).

ROSE CHAFER (Macrodactylus subspinosus) - VERMONT - Abundant in all areas; feeding extensively on beans. (MacCollom, July 1).

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Decreased to low levels on peas. Counts per sweep on early varieties averaged 2 in Green Lake County, 3 in Dodge County and 6 in Winnebago County; counts on midseason and late varieties averaged 5 in Green Lake County, 7 in Dodge County and 15 in Winnebago County. Ranges per sweep on midseason and late varieties were 0-3 in Rock County, 0-8 in Dane County and 3-5 in Fond du Lac County. (Wis. Ins. Sur.).

CUTWORMS - MAINE - Light populations of several species causing light damage to peas and beans in Jonesboro, Washington County. (Boulanger, June 28).

ONION MAGGOT (Hylemya antiqua) - NEW YORK - Small numbers continue present in Madison-Oneida County area. (N.Y. Wkly. Rpt., July 1). WISCONSIN - Second generation beginning; populations higher than formerly believed. (Wis. Ins. Sur.). UTAH - Troublesome in some Utah County fields and gardens. (Knowlton, Acord). NEVADA - Treatments very effective in southern Washoe County; almost no infested onions present. (Gardella).

ONION THRIPS (Thrips tabaci) - COLORADO - Found in all onion fields in Arkansas Valley and in northern area. Damage present in some fields where no controls used. (Schweissing, Jenkins). NEVADA - Trace to light on onions in southern Washoe County. (Gardella).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - RHODE ISLAND - Appearing on squash and cucumber in Warwick and Coventry, Kent County. (Cartier, Sorensen). DELAWARE - Common on cantaloup and causing moderate injury in one area of Kent County. (Burbutis, Evans). IOWA - Adults of first brood abundant on cucumber, squash

and pumpkin in central area. Controls recommended. (Iowa Ins. Inf., July 1).
COLORADO - Present on cantaloup in Arkansas Valley; fewer than 1 per 10 plants.
(Schweissing).

SQUASH BUG (Anasa tristis) - DELAWARE - Infesting cantaloup in area of Kent
County. (Burbutis, Evans). OKLAHOMA - Medium on watermelons in Stephens County.
(Okla. Coop. Sur.).

MELON APHID (Aphis gossypii) - OKLAHOMA - Heavy on watermelons checked in Major
and Stephens Counties. (Okla. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - MARYLAND - Since picking, populations built
up noticeably on strawberry plantings on lower Eastern Shore and in Baltimore
County. (U. Md., Ent. Dept.). NEW JERSEY - Hot, dry weather favorable for
increase on strawberries. Also appearing on raspberries. (Ins.-Dis. Newsltr.,
July 2).

CYCLAMEN MITE (Steneotarsonemus pallidus) - VERMONT - Present on some strawberry
plants examined. (MacCollom, July 1).

A STRAWBERRY LEAF ROLLER (Ancyliis sp.) - MARYLAND - Considerable numbers
infesting old and new strawberry plantings in several fields on lower Eastern
Shore. Random sample of 100 leaves yielded 54 larvae. (U. Md., Ent. Dept.).

RASPBERRY CANE BORER (Oberea bimaculata) - WISCONSIN - Varies light to moderate
in plantings in southern part of State; tops of new canes not yet wilted.
(Wis. Ins. Sur.).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Ranged 2-12 per plant
in large field of tobacco in Anne Arundel County. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Light to moderate, appearing
in several tobacco fields in Anne Arundel and Prince Georges Counties. (U. Md.,
Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Emergence from hibernation
about complete; first-generation adults appearing in cotton fields down state.
One-fourth of counties reporting had average of 30 percent punctured squares in
untreated fields. Average percent punctured squares for State 18 in untreated
fields and 6 in treated fields. (Cott. Ltr., July 1). GEORGIA - Percent
punctured squares in 20 counties surveyed June 27-July 3 was 1-88 in 10 percent
of fields, 11-25 in 8 percent of fields, and 26-50 in less than one percent of
fields. Infestation increased slightly from previous week; controls good in spite
of rainy weather. (Jordan). ALABAMA - Percent punctured squares remained static;
however, live adults reported as far north as Madison County. Emergence of first-
generation adults from south to north has been extremely light, and has been in
direct relationship to square infestation counts in individual fields over past
4 weeks. Isolated infestations as high as 40 percent reported. (McQueen et al.).
TENNESSEE - Infestations light in western area. Square counts could be made in
about 50 percent of fields surveyed. Percent punctured squares ranged 0-12,
averaged 3, in those fields found infested. Emergence slow and infestations much
lower than expected. Weather conditions ideal for buildup. (Locke). ARKANSAS -
Present in 46.2 percent of 5,922 fields scouted, 2 percent fewer fields than same
time in 1962. In spite of increase in activity, only 6 fields had infestation
levels that would justify controls. (Wkly. Cotton Ins. Rpt.; June 28). LOUISIANA -
First-brood adults present in many Tallulah area fields; infestation levels gener-
ally low. (Smith et al.). MISSISSIPPI - Punctured squares found in 8 of 31
fields checked in delta counties; averaged less than 1 percent in infested fields.

Adults, probably first generation, observed in experimental field. (Pfrimmer et al.). OKLAHOMA - Infestations continue light in cotton-producing areas of State. No counts over 8 percent punctured squares reported. (Okla. Coop. Sur.). TEXAS - Situation remains generally favorable except in some central and southern areas where infestations reaching economic levels. (Tex. Coop. Rpt.). Percent punctured squares averaged 25.4 in untreated fields and 0.6 in treated fields in McLennan and Falls Counties. (Cowan et al.).

SPIDER MITES - CALIFORNIA - Tetranychus atlanticus abundant throughout most of Kings County. (McCutcheon, June 24). Serious T. atlanticus damage to cotton noted in Firebaugh, San Joaquin, Tranquillity and Kernman area of Fresno County; considerable defoliation occurring. (Ferris, June 27). T. atlanticus continues to cause severe defoliation in untreated cotton fields in Shafter area, Kern County; rapid growth of cotton may mask many infestations. T. telarius increasingly evident throughout Kern County and T. pacificus becoming evident in many fields in West Side area. (Leigh, June 27). TENNESSEE - Tetranychus cinnabarinus, T. tumidus, T. lobosus and T. atlanticus positively identified as most prevalent species of mites that usually infest cotton over western area; most common species T. atlanticus. Populations and number of infestations increased over previous week. Further increase expected if controls not applied. (Locke). MISSOURI - Marginal and spot infestations of unspecified species present in 155 of 727 cotton fields scouted. (French). ALABAMA - Spider mite activity retarded by rains and cooler weather; isolated infestations present throughout State. (McQueen et al.).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Continue a problem in nearly all counties. Some plants examined had 4-6 hollowed-out squares per plant, with lesser numbers of injured squares on adjacent plants. (Cott. Ltr., July 1). GEORGIA - Counts made in 20 counties week of June 27-July 3. Eggs per 100 terminals 1-10 in 78 percent of fields, 11-25 in 7 percent, 26-50 in 2 percent, and none in 12 percent of fields. Only 1 percent of fields had over 50 per 100 terminals. Larvae per 100 terminals 1-3 in 51 percent of fields, 4-10 in 14 percent, 11-25 in 2 percent and none in 34 percent of fields. Bollworms appear to be more of a problem in southwest than southeast section of State. Potential for damage remains high. Damaging populations currently present in about 15 percent of fields checked. (Jordan). ALABAMA - Greater numbers appearing in southern portion of State, with extremely heavy infestations noted in Autauga, Dallas and Elmore Counties. Although eggs appearing in most fields, rains apparently reduced survival. (McQueen et al.). TENNESSEE - Continue a problem in some western area fields, but infestations not general. Counts 0-20 larvae or eggs per 100 terminals. Larvae averaged 3 per 100 terminals in infested fields; some controls started. (Locke). MISSOURI - Only 24 of 727 fields scouted infested with 0-3 larvae per 100 plants. (French). ARKANSAS - Activity about same as last year at this time; more found than previous week. Natural enemies continue to suppress populations. (Wkly. Cotton Ins. Rpt.; June 28). Ten of 21 Heliothis checked in Lafayette County, southwest, July 2 were H. virescens. (Ark. Ins. Sur.). LOUISIANA - Terminal egg and larval counts remained low in Tallulah area, but damaged-square counts increased somewhat. Large larvae that may damage bolls still rather scarce. (Smith et al.). MISSISSIPPI - Injured squares found in 23 of 31 fields scouted in delta counties; averaged slightly more than 1 percent in infested fields. Eggs found in terminals in only 1 of 14 fields checked. No larvae found in terminals. (Pfrimmer et al.). OKLAHOMA - None to very light numbers of eggs noted in most cotton checked in south central and east central areas. Larval infestation 8-42 percent in 300 acres of cotton checked in Webber Falls area, Muskogee County. (Okla. Coop. Sur.). TEXAS - H. zea moth activity increased greatly and heavy egg deposition occurring in most areas in southeastern half of State. H. virescens populations about the same, but increasing H. zea population overshadowing damage caused by H. virescens. (Tex. Coop. Rpt.). In McLennan and Falls Counties, infestation remains heavy and injurious numbers occurring in most fields. Square injury averaged 10.5 percent in treated fields and 11.5 in untreated fields. Boll injury averaged 10.4 percent in treated fields and 10.3 percent in untreated fields. (Cowan et al.).

BOLLWORM (*Heliothis zea*) - NEW MEXICO - Adults becoming heavy in southern Dona Ana County; 75 collected in one night's trapping on July 2. Other light traps in areas in northern Dona Ana County yielded very few moths. Reports from other cotton-growing areas in State indicate light infestations. (N.M. Coop. Rpt.).

BEE T ARMYWORM (*Spodoptera exigua*) - TEXAS - Light but generally threatening in widespread areas of south plains, red rolling plains and Culbertson County area. (Tex. Coop. Rpt.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Reported on cotton in Moncks Corner area, Berkeley County. (Cott. Ltr., July 1). GEORGIA - Light in less than 10 percent of fields examined June 27-July 3; disease reported across southern portion of State and is expected to control infestations for at least next few weeks. (Jordan). ALABAMA - Small numbers appearing in southern and central areas; heavy infestation in isolated Elmore County field destroyed by disease. (McQueen, Smith et al.).

GARDEN WEBWORM (*Loxostege similalis*) - OKLAHOMA - Medium to heavy infestations becoming increasingly common in cotton fields in west central and southwest areas. Severe damage noted in few isolated spots. (Okla. Coop. Sur.). TEXAS - Causing considerable economic damage in widespread areas of south plains and red rolling plains. (Tex. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - TEXAS - Infestations in some fields in Matagorda County area remain at economic levels. Cotton beginning to show signs of "cutting out" in area. In Coynosa area of Pecos County, an infestation of up to 2,650 larvae per acre present. Other fields had counts as low as 340 per acre, with majority of counts ranging 1,000-2,000 larvae per acre. Only about 2,000 acres of 15,000 acres in area blooming on June 26. (Tex. Coop. Rpt.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - CALIFORNIA - Present in southern part of Kings County, especially in Tulare Lake area. Second generation expected in few weeks. (McCutcheon, June 24). Moths in flight in Hanford and Tulare Lake areas. Outbreak may occur, particularly in areas where larval migrations evident 2 weeks ago. (Leigh, June 27).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Generally light in cotton in Hidalgo, Luna and Dona Ana Counties; counts range from 3 per 100 sweeps in Hidalgo County to 3-8 per 25 sweeps in parts of Dona Ana County. (N.M. Coop. Rpt.). ARIZONA - Averaged 18 per 100 sweeps in Yuma County; only few fields treated. Many fields have been and are being treated in Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - Began migrating from safflower to cotton during weekend of June 15-16 in Kings County. Migration continued during early part of week and was reduced as weather became cooler. (McCutcheon, June 24). Infestations are on west side of county in general, with most counts running over 10 (east Fresno County counts 6-25). General treatment underway by many growers. (Ferris, June 27). Becoming increasingly abundant in Kern County cotton, particularly those fields adjacent to harvested potato fields and cut alfalfa. (Leigh, June 27).

COTTON FLEAHOPPER (*Psallus seriatus*) - TENNESSEE - Very light infestations appearing in some rank cotton in western area, but causing very little damage. (Locke). LOUISIANA - Populations decreasing in Tallulah area. (Smith et al.). TEXAS - Continues to cause economic damage in areas where cotton squaring heavily, particularly in northern and northwestern areas. (Tex. Coop. Rpt.).

BLACK FLEAHOPPERS - ARIZONA - Adults up to 40 per 100 sweeps in Yuma County; squares 25 percent damaged. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - TENNESSEE - Causing some light damage to small cotton squares over western area. (Locke). LOUISIANA - Populations decreasing in Tallulah area. (Smith et al.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE BARK BEETLES - CALIFORNIA - Dendroctonus pseudotsugae attacking shaded windthrows of Douglas-fir in 2,400-acre stand in Larabee Creek-Bridgeville area in Humboldt County; infestations increasing. (R. E. Fehly, USFS). Scolytus ventralis adults heavy locally in pines in Stockton area, San Joaquin County. (Cal. Coop. Rpt.). ALABAMA - Dendroctonus frontalis caused considerable damage to pines at 7 locations on 2 farms in Barbour County; 25-30 pines killed. (Ledbetter).

WHITE-PINE WEEVIL (Pissodes strobi) - RHODE ISLAND - Current damage to tips becoming noticeable statewide. (Mathewson).

JACK-PINE BUDWORM (Choristoneura pinus) - MICHIGAN - Larval damage light to heavy in Crawford, Oscoda and Iosca Counties; defoliation occurring on all sizes of jack pine; pupation began about June 25; larvae and pupae present in infested areas. (Bloomer, Flink).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Second generation light to medium on loblolly and shortleaf pines in Sand Mountain counties, but extremely light in Cleburne, Chambers and other counties at lower altitudes. (McQueen).

A PINE SHOOT MOTH (Rhyacionia pasadenana) - CALIFORNIA - Medium on Monterey pines in Eureka, Humboldt County. (Cal. Coop. Rpt.).

ZIMMERMAN PINE MOTH (Dioryctria zimmermani) - RHODE ISLAND - Larvae of this, or closely related species, damaging 3-needled pine in Richmond, Washington County, and Coventry, Kent County. (Mathewson).

PINE WEBWORM (Tetralopha robustella) - NEW JERSEY - Damage to pine reported in several localities throughout State. (Ins.-Dis. Newsltr., July 2).

A PINE LEAF APHID (Pineus pinifoliae) - MAINE - Heavy and causing moderate injury to white pine in New Sharon, Franklin County. (Boulanger, June 28). VERMONT - Heavy in Woodstock-Windsor area, Windsor County. (MacCollom, July 1).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MARYLAND - Heavy on several large spruce trees at College Park, Prince Georges County. (U. Md., Ent. Dept.).

SPRUCE SPIDER MITE (Oligonychus ununguis) - MARYLAND - Heavy on spruce at West Friendship, Howard County. (U. Md., Ent. Dept.). CONNECTICUT - Injury quite noticeable on spruce, juniper, hemlock and arborvitae. (Savos). RHODE ISLAND - Probably this species very heavy on hemlock hedge in Kingston, Washington County. Several similar instances reported in southern part of State recently. (Mathewson).

ELM LEAF BEETLE (Galerucella xanthomelaena) - VERMONT - Eggs hatched June 18 in Windsor, Windsor County. Visible damage observed in Addison, Addison County, week of June 24. (MacCollom). RHODE ISLAND - Larval feeding heavy in Kingston, Washington County; East Greenwich and Cowesett section of Warwick, Kent County. Defoliation heavy in these areas in 1962. (Mathewson, Cartier). NEW YORK - Larvae numerous in Ithaca area; in several stages of development. (N. Y. Wkly. Rpt., July 1). MARYLAND - Caused noticeable injury to American elms at Laurel, Prince Georges County, and at Baltimore. (U. Md., Ent. Dept.). ALABAMA - Larvae and adults continue feeding heavily on elms in Lee County. Light infestation noted in Chambers County. (McQueen). OKLAHOMA - Medium to heavy defoliation common in most areas. (Okla. Coop. Sur.). MISSOURI - Second-generation larvae feeding on elms in central area; some elms partially defoliated by first generation. (Munson, Thomas, Wood). OHIO - New adults emerged at Columbus, Franklin County, central area; damage moderate. Full-grown larvae and new adults feeding. (Lyon).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ILLINOIS - Caused slight browning of black locust leaves in Pope, Franklin and Johnson Counties, July 1-3; single adult swept from oats in Will County previous week. All new county records. (Ill. Ins. Rpt.). WISCONSIN - Mines appearing on black locust in Walworth County. Adults present in Trempealeau County, but no mines noted. (Wis. Ins. Sur.).

LOCUST BORER (Megacyllene robiniae) - UTAH - Damaging many black locusts in Holladay-Taylorville area, Salt Lake County. (Knowlton).

TWIG PRUNER (Elaphidion villosum) - RHODE ISLAND - Typical "flags" appearing on oaks along roadsides in Washington and Kent Counties. (Mathewson).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Webs appearing in many valuable trees in Las Cruces, Dona Ana County. (N. M. Coop. Rpt.). OHIO - Young larvae feeding on black walnut at Wooster, Wayne County, northeast. (Forsythe, Lyon).

GYPSY MOTH (Porthetria dispar) - CONNECTICUT - Pupating on tree trunks. (Savos). RHODE ISLAND - Large larvae collected in Cranston, Providence County; 3-day survey by helicopter failed to disclose any defoliated areas. (Cartier).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - KANSAS - Heavy on soft maple in Belvue, Pottawatomie County, northeast; soft maples throughout town completely defoliated. First-generation larvae nearly full grown. (Thompson). MISSOURI - Caused defoliation and partial defoliation of scattered maples in northwest area. (Munson, Thomas, Wood).

LINDEN LOOPER (Erannis tiliaria) - MICHIGAN - Larvae caused considerable defoliation of most hardwoods in western Emmet County; resort and cottage owners complaining of larvae entering premises. (Flink, Festerling). VERMONT - Prevalent in Addison County. (MacCollom, July 1).

SATIN MOTH (Stilpnotia salicis) - VERMONT - Infestations occurring in several areas. (MacCollom, July 1). NEW YORK - Defoliating poplar trees at Chazy, Clinton County, June 25. (N. Y. Wkly. Rpt.). WASHINGTON - Adults appearing at Friday Harbor, San Juan County. Damage severe on willow and poplar; 2 Lombardy poplars and some silver poplars stripped; light on other hosts. (Baker).

SOLITARY OAK LEAF MINER (Cameraria hamadryadella) - OHIO - Moderate to heavy on oaks at Wooster, Wayne County, northeast. (Neiswander, Lyon).

TENT CATERPILLARS (Malacosoma spp.) - NEW MEXICO - M. fragile completely defoliating large areas of aspen in Cumbres Pass area at 9,500 to 10,500 feet elevation. (N. M. Coop. Rpt.). WASHINGTON - Malacosoma spp. adults flying at Friday Harbor, San Juan County; larvae and pupae still present; eggs observed June 24. Moths relatively scarce due to disease and parasites. (Baker).

OLETHREUTID MOTHS - MICHIGAN - Larvae, probably Epinotia nisella creddeana, caused widespread defoliation of aspen in Otsego, Gladwin, Ogemaw, Alpena, Alcona and Iosco Counties. An undetermined species caused up to 30 percent defoliation of many basswoods in Emmet and Otsego Counties. (Flink).

NOTODONTID MOTHS (Datana spp.) - WISCONSIN - Species taken in blacklight traps as follows: D. integerrima - Madison June 10, Middleton June 15; D. contracta - Madison June 30, Middleton, July 1; D. ministra - Madison June 24; D. perspicua - Madison June 27. (Wis. Ins. Sur.).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - NEW JERSEY - Crawlers active on maple in Middlesex County. (Ins.-Dis. Newsltr., July 2). OHIO - Severely damaged silver maples in Hardin County, northwest; trees heavily infested with many limbs dying. Spray program to be initiated. (Lyon). WASHINGTON - Eggs heavy on maple at Touchet, Walla Walla County. (Featherston).

OAK KERMES SCALES (*Kermes* spp.) - OKLAHOMA - Averaged 4-5 per leaf on pin oaks and burr oaks in Lawton, Ponca City and Stillwater. (Okla. Coop. Sur.).

MIRID BUGS - CALIFORNIA - These and looper larvae, both undetermined, causing complete defoliation of Oregon ash trees in Callahan Ranger Station in Klamath National Forest. (J. R. Barrington, USFS).

PERIODICAL CICADAS - IOWA - Results of egg-laying activities apparent in south-east area on oaks, elms, silver poplars, other deciduous trees and redcedar. Emergence and activity in Ames about 10 days later than in surrounding area. (Iowa Ins. Inf., July 1).

TWO-MARKED TREEHOPPER (*Enchenopa binotata*) - KANSAS - Heavy on some plants, including redbud, in Riley County, northeast. (Gates). OHIO - Light to moderate on black walnut at Wooster, Wayne County, northeast. (Forsythe, Neiswander).

A FLATID PLANTHOPPER (*Metcalfa pruinosa*) - OKLAHOMA - Medium to heavy on red maple in Stillwater area, Payne County. (Okla. Coop. Sur.).

BIRCH LEAF MINER (*Fenusa pusilla*) - OHIO - Common on white birch over northern part of State. Half-grown larvae of second brood observed on same host at Wooster, Wayne County, northeast. (Rings, Treece, Neiswander). CONNECTICUT - Second-generation larvae forming small mines. (Savos). RHODE ISLAND - Evidence suggests second generation will be light as usual. (Mathewson).

ERIOPHYID MITES (*Eriophyes* spp.) - OKLAHOMA - Continue a problem on maples, oaks, pecan, elms and other trees in many areas. (Okla. Coop. Sur.).

BAGWORM (*Thyridopteryx ephemeraeformis*) - ALABAMA - Heavy, isolated infestations occurring on redcedar, arborvitae, Arizona cypress and Pfitzer juniper in Marshall, Blount, Dallas and Tallapoosa Counties. Few specimens in extreme populations feeding on roses, alders and other plants. (Granberry, Yost et al.). OKLAHOMA - Damage to evergreens common throughout State. (Okla. Coop. Sur.). MARYLAND - Heavy on cedars around properties in Prince Georges and St. Marys Counties. (U. Md., Ent. Dept.).

BEEET ARMYWORM (*Spodoptera exigua*) - FLORIDA - Severe on about 200 rose bushes at Naples, Collier County. (Lindabury, June 24).

CABBAGE LOOPER (*Trichoplusia ni*) - FLORIDA - Infesting *Chrysanthemum* spp. at Alva, Lee County, and Punta Gorda, Charlotte County. (Shirah, June 24).

STALK BORER (*Papaipema nebris*) - DELAWARE - Heavy in marigolds in an area of New Castle County. (Burbutis, Evans). VERMONT - Infesting many herbaceous plants. (MacCollom, July 1).

MIMOSA WEBWORM (*Homadaula albizziae*) - DELAWARE - Infesting mimosa in an area of Sussex County. (Burbutis, Evans).

A PSYCHID (*Apterona crenulella*) - NEVADA - Medium to heavy on ornamental shrubs, trees and flowers in Eureka, Eureka County. (Earnist, Lauderdale).

A CLEARWING MOTH (*Thamnosphacia geliformis*) - FLORIDA - Severe on Australian-pine (*Casaurina* sp.) at Sebring, Highlands County. (McAulay, July 2).

ARBORVITAE LEAF MINER (*Argyresthia thuiella*) - CONNECTICUT - Adults active. (Savos). MASSACHUSETTS - Adults active. (Wheeler, July 1).

JAPANESE BEETLE (*Popillia japonica*) - MASSACHUSETTS - Adults emerging and attracted to newly opened blossoms and new foliage. (Wheeler). MARYLAND - Adults causing heavy to severe injury to unprotected roses, flowering crab apple and other favored hosts in suburban areas. (U. Md., Ent. Dept.).

SOUTH CAROLINA - Noted feeding on beggarweed and plum June 22. Populations increasing in areas recently found infested where environment favorable for development and where natural enemies not yet sufficiently prevalent to prevent high populations. High populations can be expected to develop and persist for several years in these areas. (Nettles et al.). Also noted feeding on zinnias in Pendleton, Anderson County, June 24. (Payne).

ROSE CHAFER (Macroductylus subspinosus) - MAINE - Heavy numbers appearing in Cumberland and York Counties; feeding general. (Boulanger, June 28). MICHIGAN - Adults light in Wayne, Ottawa and Ogemaw Counties. (Kidd, Machiele, Ferris).

APHIDS - WASHINGTON - Apteræ of an undetermined species attacking English holly in limited numbers at Friday Harbor, San Juan County; does not curl leaves; this different species than formerly observed. (Baker). Myzocallis robiniae summer apteræ causing etiolation of black locust leaves that fall prematurely at Yakima, Yakima County; damage heavy. Summer apteræ of Periphyllus lyropictus on maple and Monellia caryae on black locust extremely abundant at Walla Walla, Walla County, and Yakima, Yakima County; leaves glazed with honeydew and will cause premature leaf drop. (Landis). NEVADA - Cinara tujafilina heavy on arborvitæ in Reno, Washoe County. (Galloway). UTAH - Unspecified species heavy on Norway maples and linden at Brigham City, Box Elder County, and in Logan-Providence area of Cache County, and beech in latter area. Aphis spiraeicola extremely numerous on many spirea bushes at Logan, Farmington, Brigham City and Orem; Myzocallis coryli numerous on foliage of hazelnut trees at Logan, Cache County; Pemphigus spp. infesting petiole, base of leaf blade and twigs of trees in Ogden-Roy-Slaterville area, Weber County, and unspecified species also very numerous on black locust and Norway maple in this area. (Knowlton). NEW MEXICO - Unspecified species causing honeydew to drip on cars under boxelder trees in Taos, Taos County. (N. M. Coop. Rpt.). NEW YORK - Eriosoma lanigerum a problem on new street plantings of hawthorn in Buffalo. Infestations have been noted for 3 years in area, but partially controlled this season. (N. Y. Wkly. Rpt., July 1).

COCCIDS - VERMONT - Lepidosaphes ulmi heavy on lilac in Woodstock-Windsor area, Windsor County. (MacCollom, July 1). RHODE ISLAND - Lecanium excrescens infesting adjoining rambler rose and wisteria plants in Peace Dale, Washington County; tentatively determined as this species by H. Morrison in 1962. (Stessel, Mathewson). NEW JERSEY - Eriococcus azaleae crawlers active on azalea. (Ins.-Dis. Newsltr., July 2). INDIANA - Lepidosaphes ulmi females of brown race depositing eggs for second generation. (Schuder). WISCONSIN - Main hatch of Lecanium fletcheri eggs began in Dane, Dodge and Jefferson Counties on ornamental Juniper, arborvitæ and yew June 27; crawlers now moving to new growth. Controls applied now most timely. Gossyparia spuria began emerging about June 20 in same area. (Wis. Ins. Sur.). UTAH - G. spuria damaging elms at Logan, Cache County, and many elms in general area of Salt Lake City, Salt Lake County. (Knowlton).

Coccids in Florida - Chrysomphalis aonidum infested Tsuga sp. at De Land, Volusia County. (Roberts, June 21). At Glen St. Mary, Baker County, infestations of Coccus hesperidum on Fatchedera lizei, Chrysomphalus aonidum and Coccus acuminatus on Theae sinensis, and Lepidosaphes maskelli on Cryptomeria japonica were light; and Diaspis carueli infested Juniperus spp. (Collins, June 25, 26). Coccus hesperidum severely infested 107,000 Citrus sinensis at Balm (Custead, June 24), and Aspidiotus lataniae infested Camellia japonica at Seffner, Hillsborough County, (Hill, Simons, June 28). Protospulvinaria pyriformis infested Malpighia sp. at Pahoee, Palm Beach County. (Smith, June 30).

A SPITTLEBUG (Prosapia bicincta) - KANSAS - Heavy on holly in Woodson County, southeast. (Gates).

A FULGORID PLANTHOPPER (Acanalonia bivittata) - ALABAMA - This species and Graphocephala spp., as well as a complex of other homopterons, occurring in numbers and increasing on camellias and other ornamentals in Mobile County. (Seibels).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - All stages heavy on albizzia trees in Santa Clara, Santa Clara County. This species has been severe pest of acacia trees statewide for several years. (Cal. Coop. Rpt., June 28).

CRICKETS - ALABAMA - Increasing rapidly on camellias in Mobile County. In addition to Orocharis sp., large numbers of Cycloptilum trigonipalpus and Oecanthus sp. now appearing. (Seibels).

SPIDER MITES - NEVADA - Infesting arborvitae and juniper in Reno, Washoe County. (Galloway). NEW MEXICO - Heavy on poppies in a Taos County nursery. (N. M. Coop. Rpt.). MARYLAND - Infesting roses at 2 locations in Prince Georges County and boxwood at Centreville, Queen Annes County. (U. Md., Ent. Dept.). FLORIDA - Eutetranychus banksi severe on Poncirus trifoliata at Turkey Creek, Hillsborough County. (Custead, June 17).

INSECTS AFFECTING MAN AND ANIMALS

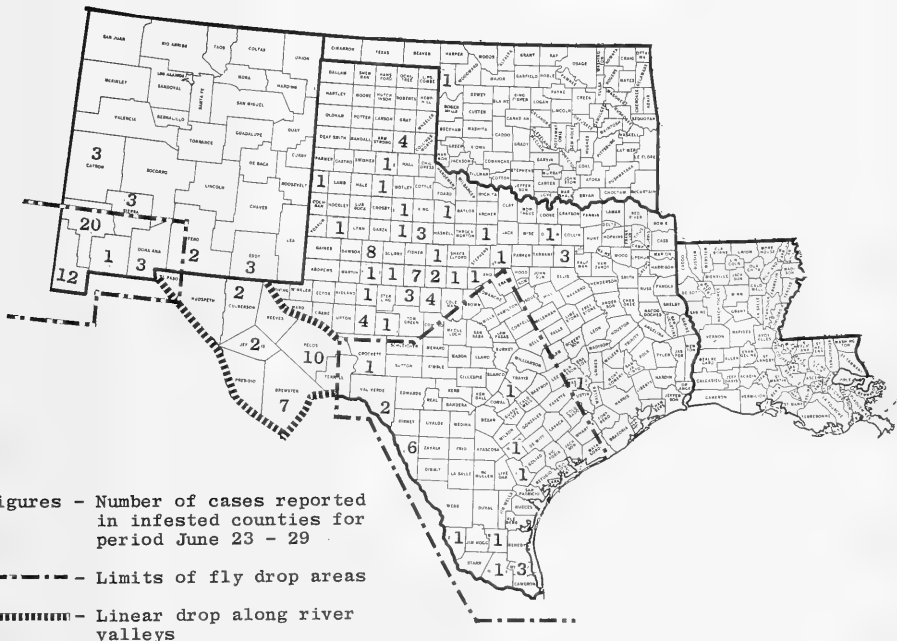
MOSQUITOES - CALIFORNIA - Mosquito populations abnormally low for time of year; continued cool weather has held numbers in check with controls required in very few local areas. Populations highest in north coastal and rice-growing areas. (Cal. Coop. Rpt.). UTAH - Mosquitoes unusually severe this year over State. Very troublesome in Provo-Springville area and other portions of Utah County (Knowlton, Acord); numerous and troublesome in Willard-Fielding, Portage and Locomotive Springs areas, Box Elder County (Knowlton, Colmar); troublesome at several camp grounds and fishing areas in Logan Canyon, Cache County, and many other areas in county; also from Price through Wellington in Carbon County, and at Green River, Emery County (Knowlton). NEW MEXICO - Unspecified species heavy near streams or in river valleys in most of State. (N. M. Coop. Rpt.). TEXAS - Nightly catch averaged 60 mosquitoes per trap in 15 traps operated by Lubbock County Health Department. Species involved were Culex tarsalis 6.1 percent, Aedes vexans 58.1 percent, Psorophora spp. 35.8 percent. (Breedlove). OKLAHOMA - Populations of several species decreased in range areas of north central portion of State. (Okla. Coop. Sur.). ALABAMA - Mosquito situation at Dauphin Island, Mobile County, worst ever noted. Biweekly aerial sprayings ineffective; fogging underway constantly since June 28, but results still not satisfactory. Aedes taeniorhynchus, which recently appeared in area, most difficult to control. (Seibels). NORTH DAKOTA - Counts of unspecified species decreasing in Fargo area, Cass County. (Noetzel). WISCONSIN - Very little change in mosquito situation as previously reported. Unspecified species driving cattle from pastures at night in Walworth County. Mosquitoes a problem in Wood, Door, Chippewa, Shawano, Walworth, Waukesha, Bayfield, Ashland, Trempealeau, Langlade, Green Lake, Sauk, Juneau and Adams Counties; problem not countywide nor is only one species responsible. (Wis. Ins. Sur.). MICHIGAN - Mosquito populations generally diminishing. (Machiele, Ferris, Mattson, Kidd). CONNECTICUT - Unspecified species annoying. (Savos).

FACE FLY (Musca autumnalis) - VERMONT - Averaged 25-30 per animal in all areas. (MacCollom, July 1). MARYLAND - Ranged 2-25 per head in 11 dairy herds checked in Frederick and Howard Counties. (U. Md., Ent. Dept.). ILLINOIS - None observed in Johnson, Massac, Pope, Saline or Franklin Counties. (Ill. Ins. Rpt.). WISCONSIN - Again a problem in Walworth County. (Wis. Ins. Sur.). NORTH DAKOTA - Up to 30 per face observed on beef and dairy animals in Richland and Ransom Counties. (Brandvik). Ranged 7-10 per animal at North Dakota State University Experiment Station, Fargo. Severe infestation which occurred in home in Richland County last winter determined as this species. (Noetzel). WYOMING - No adults detected as yet on herds checked in Goshen County. (Marks). COLORADO - Has not been observed. (Jenkins).

HOUSE FLY (*Musca domestica*) - VERMONT - Populations high, but control good where sanitation and chemicals used properly. (MacCollom, July 1). CONNECTICUT - Larval and adult numbers increasing. (Savos). ALABAMA - Considerable buildup noted around poultry houses recently in Blount County. (Loyd, Butler). OKLAHOMA - Averaged 15-18 per Scudder grid in Stillwater area, Payne County. (Okla. Coop. Sur.).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period June 23 - 29, a total of 96 infestations, including one of unknown origin, reported from TEXAS; 48, including one of unknown origin, from NEW MEXICO; and 1 from OKLAHOMA. Specimens were reported from 41 counties in Texas, 8 in New Mexico and 1 in Oklahoma. Screw-worm was reported for the first time this year from Briscoe, Floyd, Terry and Washington Counties, Texas. A total of 118,595,850 sterile flies was released during the period June 23 - 29. (Anim. Dis. Erad. Div.).



HORN FLY (*Haematobia irritans*) - NEVADA - Very heavy on cattle in Mason Valley, Lyon County. (Lauderdale). UTAH - Troublesome to cattle in several areas of Weber and Salt Lake Counties. (Knowlton). WYOMING - Adults causing much annoyance to livestock in Goshen County. (Marks). SOUTH DAKOTA - Annoying cattle generally throughout State; ranged 35-100 per side per animal in Clark and Codrington Counties. (Hintz). ILLINOIS - Varied 0-1,000, average about 250, per animal on cattle in southern part of State. (Ill. Ins. Rpt.). OKLAHOMA - Increased somewhat in Stillwater area, Payne County, north central; averaged 100 per calf, 750 per cow, 5,000 per bull. Averaged 250 per cow in herd of 70 animals in Vian area, Sequoyah County, east central. Medium to heavy infestations common in numerous counties over State. (Okla. Coop. Sur.). ALABAMA - Ranged 100-500 per animal in 4 herds in Barbour County; 5-50 per animal in herds in Cleburne, Marshall and Blount Counties. (McQueen). VERMONT - Ranged 75-100 per animal. (MacCollom, July 1).

TABANIDS - RHODE ISLAND - *Chrysops* spp. annoying in rural areas statewide. (Mathewson). ILLINOIS - Horse flies varied 0-6 (average 1.6) per animal on cattle and horses in southern area. (Ill. Ins. Rpt.). WISCONSIN - Deer fly and horse fly numbers remain high in Walworth County. (Wis. Ins. Sur.). NORTH DAKOTA - *Tabanus lineola* averaged 5 per animal at North Dakota State University Experiment Station in Fargo. (Noetzel). WYOMING - *Chrysops* spp. adults greatly annoying to man and animals in Goshen County. (Marks). UTAH - Unspecified species annoying horses and cattle in Randolph area, Rich County, and horses in Plain City-West Weber area, Weber County. Deer flies annoying humans in Garden City-Lakota area, Rich County. (Knowlton). NEW MEXICO - Unspecified species very annoying to man and animals in San Juan, Rio Arriba and Taos Counties. (N. M. Coop. Rpt.). OKLAHOMA - Counts of *Tabanus atratus*, *T. sulcifrons* and *T. lineola* complex averaged up to 5 per animal in low lying pastures in Stillwater area, Payne County. Horse flies and deer flies causing considerable annoyance to livestock and picnickers in Osage County area, north central. (Okla. Coop. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - NORTH DAKOTA - Ranged 3-23 per animal in Cass County. (Noetzel). WISCONSIN - Fly species causing most concern to dairymen. (Wis. Ins. Sur.). ILLINOIS - Varied 0-10 (average 3.7) per animal on cattle in southern area. (Ill. Ins. Rpt.). OKLAHOMA - Continued light to medium in Stillwater area, Payne County; averaged 3 per untreated animal. (Okla. Coop. Sur.).

CATTLE GRUBS (*Hypoderma* spp.) - WISCONSIN - Adults annoying cattle in Walworth, Dodge and Monroe Counties. (Wis. Ins. Sur.). UTAH - Adults running calves and older cattle in Plain City-Slaterville area, Weber County, and running cattle in Moroni, Fountain Green and Fairview areas of Sanpete County. (Knowlton, Funk).

FLIES - COLORADO - Populations on and around livestock in northeast area at low levels this season. (Jenkins). WISCONSIN - Generally becoming more annoying. (Wis. Ins. Sur.).

BLACK FLIES - MICHIGAN - Light in Ottawa and Ogemaw Counties, heavy in Marquette County. (Machiele, Ferris, Mattson, Kidd).

BLOODSUCKING CONENOSE (*Triatoma sanguisuga*) - OKLAHOMA - Heavy in a home in Ardmore, Carter County. (Okla. Coop. Sur.).

BED BUG (*Cimex lectularius*) - MARYLAND - Heavy numbers caused annoyance in home at Bel Air, Harford County. (U. Md., Ent. Dept.).

FLEAS (*Ctenocephalides* spp.) - ALABAMA - Several infestations reported recently in Lee County in sandy yards. (Ledbetter). OKLAHOMA - Continue a problem in homes of returning vacationers who regularly keep pets. (Okla. Coop. Sur.). IOWA - Infestations increasing. Severe in house in Rockwell City, Calhoun County; also problem in Des Moines, Ft. Dodge, and Wright and Cerro Gordo

Counties. (Iowa Ins. Inf., July 1). MICHIGAN - Light in Wayne and Ogemaw Counties. (Machiele, Ferris, Mattson, Kidd). RHODE ISLAND - Stubborn household infestation reported in Manton, Providence County. (Mathewson).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Some complaints of urtication reported from Sacramento, Sacramento County, where heavy, local infestations present on plum and walnut trees. (Cal. Coop. Rpt.).

YELLOW JACKETS - NEW MEXICO - Heavy and very annoying to homeowners and tourists in Rio Arriba and Taos Counties. (N. M. Coop. Rpt.).

HOUSEHOLD AND STRUCTURAL INSECTS

LARDER BEETLE (Dermestes lardarius) - MICHIGAN - Reports from widespread areas of State indicate problem much greater than during recent years; most infestations found in insulating materials. (Janes).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Medium numbers in residence in Fresno, Fresno County, causing a nuisance. (Cal. Coop. Rpt.).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Troublesome about many homes in Utah, Salt Lake, Weber and Cache Counties. (Knowlton).

SPRINGTAILS - NEW JERSEY - Appearing in houses and causing concern to homeowners. (Ins.-Dis. Newsltr., July 2).

CARPENTER ANTS (Camponotus spp.) - NEW YORK - Many homeowner complaints in Nassau County. (N. Y. Wkly. Rpt., July 1). CONNECTICUT - C. pennsylvanicus troublesome. (Savos).

PAVEMENT ANT (Tetramorium caespitum) - CONNECTICUT - Causing some concern. (Savos).

BENEFICIAL INSECTS

LADY BEETLES - NEBRASKA - Hippodamia sp. adults ranged 2-7 per 100 sweeps in northern and northeastern area alfalfa. (Bergman). COLORADO - Larvae of unspecified species numerous in all areas; contributing to control of economic species. (Jenkins). WYOMING - Adults of several species averaged 40 and larvae 16 per 100 sweeps in Goshen County alfalfa. (Marks). UTAH - Adalia bipunctata controlled aphid infestation on white birch at Logan, Cache County. (Knowlton).

DAMSEL BUGS (Nabis spp.) - NEBRASKA - Adults ranged 3-10 per 10 sweeps in alfalfa in north and northeast areas. (Bergman). COLORADO - Larvae numerous in all areas and contributing to control of economic species. (Jenkins). WYOMING - Adults averaged 38 per 100 sweeps in Goshen County alfalfa. (Marks).

LACEWINGS - COLORADO - Larvae numerous in all areas; contributing to control of economic species. (Jenkins).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - VERMONT - Reported from few scattered areas in Windsor County. Rapid emergence can be expected through July 15 in infested areas. (MacCollom, July 1). RHODE ISLAND - Single adult collected in North Kingstown, Washington County, July 1. General emergence due. (Cartier, Mathewson). NEW JERSEY - Adult activity increasing. (Ins.-Dis. Newsltr., July 2). OHIO - Adults observed June 29 at Geneva, Ashtabula County, northeast. (Schurr). MICHIGAN - In Battle Creek, Calhoun County, 61 adults taken in one trap, 40 in another. These represent only collections in State and indicate sizable "pocket" in area. (Godlewski, Ring).

ASIATIC GARDEN BEETLE (Maladera castanea) - DELAWARE - Adult catches in blacklight trap increased in Sussex County. (Burbutis, Evans).

BLISTER BEETLES - NEW MEXICO - Large numbers appearing in Grant County. (N. M. Coop. Rpt.).

FOUR-LINED PLANT BUG (Poecilocapsus lineatus) - RHODE ISLAND - Common statewide; swept from fields. (Mathewson, Kerr).

SCIARID MIDGES (Sciaria spp.) - ALABAMA - Continuous damp conditions which have been prevalent throughout Mobile County area for past 2 weeks were ideal for development of myriads of these pests. Leaves on many healthy plants in greenhouses, cold frames and cans suddenly turned yellow following rainy period; small, almost transparent maggots found around roots of unthrifty plants in soil and swarms of adults occurred in damper parts of nurseries, in most instances where green mold formed on saturated peat. (Seibels).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Considerable infestation noted in vicinity of old mounds on 600-acre farm in Barbour County; isolated infestations noted along highway in Chambers County. (McQueen).

CORRECTIONS

CEIR 12(INDEX):35 - Rhinacola forticornis (a fleahopper) should read Rhinacloa forticornis.

CEIR 13(18):455 - CUTWORMS - SOUTH DAKOTA - "Populations of Nephelodes emmedonia in winter wheat ..." should read "Populations of Chorizagrotis auxiliaris in winter wheat ...". Det. by D. M. Weisman.

CEIR 13(27):761 - CONIFER SAWFLIES - WASHINGTON - Neodiprion sp. should read Neodiprion fulviceps complex. Det. by D. G. Fellin.

CEIR 13(27):764 - COCCIDS - FLORIDA - Pulvinaira psidii should read Pulvinaria psidii.

Weather of the week ending July 8 (continued from page 778)

Temperatures averaged below normal over California, Oregon, Nevada, western Arizona, southern Texas and over the northeastern quarter of the Nation. They averaged above normal in the extreme Northwest, in Idaho, Utah and eastern Arizona, and eastward to the Mississippi; also from Louisiana eastward along the Gulf of Mexico. Temperature departures ranged from +7° at spots in Montana, Utah and Oklahoma to -12° at Red Bluff, California. (Summary supplied by U. S. Weather Bureau).

LIGHT TRAP COLLECTIONS

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta | quinq. | Heliothis zea | vires. |
|-----------------------------------|-----------------|----------------|------------------|------------------|-------------------|---------------------|--------|------------------|--------|
| FLORIDA | | | | | | | | | |
| Gainesville 7/2 | | | | 4 | | 1 | | | |
| GEORGIA | | | | | | | | | |
| Tifton 6/27-7/3 | | | | | | 1 | | 3 | 3 |
| ILLINOIS (County) | | | | | | | | | |
| Champaign 6/28-7/4 | 358 | 22 | 331 | 36 | | 1 | | | |
| INDIANA (Counties) | | | | | | | | | |
| Lawrence 6/24-7/2 | 111 | 59 | 100 | 2 | | 4 | 5 | | |
| Tippecanoe 6/28-7/2 | 200 | 6 | 21 | 2 | 1 | | | | |
| Vanderburgh 6/27-7/2 | 15 | 4 | 9 | 5 | | | | | |
| KANSAS | | | | | | | | | |
| Garden City 6/26,28,7/1 | 7 | 11 | 4 | 23 | | | | 2 | |
| Hays 6/29, 7/2 | 1 | 1 | 1 | 8 | | | | | |
| Manhattan 6/29-7/5 | 4 | | 8 | 25 | | | | 1 | |
| Mound Valley 7/1 | | 4 | | 4 | | | | | |
| Wathena 6/28-30 | 4 | 2 | 6 | 9 | | | | 1 | |
| MARYLAND | | | | | | | | | |
| Centreville 6/26-7/2 | 22 | 36 | 55 | 2 | | <u>2</u> | | 2 | |
| MICHIGAN (Counties) | | | | | | | | | |
| Wayne 6/25-7/1 | 8 | 6 | 3 | | | | | | |
| Monroe 6/25-7/1 | 8 | 8 | 6 | | | | | | |
| Washtenaw 6/25-7/1 | 7 | 4 | 3 | | | | | | |
| *Macomb 6/25-7/1 | 13 | 12 | 9 | | | | | | |
| Jackson 6/25-7/1 | 5 | 4 | 2 | | | | | | |
| *Livingston 6/25-7/1 | 17 | 12 | 12 | | | | | | |
| *Kent 6/25-7/1 | 31 | 21 | 11 | | | | | | |
| Newaygo 6/25-7/1 | 11 | 9 | 5 | | | | | | |
| MISSISSIPPI | | | | | | | | | |
| *Stoneville 6/28-7/4 | 97 | 9 | 9 | 51 | | 34 | | 36 | 4 |
| NEBRASKA | | | | | | | | | |
| Bushnell 6/8-14 | 30 | 6 | 61 | | 2 | | | 1 | |
| Bushnell 6/15-23 | 33 | 10 | 27 | 1 | 7 | | | | 1 |
| Kearney 6/18-27 | 31 | 42 | 27 | 7 | 57 | | | 5 | 27 |
| McCook 6/7-14 | 3 | 33 | 7 | | 192 | | 1 | 3 | 3 |
| McCook 6/15-26 | 38 | 137 | 49 | | 77 | 9 | | | 7 |
| North Platte 6/19-25 | 159 | 51 | 40 | 34 | 7 | | 1 | 1 | 18 |
| Ogallala 6/15-21 | 426 | 67 | 105 | | | | | 2 | 6 |
| Ogallala 6/22-27 | 125 | 50 | 30 | 23 | | | | | 1 |
| Scotts Bluff Exp. Sta. 6/18-24 | 156 | 19 | 20 | | | | | | 1 |

* Two traps - Macomb, Livingston, Kent, Stoneville.

(Continued on page 806)

Light Trap Collections (Continued)

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta | Heliothis zea | Heliothis vires. |
|------------------------------|-----------------|----------------|------------------|------------------|-------------------|---------------------|------------------|---------------------|
| NORTH DAKOTA | | | | | | | | |
| Fargo 6/29-7/5 | | 2 | 1 | 2 | | 9 | | |
| Linton 6/29-7/5 | 106 | | 5 | 5 | | 4 | | |
| Bismark 6/29-7/5 | 56 | | 10 | 26 | | | | |
| Bottineau 6/29-7/5 | 16 | | | 2 | | | | |
| Williston 6/29-7/5 | 24 | | 8 | 9 | | | | |
| Bowman 6/29-7/5 | 7 | | 7 | 27 | | | | |
| Trotters 6/29-7/5 | 4 | | 1 | 4 | | 1 | | |
| Emerick 6/29-7/5 | 37 | | | 1 | | 7 | | |
| Pembina 6/25-7/5 | 3 | | | 3 | | 9 | | |
| NEW JERSEY (Counties) | | | | | | | | |
| Cumberland 6/27, 7/1 | 100 | | | | 2 | 6 | | |
| Burlington 6/27, 7/1 | 56 | | | | 4 | | | 1 |
| OHIO | | | | | | | | |
| Wooster 6/28-7/4 | 87 | | 41 | | | 6 | | |
| Marietta 6/28-7/4 | 6 | | 7 | | | 1 | 3 | 6 |
| Columbus 6/28-7/4 | 4 | | 6 | | | 9 | | |
| Fairborn 6/28-7/4 | 19 | | | | | | | |
| SOUTH CAROLINA | | | | | | | | |
| Charleston 7/1-7 | 1 | | | | 17 | | 2 | 2 3 |
| TEXAS | | | | | | | | |
| Waco 6/29-7/5 | 24 | 104 | | 54 | 134 | | | 901 27 |
| WISCONSIN | | | | | | | | |
| Janesville 6/25-7/1 | 398 | | | | | 17 | | |
| Delavan 6/28-7/1 | 67 | | | | | 7 | | |
| Mazomanie 6/26-7/1 | 63 | | 8 | 4 | | 11 | | |
| Middleton 6/26-7/2 | 69 | | 43 | 15 | | 2 | | |
| Madison 6/26-7/2 | 101 | | 55 | 9 | | 1 | | |
| Fox Lake 6/25-7/1 | 147 | | | | | 57 | | |
| Astico 6/25-7/1 | 25 | | | | | 25 | | |
| Wayne 6/25-7/1 | 98 | | | | | 14 | | |
| Theresa 6/25-7/1 | 121 | | | | | 78 | | |
| Nenno 6/25-7/1 | 140 | | | | | 31 | | |
| Waldo 6/25-7/1 | 95 | | 15 | | | 40 | | |
| Cedar Grove 6/25-7/1 | 64 | | 8 | | | 33 | | |
| WYOMING | | | | | | | | |
| Centennial 6/11-17 | 1 | | | | | | | |
| Centennial 6/18-24 | 6 | | 6 | 2 | | | | |

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on March 31, 1963, follow. These reports are based on the identifications received from Federal taxonomists at the U. S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

A WEEVIL (Acalles sp.) in cargo of Cyclamen sp. corms at New York, New York.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in cargo of citrus leaves and in baggage at Miami, Florida.

MEXICAN FRUIT FLY (Anastrepha ludens (Lw.)) 5 times in baggage; 4 times at Laredo, Texas; 1 time at Calexico, California.

A WHITEFLY (Bemisia sp., apparently undescribed, near shinanoensis (Kuw.)) in unknown host in airplane quarters at Honolulu, Hawaii.

A BRUCHID (Callosobruchus sp., probably analis (F.)) (an important pest of stored legume seeds in India) in baggage at New York, New York.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 16 times in stores, mail, quarters, cargo and baggage; 7 times at Honolulu, Hawaii; 2 times at Miami, Florida; and 7 times at New York, New York.

MELON FLY (Dacus cucurbitae Coq.) in stores at San Diego, California.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) in baggage at Honolulu, Hawaii.

A COCCINELLID (Epilachna sp.) (could be E. chrysomelina (F.)), an important cucurbit leaf pest widespread in southern Europe and Africa) in stores at New York, New York.

AN OLETHREUTID MOTH (Matsumuraeses phaseoli (Mats.)) in string beans in stores at New York, New York.

A POTATO WEEVIL (Premnotrypes sp.) 2 times in stores, one time each at Baltimore, Maryland, and Tampa, Florida.

EGYPTIAN COTTONWORM (Prodenia litura (F.)) (general pest in southern Asia and Africa) with air cargo at Honolulu, Hawaii.

A WEEVIL (Rhyssomatus sp.) (an important genus in sweetpotato in the Central American region) in sweetpotato in baggage at New York, New York.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 3 times in cargo at Philadelphia, Pennsylvania.

KHAPRA BEETLE (Trogoderma granarium Everts) 16 times; 3 times in ships' holds, 6 times in stores, and 7 times in cargoes of guar gum, used burlap, fennel seed, gum karaya and polished rice; 2 times at New York, New York; 2 times at Wilmington, North Carolina; 1 time at Baltimore, Maryland; 7 times at Charleston, South Carolina; 1 time at Mobile, Alabama; 2 times at New Orleans, Louisiana; and 1 time at Honolulu, Hawaii.

Survey Method for Grape Root Borer (Vitacea polistiformis polistiformis)
as Used in Arkansas

Prepared by

V. G. Attwood, W. D. Wylie and W. P. Boyer

A survey method for grape root borer has proved successful in determining the extent of adult emergence in Arkansas. The number of larvae in roots cannot, of course, be determined without destroying the vines. The adult moth is often mistaken for a common wasp when seen flying about a vineyard.

A brief account of the life cycle in northwest Arkansas gives the basis for the survey method. The life cycle requires two years. Adults are present in the field from approximately the middle of July to the middle of August. They are most active during the hottest part of the day and may be seen on the wing from about 9 a.m. to 4 p.m. The adult female deposits over 400 eggs, enough for one egg per vine for an entire acre of grapes. The eggs hatch in two weeks. Only about 10 percent of the larvae become established, and these spend 22 months in the roots. The pupal stage lasts four to five weeks. The remaining three to four weeks are required for the adult and egg stages.

One survey method has proved successful. When pupae come to the surface of the soil, about one-third of the pupal case extends above the ground. It is in this position when the adult emerges. After the adult emerges, the empty pupal cases will remain intact. Ninety percent or more of the adults emerge within a one-foot radius of the base of the vine. Searching under the vine for the remaining pupal cases during the last half of July and all of August will reveal the presence of the root borer.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton IN Arkansas DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|--|---|---------------------------|
| A. Pest or pest complex | <u>Boll weevil, bollworm, mites, aphids, plant bugs</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>1,355,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>514 lbs. lints</u> |
| D. Price ^b per unit (lb.) ^c (From CRS) | \$/ | <u>324 season average</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>900,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>895,000</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>40</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>206</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>66.74</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>5.00</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,030,000 lbs.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>13.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>11,635,000</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>333,700</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>25,000</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>11,993,700</u> |
| | | <u>47,000</u> |
| | | <u>125,000</u> |
| Comment: | \$ | <u>12,105,000</u> |

Cotton seed loss \$47,000; cost of bottom insect scouting - \$125,000. These items should be included but did not fit into above outline.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. P. Boyer

Date 2-26-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Rice (Commodity) | IN | Arkansas (State or District) | DURING | 1962 (Year) |
|---|--|----|---------------------------------|---------------------|----------------|
| Grasshoppers, fall armyworm, rice water weevil, rice stink bug, a leaf beetle (<i>Colaspis</i> sp.) | | | | | |
| A. | Pest or pest complex | | | | |
| B. | Number of acres ^a produced (From CRS) | | No. | 422,000 | |
| C. | Average yield per acre ^a (From CRS) | | Units/ | 3,775 lbs. | |
| D. | Price ^b per unit (cwt.) ^c (From CRS) | | \$/ | 5.25 season average | |
| E. | Acres ^a needing control | | No. | 337,600 | |
| F. | Acres ^a treated | | No. | 317,810 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | 3.6 | |
| I. | Loss in yield, units per acre ^a , C x H | | Units/ | 1.35 cwt. | |
| J. | Loss in yield, \$ per acre ^a , D x I | | \$/ | 7.09 | |
| K. | Loss in quality, \$ per acre ^a | | \$/ | 0 | |
| L. | Yield loss for all acres ^a , (E-F) x I | | Units | 26,716 cwt. | |
| M. | Control cost, \$ per acre ^a | | \$/ | 0.85 | |
| N. | Control cost for all acres ^a , F x M | | \$ | 270,138 | |
| O. | Yield loss for all acres ^a , (E-F) x J | | \$ | 140,311 | |
| P. | Quality loss for all acres ^a , (E-F) x K | | \$ | 0 | |
| Q. | Combined control cost and losses, N + O + P | | \$ | 410,449 | |

Comment: Possible quality loss from peckiness in rice, which may be due to rice stink bug activity, is an unknown factor. No quality loss is calculated. Treatment consisted of crop or foliage application, seed treatment and drainage. Per acre costs for all have been averaged.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. P. Boyer

Date 2-26-63

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Department of

ECONOMIC INSECT
REPORT

Edited by

WILLIAM J. GIBSON, JR., Director

RESEARCH AND CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPER counts becoming high in areas of northern Plains and the Midwest; feeding on soybeans, corn and other crops. Adults noted in Illinois, North Dakota and Utah; outbreak continues in latter State. Damage reported in Utah, Minnesota, Wisconsin, Illinois and Alabama. (pp. 813-814). CORN ROOTWORMS causing heavy damage to corn in southern and eastern Nebraska. (p. 814). EUROPEAN CORN BORER populations becoming high in west central Minnesota, with some fields 100 percent infested; could become a problem this season. (p.815). CORN LEAF APHID severe on several hundred acres of barley in areas of Utah. (p. 816). PEA APHID increasing on alfalfa in Colorado and populations high on same crop in Minnesota; buildup has remained longer than normal in Arizona. (p. 817). Considerable ALFALFA WEEVIL larval activity noted in alfalfa in Wyoming; considerable loss occurring to second cutting of alfalfa hay in Weld County, Colorado. (p. 818).

EUROPEAN RED MITE increasing in areas of Wisconsin, Michigan and New York on apples. Various ORCHARD MITES also troublesome in some areas. (p. 820).

BOLL WEEVIL infestations continue relatively light, with increases noted in some areas. BOLLWORMS appearing in greater numbers in more northern Alabama counties; damage in some western Tennessee cotton fields sufficient to justify controls. (p. 829). LYGUS BUGS remain economically important in Arizona cotton, and COTTON FLEAHOPPER high and increasing in several counties, with nymphs destroying squares on growing tips. (p. 830).

Large scale infestation of TENT CATERPILLARS present in Kootenai and Bonner Counties, Idaho; FOREST TENT CATERPILLAR again defoliated several thousand acres of bottomland hardwoods in Louisiana and Texas. (p. 833).

HORN FLY, STABLE FLY and HORSE and DEER FLIES annoying to livestock and humans in several areas of the Nation. (p. 837).

DETECTION

LOCUST LEAF MINER reported for first time from Hancock County, Illinois. (p. 833).

CORRECTIONS and ADDITIONAL NOTES

See pages 839 and 840, respectively.

SPECIAL REPORTS

Quarterly Citrus Insect and Mite Outlook in Florida - July through September. (pp. 822-823).

Status of the Screw-worm in the Southwest. (p. 836).

Reports in this issue are for week ending July 12, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1963

The Weather Bureau's 30-day outlook for the period mid-July to mid-August calls for temperatures to average below seasonal normals over the Middle Atlantic States, the Ohio and Tennessee Valleys, the Pacific Northwest and the northern Rocky Mountain States. Above normal temperatures are predicted for the Southwest, central Plains, gulf coast and Upper Lakes. In areas not specified, near normal averages are in prospect. Rainfall is expected to be subnormal over the southwest quadrant of the Nation, the Upper Lakes and the East Gulf States. Above normal amounts are forecast over the Northwest and from the Appalachian Mountains to the Atlantic coast. Elsewhere in the country, near normal rainfall is anticipated.

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

WEATHER OF THE WEEK ENDING JULY 15

A few thunderstorms occurred along the southern edge of Dixie as a mound of polar continental air pushed farther toward the Gulf. By Wednesday morning, the eastern half of the Nation was clear, cool and comfortable. Early morning temperatures dropped into the 30's in some valleys in the Appalachians in Pennsylvania and low-temperature records were broken at many stations from Michigan to Massachusetts. Afternoon temperatures over the northeastern quarter of the Nation were mostly in the 70's. Some cloudiness and a few isolated afternoon thundershowers occurred along the western edge of the Plains. Some communities in Kansas received from 5 to 10 inches of rain on the 10th and 11th. Low clouds and light rain or drizzle persisted along the northern Pacific coast; southwestern deserts continued hot. As the cool air pushed eastward into the Atlantic, southerly winds brought warm, humid air from the Gulf to replace it. Temperatures at midweek reached the 90's over the Plains and the 70's and 80's over the northeastern quarter of the country. Miles City, Montana, registered 95° on Wednesday. The Southwest continued hot during the entire week. Afternoon temperatures at Needles, California, ranged from 101° on Tuesday to 115° on Sunday, July 14. Blythe, California, registered 96° Thursday night at midnight. Saturday morning, a cold front extended from western Nebraska to Lake Superior. Prefrontal showers occurred from Kansas to Wisconsin. As the front advanced, the showers spread eastward. Areas in Wisconsin, Michigan, Illinois, Indiana and Ohio received from 1 to 2 inches of rain from this storm. The showers continued their eastward movement. By Saturday afternoon, most States from Minnesota to Michigan and southward to the Gulf received rain. By Sunday, rain had fallen over the eastern half of the Nation except that, in Florida, the showers were widely scattered. Precipitation was generally light over the western part of the Nation. An exception was Williston, North Dakota, where 5.93 inches fell. Wide areas in California, Nevada, Oregon, Idaho, Utah and Arizona received no rain or only light sprinkles. Heavy rains fell over parts of Mississippi, Arkansas, Oklahoma, Kansas, Missouri and Iowa. Hail as large as baseballs fell at Hastings, Nebraska. Rainfall over the central and eastern portions of the country was unevenly distributed. Scattered areas received more than 2 inches and nearby stations received less than 1 inch.

Temperatures averaged above normal over a narrow strip along the Pacific coast; also over the eastern slope of the Rocky Mountains and most of the High Plains. They averaged below normal over the western slope of the Rocky Mountains and westward almost to the Pacific coast, over most of the central Plains, eastward to the Atlantic Ocean. Temperature departures ranged from -7° over north central Oregon, -11° at Huntington, West Virginia, and -12° at Raleigh, North Carolina, to +6° at Roswell, New Mexico. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OHIO - Early instars of Melanoplus sp. averaged one per sweep in most southeast area alfalfa; populations do not appear heavy at present. (Lyon). IOWA - Grasshoppers ranged 5-30 per square yard in alfalfa, red clover, and pastures, 10-50 per square yard in fencerows. (Iowa Ins. Inf., July 8). ILLINOIS - Grasshoppers increasing in clover and alfalfa; range first instar to adult, with most first to third instar. Melanoplus spp. ranged 6-24 per square yard in clover and alfalfa in central and west districts. Hoppers still hatching but Melanoplus sanguinipes adults appearing in some sandy areas. Occasional soybean fields show moderate feeding in marginal rows. (Ill. Ins. Rpt.). WISCONSIN - Little change observed in southern part of State; most alfalfa contains at least few small nymphs, ranging from one per sweep in Ashland County to 60 per sweep in few fields in Dane County. Average counts by county as follows: Iowa - 8; Lafayette - 12; Grant - 20; Crawford - 15; Dane - 20; Columbia - 10; Green - 9; Rock - 9; Walworth - 25. Counts in individual fields fluctuate considerably; most fields show noticeable feeding injury despite fact that M. femurrubrum predominates (most in second to fourth instar). Soil reserve field in western Dane County nearly defoliated; adults present. Few Dissosteira carolina adults noted in area. Young nymphs noticeable in corn fields in Portage County and averaged about 40 per square yard in field of peas in Rock County; no damage to peas observed, although crop about a week from harvest. Fewer nymphs noted in Jefferson and Waukesha Counties than in Dane, Green, Rock, or Walworth Counties, but counts up to 40 per square yard in some fields. (Wis. Ins. Sur.). MINNESOTA - Grasshopper infestations expected to be quite scattered and localized; weather has been ideal for egg hatch and development for more than a month. General hatch of M. femurrubrum and M. differentialis occurred throughout State. Scattered but high numbers (100 or more per square yard) of first to third instar M. differentialis found in field margins and roadsides in Lac qui Parle County; moved to corn and soybeans in some areas; heavy leaf feeding noted in marginal rows. In Anoka and Sherburne Counties, first to fourth instar M. femurrubrum ranged 5-45 per square yard; damage by small hoppers very apparent, with movement from dry alfalfa-grass to corn and soybeans evident in high count fields. M. femurrubrum ranged 25-35 per square yard in occasional field in Faribault and Fillmore Counties. Counts low in Kittson County. (Minn. Ins. Rpt.).

NORTH DAKOTA - Nymphal surveys conducted in western counties. Dunn County - ranged 30-50 per square yard on cropland margins; dominant species M. sanguinipes (second to fifth instar), M. bivittatus (fourth and fifth instar). Sheridan County - ranged 6-30 per square yard in field margins; dominant species M. bivittatus and M. packardii (second to fifth instar, mostly fourth and fifth). Ranged up to five per square yard in Renville, Billings, Mountrail, Williams, Divide, and Burke Counties. McKenzie County - averaged 4-5 per square yard on rangeland; dominant species M. sanguinipes, Ageneotettix deorum and Aulocara elliotti (second instar to adult). Golden Valley County - hoppers averaged seven per square yard with high count of 36. Slope and Billings Counties - averaged six per square yard; M. sanguinipes, Aulocara elliotti and Ageneotettix deorum dominant (second to fifth instar). (N. D. Ins. Sur.). NEBRASKA - Grasshoppers as high as 30 per square yard in field margins and ditchbanks in Scotts Bluff County; average 12 per square yard, North Platte River Valley. M. bivittatus, M. differentialis, M. femurrubrum and M. sanguinipes principal species involved. (Hagen). Fourth and fifth instar M. differentialis averaged 12 per square yard in eastern Lancaster County alfalfa. (Bergman). OKLAHOMA - Nymphal surveys continued in five southwestern and four north central counties. Rangeland counts generally below threatening level in Cotton, Comanche, Jackson, and Tillman Counties (southwest); additional survey made in southwestern portion of Beckham County (southwest), where nymphs range 6-14 per square yard, showed hoppers dispersed from hatching beds. In Kay, Logan, Noble, and Payne Counties (north central), grasshoppers ranged less than one to five per square yard at 26 rangeland locations; Ageneotettix deorum, Amphitornus coloradus and M. packardii dominant species. Crop margin counts in same counties ranged one to six per square yard. Ranged 10-20 per square yard in clover pastures checked in Delaware County (northeast). (Okla. Coop. Sur.). ALABAMA - Nymphs of several species

appearing in considerable numbers in De Kalb, Marshall, Cullman, Morgan, and Chilton Counties; feeding on grass, soybeans, cotton, corn, and other crops. (Helms et al.). COLORADO - Several species range three to five per square yard in small area on Parachute Creek, near Grand Valley, Garfield County; some controls being applied on grazing land. (Bulla). UTAH - Winged Cannula pellucida, M. sanguinipes and Trimerotropis sp. frequently noted. Grasshoppers spottedly numerous in "Dixie" area of Washington County; 80 percent winged. (Knowlton). Damaging alfalfa and dry farm wheat in Whites Valley, Box Elder County (Knowlton, Finch); large numbers moving from rangeland in area (Haws, Knowlton). Continue damaging in east Millard and Juab County areas, largely moving from soil bank land to crops. (Knowlton, Rickenbach). Damaging untreated areas near Parowan, Paragonah, Summit, Kanarraville, and Newcastle, Iron County. (Knowlton, Sjoblom). OREGON - Spray program for Cannula pellucida nearing completion in Harney County. During first week of July, 12,000 acres treated in Malheur Wildlife Refuge. (Jackson). CALIFORNIA - Trimerotropis pallidipennis moderate on corn in Hanford, Kings County. (Cal. Coop. Rpt.).

CRICKETS - MINNESOTA - Heavy hatch occurred in western part of State. Counts in ditches and field margins as high as 81 per square yard. (Minn. Ins. Rpt.).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - Larvae caused heavy damage to some corn fields in southern and eastern half of State; majority late larval stages, pupae and adults. D. virgifera adults emerging rapidly in some fields; causing noticeable damage to corn leaves. (Bergman). First D. virgifera adults observed July 1 in Lincoln County; average of ten larvae per plant causing severe damage to untreated, late-planted corn. (Pruess). ILLINOIS - D. longicornis severely infested one of 12 corn fields in central and west districts; D. undecimpunctata howardi light in two other fields. In heavily infested field, 45 percent of plants very obviously stunted; average of 21 larvae, 2 pupae and 1 newly emerged adult in roots and soil about each stunted plant. (Ill. Ins. Rpt.). OHIO - First D. longicornis adults of season observed in Wyandot County, northwest; pupae noted in all corn fields checked; larvae ranged 1-39 per plant. (Blair).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Over 99 percent of population now adult; less than one percent in soil as pupae. General adult feeding decreasing; high percentage of beetles have left maturing oats and wheat, concentrating in corn fields, fencerows, and along roadsides. Heaviest concentrations in reed canary grass, brome, orchard grass, timothy, and quackgrass. Summer adults relatively inactive; migrated to bases of corn leaves, grass clumps and other locations. Only minor injury occurring. Aerial spray program expected to be completed as soon as favorable weather permits. (Castro, Ring). INDIANA - Adults moving into resting areas in hedgerows in northern part of State. (Wilson). OHIO - Farmer and Mark Townships, Defiance County, and Center Township, Williams County, new regulated areas. Numbers of newly emerged adults increasing in Williams County. No more severe feeding expected until larvae of 1964 brood appear. (Porter).

DUSKY SAP BEETLE (Carpophilus lugubris) - MARYLAND - Adults appearing in whorls and tassels of sweet and field corn on Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Abundant on corn in several areas of Kent and Sussex Counties. (Burbutis, Evans).

FLEA BEETLES (Chaetocnema spp.) - NEW YORK - C. denticulata emerged in corn fields in Hudson Valley July 1. (N. Y. Wkly. Rpt.). DELAWARE - C. pulicaria increased slightly on corn throughout State. (Burbutis, Evans).

JAPANESE BEETLE (Popillia japonica) - NEW YORK - Very few found on corn in Hudson Valley July 1-3. (N. Y. Wkly. Rpt.). OHIO - Feeding on silks of field corn in some south central areas; spray program recommended; 14 adults noted on one corn plant. (Crawford, July 2). Infesting corn at Somersset, Perry County (southeast). (Perry).

A SCARAB (Anomala undulata) - INDIANA - Heavy in 50-acre field of corn at Oaktown, Knox County. (Hamilton, Chandler).

WIREWORMS - NEBRASKA - Larvae damaging field of milo in Buffalo County. (Bergman).

A FALSE WIREWORM (Eleodes sp.) - COLORADO - Damaging wheat in Pueblo County. (Haines).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Moths scarce in Hudson Valley fields; larvae in silking corn mostly third to fifth instar; feeding in cavities in stalks and around ear shanks or in tassels of suckers. (N. Y. Wkly. Rpt., July 8). DELAWARE - Most first-generation larvae full grown; few pupae present in early corn and potatoes. Second moth flight underway; 13 collected June 6-11 in Sussex County light trap. (Burbutis, Evans). MARYLAND - Larvae generally light to moderate in sweet and field corn in all sections; infestation ranged 17-53 percent in few early planted fields. Moth numbers in Centerville light trap low compared with corresponding periods a year ago. (U. Md., Ent. Dept.). OHIO - Egg deposition practically complete; third to fifth-stage larvae noted in sweet corn at Wooster, Wayne County (northeast). (Guthrie, Schurr, July 8). Infested numerous sweet corn and few corn fields in southeast; infested 15 of 20 sweet corn plants in a Morgan County field; late-stage larvae tunneled through leaves, stalks and tassels. (Lyon, July 9). ILLINOIS - Development in field corn in central and west districts 11 percent third stage, 28 percent fourth stage, 61 percent fifth stage. (Ill. Ins. Rpt.). IOWA - First pupa of season found July 1 at Ankeny. Major emergence of second-brood moths anticipated about July 20-25, at which time most corn will be favorable for egg laying. (Iowa Ins. Inf.). WISCONSIN - Many larvae examined in Rock County in fourth and fifth stages. (Wis. Ins. Sur.). MINNESOTA - Populations becoming high in west central district, with some fields 100 percent infested; could be a problem this season. Egg laying continues in northern half of State. Generally low in central, south central, southeast and east central districts; generally moderate in southwest district except in northern counties where infestations high. (Minn. Ins. Rpt.). NEBRASKA - Third to fourth-stage larvae feeding in whorls of corn in southeast. (Bergman). ALABAMA - Extremely light in De Kalb County corn. (McQueen).

CORN EARWORM (Heliothis zea) - IDAHO - Infesting field of sweet corn in Parma area, Canyon County. Tasseling just begun in field and approximately 70 percent of stalks infested. (Scott). NEBRASKA - Early planted sweet corn 60 percent infested in Lincoln County. (Pruess). WISCONSIN - Few moths emerged in Arlington area from larvae maintained over winter in outside cages. (Wis. Ins. Sur.). OHIO - No larvae observed in southeast area corn fields; adult flights very low based on blacklight trappings; cool evenings inhibited flights. (Lyon). NEW YORK - No larvae found in Hudson Valley corn. (N. Y. Wkly. Rpt., July 8). ALABAMA - Extremely light infestation noted in corn in De Kalb County. (McQueen). FLORIDA - Infested corn at Monticello, Jefferson County. (Miller, July 5).

STALK BORER (Papaipema nebris) - MARYLAND - Moderate in marginal rows of field corn in sections of Wicomico County. (U. Md., Ent. Dept.). WISCONSIN - Larvae commonly damaging oats in Lafayette County. (Wis. Ins. Sur.). MINNESOTA - Present in marginal rows of corn; counts vary greatly; ranged as high as 95 percent in Watonwan County. (Minn. Ins. Rpt.).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - MARYLAND - Several light to moderate larval infestations occurring in Worcester County field corn. (U. Md., Ent. Dept.). DELAWARE - Infesting sweet corn in area of Sussex County. (Burbutis, Evans).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSISSIPPI - Light on corn in Jefferson Davis County. (Ouzts, July 5).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Extremely light on corn in De Kalb County. (McQueen). FLORIDA - Infested 15 acres of corn at Greenwood, Jackson County (Tipton, June 28) and improved pasture at Jacksonville, Duval County (Josey, July 2).

ARMYWORM (Pseudaletia unipuncta) - WISCONSIN - Moth numbers not unusually high at this time compared with last year, although flights during mid-May at Platteville earlier and heavier than in 1962, while present counts from some areas may indicate delayed flight. Staggered planting dates, drought and other factors may cause reversal of situation reported in CEIR 13(28):782. (Wis. Ins. Sur.).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - NORTH DAKOTA - Heavy infestations prevalent in barley and flax. First symptoms of aster yellows reported in flax. (N. D. Ins. Sur.). MINNESOTA - Counts declining with ripening of small grains. (Minn. Ins. Rpt.).

LEAFHOPPERS - WYOMING - Several species averaged 60 per 100 sweeps in Lincoln County barley fields. (Marks).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Averaged 44 adults and 2 nymphs per 100 sweeps in 18 rice fields checked weekly in Lonoke and Prairie Counties, compared with 58 adults and one nymph previous week. Mating very pronounced during past 2 weeks. Some dispersal from grassy areas to clean areas of rice fields has occurred although no rice heading. (Ark. Ins. Sur.).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Controls applied to 1,000 acres of small grains on drylands in eastern Millard County. Much of infested acreage north of Holden. (Knowlton, Rickenbach).

CHINCH BUG (Blissus leucopterus) - ILLINOIS - Varied zero to 1,000 or more per corn plant in marginal rows in central and eastern districts; some treatments applied. Very few still found in wheat but some still present in oats. (Ill. Ins. Rpt.). NEBRASKA - Adults common in corn in Cass, Lancaster, Sarpy and Saunders Counties. (Bergman). KANSAS - Occasional specimens noted in corn in Republic County, north central; counts low, no damage noted. (Painter, Burkhardt, Peters). ALABAMA - Several heavy infestations of St. Augustine grass observed at residences on Dauphin Island and in Dog River area, Mobile County. (Seibels).

CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Severe on several hundred acres of late barley at Nibley, Providence and other Cache County areas. (Knowlton, Burtenshaw). Severe on several hundred acres of spring barley in Minersville area, Beaver County; controls applied to 600 infested acres in Cedar Valley, Iron County; populations high on barley in several other areas of State. (Knowlton, Eskin, Sjoblom). NEBRASKA - Building up in milo in eastern third of State. (Roselle, Bergman). OKLAHOMA - Light numbers noted in corn, medium in sorghum, and heavy infestations common in Johnson grass in Choctaw County (southeast); heavy in grain sorghum in Mayes County (northeast). (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WYOMING - Averaged 12 per 100 sweeps in barley in Lincoln County. (Marks). MINNESOTA - Counts declined with ripening of small grains. (Minn. Ins. Rpt.).

GREENBUG (Schizaphis graminum) - MINNESOTA - Counts declining with ripening of small grains. (Minn. Ins. Rpt.).

THRIPS - ILLINOIS - Sericothrips variabilis and Frankliniella tritici common on corn, soybeans, clover and alfalfa in central and west districts. Ranged 0-6 per leaflet on soybeans, with 100 percent of plants showing light silvering in some fields; 36 observed on one corn leaf, with many leaves heavily silvered in some fields. (Ill. Ins. Rpt.). MARYLAND - Continue present on corn in all sections; injury noted on young corn in Frederick and Howard Counties. (U. Md., Ent. Dept.).

WHEAT STEM MAGGOT (Meromyza americana) - MICHIGAN - Caused serious injury to some fields of winter wheat in Berrien and Muskegon Counties. (Tatter, Janes).

HESSIAN FLY (Phytophaga destructor) - NORTH DAKOTA - Infested 20 percent of wheat plants in field in McLean County; some tillers completely destroyed. Now in "flax-seed" stage. (N. D. Ins. Sur.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Increasing in corn in Larimer County; damage appearing on fourth and fifth leaves and mites present on top leaves. Injury occurring on lower leaves of corn in Mesa County. (Jenkins, Bulla). Abundant on clover in lawns in Larimer County. (Hoerner).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Buildup has remained longer than normal; just appearing in Yuma County alfalfa. (Ariz. Coop. Sur.). UTAH - Populations low in Washington County alfalfa where predators numerous. (Knowlton, Pease). Controls applied to over 5,000 acres of alfalfa in eastern Millard County. (Knowlton, Rickenbach). Populations moderate in Beaver County. (Knowlton). COLORADO - Increased on alfalfa; counts per 100 sweeps ranged 1,000-3,000 in Mesa and Montrose Counties, 500-2,000 in Larimer and Weld Counties. (Bulla, Jenkins). WYOMING - Average counts per 100 sweeps in alfalfa were 260 in Uinta, 600 in Lincoln and 420 in Teton Counties. (Marks). OKLAHOMA - Continued light to medium (5-10 per sweep) in alfalfa checked in Major County (northwest); none noted in fields surveyed in Choctaw County (southeast). Reported heavy on field peas in Haskell County (east central). (Okla. Coop. Sur.). MISSOURI - Light in alfalfa in southeast area; ranged 2-20 per sweep. (Munson, Thomas, Wood). ILLINOIS - Very light, 0-160 per 100 sweeps, in clover and alfalfa in central and western districts. (Ill. Ins. Rpt.). WISCONSIN - Generally low in alfalfa. (Wis. Ins. Sur.). MINNESOTA - Populations high in alfalfa; average counts per 100 sweeps, by district, as follows: Southwest - 7,376; south central - 4,032; southeast - 2,520; central - 2,900; west central - 1,500; northwest - 300. (Minn. Ins. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ILLINOIS - Averaged 40 per 100 sweeps in a Mason County field; none observed elsewhere in central and western districts. (Ill. Ins. Rpt.). MISSOURI - Moderate to heavy in southeast area alfalfa. Severe damage observed in few fields in extreme southern section of area. (Munson, Thomas, Wood). OKLAHOMA - Light to medium (0-10 per sweep) in alfalfa checked in Choctaw County (southeast) and medium (5-10 per sweep) in Major County (northwest). (Okla. Coop. Sur.). UTAH - Very low in Washington County alfalfa where predators numerous. (Knowlton, Pease). ARIZONA - Ranged 100-150 per 100 sweeps in Yuma County alfalfa. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Counts per 100 sweeps in alfalfa ranged 200-500 in Yuma County and 100-300 in Graham County. (Ariz. Coop. Sur.). WYOMING - Counts per 100 sweeps in alfalfa, by county, were as follows: Uinta - 40 adults and 22 nymphs; Lincoln - 30 adults and 16 nymphs; Teton - 12 adults and 2 nymphs. (Marks). UTAH - Continue numerous in Millard County alfalfa seed fields. (Knowlton et al.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 0.6-5.5 per sweep in alfalfa checked in Choctaw County (southeast). (Okla. Coop. Sur.). MARYLAND - Adults present in most alfalfa and clover in all sections. (U. Md., Ent. Dept.). VERMONT - This species and Adelphocoris sp. ranged 1-2 per sweep on trefoil seed fields. (MacCollom).

GREEN STINK BUG (Acrosternum hilare) - ARKANSAS - Averaged 11 per 100 sweeps in border of field of soybeans near timber in Craighead County. (Ark. Ins. Sur.).

A BURROWING BUG (Cyrtomenus mirabilis) - ALABAMA - Medium in local, isolated field of peanuts in Covington County; probably sucking sap from roots. (Stephenson).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - OHIO - Averaged 1 adult per sweep in Guernsey County, 4 per sweep in Licking County (southeast). Populations higher in central counties. (Lyon).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Increased considerably in certain sections; averaged 1 per sweep in most alfalfa in Dane and southern Columbia Counties; reported high in Washburn, Waukesha, Sauk, Ashland, Taylor and many other central and northern counties. Averaged ten adults and nymphs per sweep in Dane County field. (Wis. Ins. Sur.). ILLINOIS - Adults varied 10-560, and nymphs 0-4,000, per 100 sweeps in clover and alfalfa in central and west districts. (Ill. Ins. Rpt.). MISSOURI - Light to moderate numbers noted feeding on alfalfa in east central area; ranged 3-27 per sweep. (Munson, Thomas, Wood). OHIO - Moderate to heavy in many southeastern area alfalfa fields; adults ranged 275-327 per 50 sweeps in a second-cutting field of alfalfa in Noble County; plants yellowing severely from leafhopper injury and drought. (Lyon). Averaged 226 per 50 sweeps in second-cutting alfalfa in Columbiana County (northeast); most counts averaged 2 per sweep throughout county. (Williams, Miller). VIRGINIA - Adults ranged 10-50 per 100 sweeps in alfalfa in Appomattox County (Woodside, July 9); light in alfalfa in Franklin and Pittsylvania Counties (Tarpley, July 9). MARYLAND - Ranged 1-30 per sweep on alfalfa in central and eastern areas; several fields with typical injury. (U. Md., Ent. Dept.). PENNSYLVANIA - Averaged 20 per 10 sweeps on alfalfa in south central area and in Huntingdon County. (Pepper, Udine, July 8). VERMONT - Ranged 1-2 per sweep in alfalfa and trefoil. (MacCollom).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Adults still numerous in alfalfa; counts per 100 sweeps ranged 500-700 in Yuma County, 40-50 in Graham County. Light in Pinal County, with heavy buildup expected prior to cutting. Counts also high in Maricopa County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - WYOMING - Considerable larval activity noted in alfalfa in Uinta, Lincoln and Teton Counties. Adult and larval counts, respectively, per 100 sweeps by county as follows: Uinta - 60 and 375; Lincoln - 40 and 760; Teton - 50 and 725. (Marks). UTAH - Controls applied in early spring against adults excellent in Iron County, often poor in Cache County. (Knowlton). COLORADO - Larvae and adults active on terminal growth of alfalfa in Weld County; considerable loss occurring in second cutting of hay. (Titensor). ARKANSAS - Specimens tentatively determined as this pest from Crittenden County in CEIR 13 (25):670, now positively determined as *H. postica*. (Ark. Ins. Sur.). OHIO - Larval, pupal and adult numbers low in second-cutting alfalfa in Noble County (southeast); many pupae collected by hand; averaged 5 adults and 6 larvae per 50 sweeps. (Lyon). Averaged 5 larvae and 1 adult per 50 sweeps in Columbiana County (northeast). (Williams, Miller). VIRGINIA - Larvae per 100 sweeps ranged 0-4 (average 3) in alfalfa in Campbell County, 0-25 (average 11) in Appomattox County, and none found in several fields around Steeles Tavern, Augusta County (Woodside, July 8-9); averaged 12 per 100 sweeps in one Franklin County field and 20 in a Pittsylvania County field. (Tarpley, July 9). MARYLAND - Larval populations below one per sweep on most alfalfa in all sections. (U. Md., Ent. Dept.). PENNSYLVANIA - Feeding along edges of new alfalfa seedlings in Susquehanna County; 50 percent of leaves gone in 10-foot strip. (Gesell). VERMONT - Larvae declining in Bennington County; 2-3 third and fourth-stage larvae per 25 sweeps. (MacCollom).

BEAN LEAF BEETLE (*Ceratomya trifurcata*) - MARYLAND - Adults continue to cause conspicuous foliage injury to soybeans on Eastern Shore. (U. Md., Ent. Dept.). ILLINOIS - Varied 0-80 (average about 28) per 100 feet of row in soybeans in central and west districts. (Ill. Ins. Rpt.). MISSOURI - This species and *Colaspis* spp. light and feeding on soybeans in southwest area; adults ranged 0-3 per foot of row. (Munson, Thomas, Wood). ARKANSAS - Small numbers found in most soybeans, but no damage reported. (Ark. Ins. Sur.). ALABAMA - Feeding very light on soybeans, lespedeza and white clover in Cullman and Morgan Counties; collected along roadsides in Lee County. (Barwood, Davis et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Adults and larvae causing moderate to heavy injury to 2 large soybean fields in Worcester County. (U. Md., Ent. Dept.). INDIANA - Feeding on soybeans in 3 fields at Versailles, Ripley County, southeast. (Matthew).

LEAF BEETLES - OHIO - Colaspis sp. adults averaged 12 per 50 sweeps in field of alfalfa in Morgan County (southeast); no significant damage noted in adjacent corn. (Lyon). IDAHO - Monoxia sp., probably angularis, extremely abundant on native vegetation, particularly saltbush (Atriplex sp.), in north central Owyhee County; adults averaged 25 per sweep. (Gittins).

BLISTER BEETLES - IOWA - Defoliating soybeans in Clarke County. (Iowa Ins. Inf., July 8). OKLAHOMA - Light numbers of several species noted on soybeans in Okfuskee County (central). (Okla. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Heavy (2-10 per sweep) in alfalfa surveyed in Major County (northwest); also reported heavy in Ellis County alfalfa. (Okla. Coop. Sur.). MISSOURI - Larvae light in alfalfa in southeast area; ranged 0-6 per sweep. (Munson, Thomas, Wood). IOWA - Feeding on corn in Decatur County; also present on soybeans in Ringgold County. (Iowa Ins. Inf., July 8).

ALFALFA WEBWORM (Loxostege commixtalis) - COLORADO - Averaged 20 adults per night in light trap at Rocky Ford, Otero County. (Schweissing).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae increasing in Yuma County alfalfa; large adult flights noted in or near alfalfa. (Ariz. Coop. Sur.). MARYLAND - Larvae light to moderate on alfalfa in Frederick County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Light to moderate on alfalfa, red clover and soybeans in several areas. (U. Md., Ent. Dept.). ARKANSAS - Small numbers found in most soybeans; no reports of damage received; none found in fields checked in Lonoke, Lee and Craighead Counties. (Ark. Ins. Sur.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Continued light in peanuts checked in Bryan County (south central). (Okla. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - OHIO - Larvae noted in cut alfalfa near Sidney, Shelby County (west central). (Lutz, Holdsworth).

CUTWORMS - SOUTH CAROLINA - Small larvae of unspecified species moderate on peanuts in Sumter County. (Nettles et al, July 8). FLORIDA - Feltia subterranea infesting peanuts at Jay, Santa Rosa County. (Boyd, July 3).

SPIDER MITES - MARYLAND - Tetranychus spp. appearing in some soybean fields in Talbot and Wicomico Counties. (U. Md., Ent. Dept.).

BEEB WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Larvae feeding on weeds and causing some stripping of flax in fields in Barnes County. (N. D. Ins. Sur.).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - VERMONT - Emergence underway; first controls recommended by July 13 and continued on 10 to 12-day intervals through third week of August. Emergence can be expected to increase during next 2 weeks. (MacCollom). RHODE ISLAND - Adults active in Exeter; appearing in traps July 2-5. (Mathewson). CONNECTICUT - Emergence increasing; adults noted in all emergence cages. Heavy maggot activity on early ripening varieties at New Haven and egg laying believed underway. Activity usually peaks during last 2 weeks of July; protection urged on early maturing varieties especially. (Savos). NEW JERSEY - First larvae of season found in untreated field of blueberries July 3. Adult activity remains quite high; 438 trapped in abandoned field compared with 373 in 1962 and 187 in 1961. (Ins.-Dis. Newsltr., July 9). NEW YORK - Emergence at Poughkeepsie heavy throughout week ending July 8. Male-female ratio indicates peak not yet reached. Emergence continues high in Niagara County. Emergence in eastern area extremely heavy this year; cages in same location and seeding material from same source as in 1962 when emergence was scant. Total of 1,879 flies caught on July 2 from 16 cages; this is largest number to July 8. While it is early for peak, it may prove to be that peak arrived. Sex ratio switched to predominantly males for first time July 4. (N. Y. Wkly. Rpt.). MICHIGAN - Larval trails appearing in early varieties; only moderate number of adults observed in fruit-growing areas to July 12. (Carpenter, Mullett). Adults ordinarily abundant July 12; lack of rain considered responsible. (Dowdy). WISCONSIN - First adults trapped in Door County July 2. Ammonia bait trap at Kenosha during period July 2-8 yielded one specimen July 1. Two traps at Madison yielded 10 specimens in 1 trap and 14 in other during same period. (Wis. Ins. Sur.). MINNESOTA - Emergence continues but peak probably not reached; protection essential. First adult collection at La Crescent July 1, at Minnetonka July 2 and at Rochester July 8; ovipositing began about week after emergence. (Minn. Ins. Rpt.).

ORCHARD MITES - PENNSYLVANIA - Panonychus ulmi and Tetranychus telarius in centers of plum and prune trees in Erie County (Adams, July 2); not serious on apple in south central area (Pepper, July 8). MARYLAND - Undetermined spider mites heavy on peaches at Salisbury, Wicomico County, and on raspberries at Fairland, Montgomery County. (U. Md., Ent. Dept.). MICHIGAN - T. telarius continues noticeable buildup in southwestern area. (Carpenter, Tatter, Mullett). MISSOURI - All areas of State report varying degrees of infestations by spider mites. Mixed populations occur in southeast and could become very serious in near future. Recurring infestations of T. telarius in northwest, but growers keeping them under control. T. telarius ranged 8-10 per leaf in west central area on July 1 but brought under control. Very few mites noted in central area; probably due to efficient control programs. (Wkly. Rpt. Fr. Grs., July 10). COLORADO - T. telarius appearing on foliage of apple and pear trees in Delta and Mesa Counties; counts ranged 2-3 per leaf in Delta County. (Bulla). UTAH - Eriophyes pyri severe in some home orchards at Logan, Cache County, and Levan, Juab County. (Knowlton). IDAHO - Damage by E. pyri evident on untreated apple and pear trees throughout much of State. (Bechtolt). CALIFORNIA - Nymphs and adults of Bryobia brioculcus heavy on peach trees locally in Riverside County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - VERMONT - Continues heavy in many blocks. (MacCollom, July 8). Populations subsiding in most areas by July 15. (MacCollom). NEW YORK - Building up slowly in Niagara County. Most orchards show good control in Orleans County; occasionally building up in some orchards. Developmental temperature units in eastern area reached 1,194 on June 17 and 1,222 on June 18; peak populations expected at 2 a.m. July 8. Through June 30, total was 1,575. (N. Y. Wkly. Rpt.). WISCONSIN - Increased in Door County; some controls necessary especially on Red Delicious apples. (Wis. Ins. Sur.). MICHIGAN - Continuing noticeable buildup in southwestern area especially on Delicious apple trees. Relatively light in northwestern Lower Peninsula. (Carpenter, Tatter, Mullett). CONNECTICUT - This species and Tetranychus telarius stable in some orchards and increasing in others; rapid increase expected if temperatures are favorable. (Savos).

APPLE APHID (Aphis pomi) - VERMONT - Frequently observed on suckers and terminal growth. (MacCollom, July 8). CONNECTICUT - Presently most important pest on apples. Generally under control over most of State, but buildup can develop rapidly on terminals. (Savos). NEW YORK - Buildup beginning in Cayuga-Onondaga-Oswego County area. (N. Y. Wkly. Rpt., July 8). WISCONSIN - Increased in nearly all orchards in Door County to point of requiring controls. (Wis. Ins. Sur.). UTAH - Numerous in home orchard at Logan. (Knowlton, July 8).

PEAR PSYLLA (Psylla pyricola) - NEW YORK - Buildup of nymphs noted in Cayuga-Onondaga-Oswego County area. (N. Y. Wkly. Rpt., July 8).

APPLE MEALYBUG (Phenacoccus aceris) - VERMONT - Adults on trunks and ovipositing; no crawlers observed yet on foliage. (MacCollom, July 8).

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Heavy on apple trees and on soil surface in Watsonville, Santa Cruz County, on prunes in Hollister, San Benito County; very heavy on walnuts in Los Molinos, Tehama County. (Cal. Coop. Rpt.).

CODLING MOTH (Carpocapsa pomonella) - VERMONT - Activity declining rapidly July 8. Entries noticeable in unsprayed blocks. (MacCollom). CONNECTICUT - Some larval injury on untreated trees at Niantic; first activity report of year in State. (Savos). NEW YORK - Emergence appears over in Niagara County; larger first-brood larvae now leaving fruit. Flight at low level, but larval activity in fruit becoming more evident in eastern area. (N. Y. Wkly. Rpt., July 8). OHIO - Larvae abundant in apples in unsprayed home orchard in Washington County; most larvae near seeds of apple. (Lyon). MISSOURI - Few new entries still found in southeast; newly hatched larvae attacking fruit in central area July 8. (Wkly. Rpt. Fr. Grs.). WISCONSIN - Pupating of first brood noted at Gays Mills; few adults continue to be caught in blacklight traps. During period July 2-8: Two traps at Gays Mills yielded 1 moth July 7; trap at Madison yielded 2 on July 2, one on July 4, five on July 5, two on July 7; trap at Middleton yielded 4 on July 4, two on July 5, one on July 8. (Wis. Ins. Sur.). MICHIGAN - Some larval entries still appearing and few full-grown larvae leaving fruit in southwest. (Tatter, Carpenter).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - NEW YORK - Large numbers of adults coming to bait traps in eastern area. (N. Y. Wkly. Rpt., July 8). WISCONSIN - Two traps at Gays Mills during period July 2-8 yielded 7 specimens in one trap and 47 in other trap. (Wis. Ins. Sur.). IDAHO - Common to abundant in Moscow area with emergence becoming general. (Ferguson, Manis).

OBLIQUE-BANDED LEAF ROLLER (Archips rosaceanus) - OREGON - Adults numerous in Willamette Valley blacklight trap collections. (Goeden).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - NEW YORK - First pupae found in Clinton County July 2 at point where larvae fed. (N. Y. Wkly. Rpt.). WISCONSIN - Adults of second brood observed in Door County since July 8; ten specimens collected in trap at Gays Mills during period July 2-8. (Wis. Ins. Sur.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - RHODE ISLAND - Tip damage evident on peach in Riverside, Providence County. (Mathewson). CONNECTICUT - One old tip injury noted on untreated peach at New Haven; this pest continues scarce in peach orchards of State. (Savos). MARYLAND - Larvae infesting ripening peaches at Boonesboro, Washington County. (U. Md., Ent. Dept.). MICHIGAN - Twig injury by first brood relatively light; protection needed now to harvest. (Carpenter).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Adults still emerging from caged peach wood collected last April in Vincennes area, Knox County. (Hamilton, July 8).

PEACH TREE BORER (Sanninoidea exitiosa) - IDAHO - Causing minor damage in orchard near Parma. (Bechtolt). COLORADO - Emerged week of July 5 in Mesa County; controls urged. (Bulla). MICHIGAN - Considerable emergence occurred week ending July 12 in southwestern fruit-growing areas. (Carpenter).

A LEAF BLOTCH MINER (Lithocolletes crataegella) - NEW YORK - Several mines found in orchard in Clinton County; some larvae entered pupal stage and few others with pupal cases thrust through undersides of leaves, indicating some flight. (N. Y. Wkly. Rpt., July 8).

LOCUST LEAF MINER (Xenochalepus dorsalis) - OHIO - Moderately damaged several apple trees in home orchard in Washington County; 80 percent of leaves with feeding marks, with 10-15 percent skeletonized. Black locust trees adjacent to orchard; adult populations declining rapidly. (Lyon).

PLUM CURCULIO (Conotrachelus nenuphar) - GEORGIA - Has been very light in peach crop to July 6; practically absent in some orchards at Ft. Valley. (Snapp).

PEAR-SLUG (Caliroa cerasi) - OREGON - Attacking cherry, pear and quince in Willamette Valley; controls necessary. (Goeden). UTAH - Damaging sweet cherry, pear and plum foliage in number of Davis, Salt Lake, Box Elder and Cache County orchards. (Knowlton, July 8).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Considerable number of grubs appearing in young pecans under isolated trees in Bullock and Henry Counties. (Murphy, Buttram). OKLAHOMA - Heavy, unconfirmed infestations, reported in native pecans in Hawkins community, Wagoner County, east central; this is extremely early for this pest in that area of State. (Okla. Coop. Sur.).

FILBERTWORM (Melissopus latiferraenus) - OREGON - First emergence noted July 6 in Lane County. (Tinker).

A LEAF ROLLER MOTH (Archips rosana) - OREGON - Adults of this filbert pest abundant in Willamette Valley blacklight collections. (Larson).

A FILBERT APHID (Myzocallis coryli) - OREGON - Abundant on filbert leaves in many Willamette Valley orchards. (Jones).

PECAN LEAFROLL MITE (Aceria caryae) - OKLAHOMA - Causing localized damage to pecans at Stillwater, Bristow and Tulsa, north central and east central areas. (Okla. Coop. Sur.).

Quarterly Citrus Insect and Mite Outlook in Florida - July through September

This outlook is based on the assumption that weather beyond the period of the current U. S. Weather Bureau's 30-day outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect Situation in Florida" usually given twice each month.

Effects of the December 1962 freeze were so great that the pest populations, except for citrus rust mite (Phyllocoptruta oleivora), are still quite different in groves that were defoliated. This is true, but to a lesser extent, for trees that have now attained a full canopy of healthy leaves.

In Freeze-damaged Groves - CITRUS RUST MITE (Phyllocoptruta oleivora) will remain generally high through July and August with some scattered, high infestations in September. TEXAS CITRUS MITE (Eutetranychus banksi), CITRUS RED MITE (Panonychus citri) and WHITEFLIES will be below average in most groves. A few groves will develop heavy infestations in August and September. SCALE INSECTS will increase from current low levels during July and August, but few infestations will be important.

In Undamaged Groves - CITRUS RUST MITE will be near normal high level for July and August, then drop into low range in September. About 40 percent of groves will have moderate or heavy infestations. TEXAS CITRUS MITE will subside in July and drop to low level in August. CITRUS RED MITE will be important only in scattered groves. BLACK SCALE (Saissetia oleae) will continue above average until mid-August. GLOVER SCALE (Lepidosaphes gloverii) will be above normal abundance. About 10 percent of groves will have heavy infestations in the interior of trees. CHAFF SCALE (Parlatoria pergandii) will continue above normal but no further increase until September. YELLOW SCALE (Aonidiella citrina) may become unusually numerous on leaves and fruit in a few groves. WHITEFLIES will be normally abundant through July. MEALYBUGS will soon drop to low level and remain low. FLORIDA RED SCALE (Chrysomphalus aonidium) will remain at very low level in all areas. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Moderate on 2,250 sweet orange trees at Adamsville, Hillsborough County. (Hale, Fuller, July 8).

FERN SCALE (Pinnaspis aspidistrae) - FLORIDA - Light to moderate on sweet orange at 2 locations at Orsino, Brevard County. (Levan, July 2).

A SOFT SCALE (Coccus elongatus) - FLORIDA - Moderate on 18,000 sweet orange trees at Balm, Hillsborough County. (Custead, June 28).

MITES - ARIZONA - Tetranychus spp. and Brevipalpus spp. causing twig and fruit scars, along with leaf drop, in citrus groves where treatments delayed in Yuma County. (Ariz. Coop. Sur.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Light in garden grapes in Safford, Graham County; infestations continue high in Maricopa County. (Ariz. Coop. Sur.). UTAH - Becoming prominent again in vineyard at La Verkin, Washington County, after several years of almost complete control. (Knowlton, Huber).

GRAPE BERRY MOTH (Paralobesia viteana) - MISSOURI - Adults now emerged; continued controls recommended. (Wkly. Rpt. Fr. Grs., July 10). MICHIGAN - Egg laying for second brood underway in Van Buren County; second brood expected to spread. (Carpenter, Tatter).

GRAPE ROOT BORER (Vitacea polistiformis) - MISSOURI - First adults of season noted in Rolla area July 8. (Wkly. Rpt. Fr. Grs.).

A GALL MIDGE (Cecidomyia viticola) - VIRGINIA - Heavy on grape foliage at location in Cumberland, Cumberland County. (Tarpley, Seay, June 21).

CITRUS FLAT MITE (Brevipalpus lewisi) - CALIFORNIA - Medium on grapevines in Holtville, Imperial County. (Cal. Coop. Rpt.).

GRAPE ERINEUM MITE (Eriophyes vitis) - CALIFORNIA - Medium on grapevines in Big Bar, Trinity County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - NEW JERSEY - Moving into blueberry fields located near pastures. (Ins.-Dis. Newsltr., July 9). MARYLAND - Adults injurious to grape, peach and plum in most sections, especially in gardens. (U. Md., Ent. Dept.). VIRGINIA - Medium to severe on grape in section of Lunenburg County. (Powers, July 11).

CURRENT FRUIT FLY (Epochra canadensis) - UTAH - Observed in black currants at Willard, Box Elder County. (Knowlton, July 8).

PAPAYA FRUIT FLY (Toxotrypana curvicauda) - FLORIDA - Collected in Steiner trap in mango at Miami, Dade County. (Brewton, July 1).

LEAF ROLLER MOTHS (Sparganothis spp.) - NEW JERSEY - Nearing peak activity on early drawn cranberry bogs; where these moths a problem, spraying should begin now on early drawn bogs. (Ins.-Dis. Newsltr., July 9).

CHERRY FRUITWORM (Grapholitha packardi) - OHIO - Pupating in blueberries at Wooster, Wayne County, and in Ashtabula County. (Still).

GREEN SHIELD SCALE (Pulvinaria psidii) - FLORIDA - Moderate on 25 lychee trees at Miami, Dade County. (Brown, July 2).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MARYLAND - Larvae continue feeding on unprotected tomatoes in Dorchester and Worcester Counties. (U. Md., Ent. Dept.). VIRGINIA - Leaving harvested potato fields on Eastern Shore and damaging some tomatoes, eggplants and young peppers. (Hofmaster, July 9). MICHIGAN - Larval feeding injury much heavier than usual in major potato-growing area of Lower Peninsula; adults, eggs and larvae present. Better than average controls necessary this season to keep injury at low level. (Janes, Wells, Smith, Bloomer). COLORADO - Causing considerable foliage damage in some late potato fields in Weld County. (Berry, Cress, Titensor). IDAHO - Abundant and general on potatoes throughout Idaho Falls area; predominantly in early larval stages. (Kohl).

POTATO FLEA BEETLE (Epitrix cucumeris) - NEW JERSEY - Second brood present in all potato fields checked in Shiloh area, Cumberland County; caused considerable damage in 2 fields. (Ins.-Dis. Newsltr., July 9). DELAWARE - Adults very abundant in some potato fields in New Castle and Kent Counties. (Burbutis, Evans).

POTATO PSYLLID (Paratrioza cockerelli) - NEBRASKA - Routine surveys in 9 areas in Scotts Bluff County showed 2 areas contained 4 and 16 adults per 100 sweeps respectively on Lycium halimifolium June 11. Populations at 8 stops June 24 ranged 1-58 per 100 sweeps on L. halimifolium, early potatoes and cull piles. July 8 populations at 6 stops ranged 1-16 per 100 sweeps on L. halimifolium, early potatoes and cull piles. (Bergman). COLORADO - Not found in Weld County. Considerable variation occurs in populations in San Luis Valley with counts of 0-1 per 200 sweeps made. (Jenkins).

POTATO APHID (Macrosiphum euphorbiae) - MARYLAND - Moderate on commercial potatoes at Public Landing, Worcester County. (U. Md., Ent. Dept.). COLORADO - One colony found in 20 fields in San Luis Valley. (Jenkins).

GREEN PEACH APHID (Myzus persicae) - NEW JERSEY - Very low numbers found on older leaves in 6 potato fields examined in Shiloh area, Cumberland County. (Ins.-Dis. Newsltr., July 9). DELAWARE - Remains very scarce on most peppers in Kent and Sussex Counties. (Burbutis, Evans). MARYLAND - Generally light on peppers in Worcester County. (U. Md., Ent. Dept.). COLORADO - Increasing on late potatoes in Weld County; counts up to 32 per 100 leaves made. (Berry, Cress).

APHIDS - VIRGINIA - Heavy on tomatoes at location in Blacksburg, Montgomery County. (Tarpley, July 8). NEW YORK - Most potato growers used 2 sprays for aphid control in Suffolk County; Myzus persicae and Macrosiphum euphorbiae present. (N.Y. Wkly. Rpt., July 8). RHODE ISLAND - M. persicae and M. euphorbiae increasing very slowly in garden in Kingston, Washington County. (Kerr).

Potato Aphids in Maine - Except for early in week, overall aphid infestations increased at normal rate on foliage of untreated potatoes at Presque Isle and vicinity, Aroostook County. Percentage of infested plants (by 3-leaf method) doubled or tripled. In commercial plantings, percentages ranged 10-82 depending upon location and time of planting. General level of infestation much greater at this time than in 1962 and somewhat higher than in 1961. BUCKTHORN APHID (Aphis nasturtii) and POTATO APHID (Macrosiphum euphorbiae) predominate with only traces of GREEN PEACH APHID (Myzus persicae) and FOXGLOVE APHID (Acyrtosiphon solani) present. (Shands et al.).

HORNWORMS (Protoparce spp.) - DELAWARE - First feeding injury noted in small tomato planting in western Kent County. (Burbutis, Evans). MISSOURI - Numerous on tomatoes in Farmington area. (Wkly. Rpt. Fr. Grs., July 10). WISCONSIN - Adult P. quinquemaculata collected in blacklight traps in Mazomanie and Platteville. (Wis. Ins. Sur.).

A WOOLLYBEAR (Diacrisia sp.) - COLORADO - Eggs numerous on potato plants in San Luis Valley. (Jenkins).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Many egg-laying punctures observed on peppers in Cohansey area, Salem County. (Ins.-Dis. Newsltr., July 9).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - WISCONSIN - Moderate numbers feeding and mating in Dane County in field of commercial squash; several fields of commercial cucumbers required treatments in Green Lake and Walworth Counties. (Wis. Ins. Sur.). OHIO - Caused moderate damage on cucumber plants near Hebron, Licking County; 4-5 adults per leaf on few plants, generally moderate to heavy. (Lyon). MARYLAND - Adults feeding heavily on garden squash at Cambridge, Dorchester County. (U. Md., Ent. Dept.). DELAWARE - This species and Diabrotica undecimpunctata howardi present to fairly common on cucumbers, squash and melons in areas of New Castle and Kent Counties. (Burbutis, Evans). RHODE ISLAND - Active in cucurbits in garden in East Providence, Providence County; probably seasonally abundant statewide. (Mathewson).

SQUASH VINE BORER (Melittia cucurbitae) - VERMONT - Controls recommended. (MacCollom, July 8).

SQUASH BUG (Anasa tristis) - IOWA - Adults abundant on squash and melons in central area. (Iowa Ins. Inf., July 8). OKLAHOMA - Medium on pumpkin and squash in Kingfisher County. (Okla. Coop. Sur.). DELAWARE - Present on squash in New Castle County and on melons in Sussex County. (Burbutis, Evans).

IMPORTED CABBAGEWORM (Pieris rapae) - MARYLAND - Larvae heavy on cabbage at Ingleside, Queen Annes County, and on kale at Cambridge, Dorchester County. (U. Md., Ent. Dept.). PENNSYLVANIA - Infesting cabbage plants set out 2 weeks previously in Erie County. (Adams, July 3). NEW YORK - Adults active and ovipositing; no larvae noted in Canandaigua, Ontario County, to July 3. (N.Y. Wkly. Rpt.). RHODE ISLAND - Numerous on kohlrabi in East Providence, Providence County, and on cabbage in Barrington, Bristol County. (Mathewson). VERMONT - Becoming prevalent in home gardens. (MacCollom, July 8).

CABBAGE LOOPER (Trichoplusia ni) - VERMONT - Becoming prevalent in home gardens. (MacCollom, July 8). NEW YORK - First adult of season trapped in Hudson Valley July 5. (N.Y. Wkly. Rpt.). VIRGINIA - Building up on trellised tomatoes on Eastern Shore; insecticides not very effective. Hot, dry weather extremely favorable. (Hofmaster, July 9).

DIAMONDBACK MOTH (Plutella maculipennis) - VIRGINIA - Rather numerous on localized planting of greens on Eastern Shore. (Hofmaster, July 9). PENNSYLVANIA - Infesting cabbage plants in Erie County set out 2 weeks previously. (Adams, July 3).

CABBAGE MAGGOT (Hyemlya brassicae) - CALIFORNIA - Larvae heavy on radish roots in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.). WISCONSIN - Severely damaged untreated cabbage in Lincoln County. (Wis. Ins. Sur.). NEW YORK - Caused considerable trouble on farm to cauliflower in Oswego County. (N.Y. Wkly. Rpt., July 8). VIRGINIA - Heavy on roots of cabbage in home garden in Abingdon, Washington County. (Groseclose, July 3).

CABBAGE APHID (Brevicoryne brassicae) - PENNSYLVANIA - Infesting 3 percent of cabbage plants locally in Erie County. (Adams, July 3).

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Damage conspicuous in many home gardens in Salt Lake City and Logan areas. (Knowlton, July 8). COLORADO - Adults ovipositing; some larvae noted on beans in Montrose County. Populations low in fields checked. (Bulla). MICHIGAN - Heavy on red kidney beans in Montcalm County. Ovipositing in Huron County; controls underway. Moderate to heavy in Grand Traverse County. (Janes, Rapes, Mullett). OHIO - Severe damage noted on garden beans at many home gardens in southeast. Plants infested with second through fourth instars and pupae. No new adults emerged. Many plants 60-98 percent skeletonized; some leaves contained 6-8 larvae. (Lyon). DELAWARE - Continues common in several bean fields throughout State. (Burbutis, Evans). MARYLAND - Larvae causing heavy damage to unprotected garden lima beans

in Wicomico and Dorchester Counties. (U. Md., Ent. Dept.). VIRGINIA - More numerous but easily controlled on Eastern Shore. (Hofmaster, July 9). MISSISSIPPI - Ranged light to heavy in Forrest County on beans July 5; controls applied. Now light. (Ouzts).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adults causing moderate foliage injury to snap and lima beans. (U. Md., Ent. Dept.).

A FALSE WIREWORM (Eleodes sp.) - COLORADO - Damaging beans in Pueblo County soon after plants emerge from soil. (Haines, Hantsbarger).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Medium on lima beans in Costa Mesa, Orange County. (Cal. Coop. Rpt.). NEW JERSEY - Numbers have not increased significantly during recent cool weather. (Ins.-Dis. Newsltr., July 9).

ONION MAGGOT (Hylemya antiqua) - MINNESOTA - Increasing in Hollandale area. (Minn. Ins. Rpt.). WISCONSIN - Caused some concern to onion growers in Shawano County. (Wis. Ins. Sur.).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 15-20 per onion plant in Delta County; numbers very high in Otero County. (Bulla, Schweissing).

ASPARAGUS BEETLE (Crioceris asparagi) - MARYLAND - Adults moderate on asparagus foliage at Cambridge, Dorchester County. (U. Md., Ent. Dept.).

BEEB WEBWORM (Loxostege sticticalis) - COLORADO - Caused considerable damage to foliage of sugar beets in Weld County; damage appearing in Mesa County. (Titensor, Berry, Bulla).

GOLDEN TORTOISE BEETLE (Metriona bicolor) - ALABAMA - Feeding on sweetpotatoes in Lee County. Agroiconota bivittata, along with several species of fleahoppers, caused light to considerable damage to leaves of sweetpotatoes in Cullman County. (Barwood et al.).

CARROT WEEVIL (Listronotus oregonensis) - MICHIGAN - Pupating in soil of infested celery field in Kalamazoo County. (Wells).

TOMATO FRUITWORM (Heliothis zea) - ARKANSAS - Pest of okra in Lincoln County. (Ark. Ins. Sur.).

A PYRALID MOTH - RHODE ISLAND - Larvae causing rapid and extensive damage to stand of mint in Barrington, Bristol County. (Mathewson).

RASPBERRY CANE BORER (Oberea bimaculata) - VERMONT - Active in Burlington area, Chittenden County. (MacCollom, July 8). RHODE ISLAND - Damaging raspberry canes in Riverside, Providence County. (Mathewson).

STALK BORER (Papaipema nebris) - NEW YORK - Several canes of current growth of red raspberry infested in Clinton County. (N.Y. Wkly. Rpt., July 8).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Counts remain generally high on lima beans in Rock County and about 1 per plant on lima beans in southern Columbia County; other acreages in latter county required treatment. Snap beans treated in Portage County. Relatively high numbers on potatoes in Walworth County. Averaged 10 per 10 sweeps on planting of mint in Walworth County. (Wis. Ins. Sur.). MARYLAND - Heavy on large garden planting of lima beans at Cambridge, Dorchester County. (U. Md., Ent. Dept.). DELAWARE - Numerous on tomatoes, potatoes and beans throughout State. (Burbutis, Evans). NEW JERSEY - Adults and nymphs present in one of 6 potato fields checked in Shiloh area, Cumberland County, and causing damage. (Ins.-Dis. Newsltr., July 9).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MICHIGAN - Continues moderately abundant in major muck areas but aster yellows not caused widespread damage. Controls appear quite effective generally; 1 percent yellows infection on celery reported from Ottawa County. (Wells, Hoffman, Drost). WISCONSIN - Averaged 50 per 10 sweeps in planting of mint in Walworth County. (Wis. Ins. Sur.). MINNESOTA - Increasing but not causing apparent virus problem yet. (Minn. Ins. Rpt.). COLORADO - Appearing in light trap at Rocky Ford in numbers of 400 to 1,200 per night. (Schweissing).

LYGUS BUGS (Lygus spp.) - IDAHO - Mainly L. elisus, numerous in carrot seed fields in southwestern area. Numbers on second order, full flowering umbels, increased from 13 to 29 per 10 umbels during week ending July 12. All stages now present but 95-99 percent of active stages are nymphs. (Scott). COLORADO - Lygus sp. causing damage to terminal growth of potatoes in San Luis Valley. (Jenkins). DELAWARE - L. lineolaris present on peppers in Sussex County. (Burbutis, Evans).

THRIPS - IDAHO - Populations of undetermined species high on flowering onion umbels and on scattered late radish blooms in Fruitland area. Damage to onion umbels ranged trace to 75 percent of florets per umbel destroyed. (Scott). COLORADO - Numbered 50 per leaf on potatoes in Weld County. (Berry, Cress). MICHIGAN - Causing severe injury to navy beans, especially late beans under stress from drought, in Saginaw and Shiawassee Counties. (Janes).

FLEA BEETLES - OREGON - Large numbers of Phyllotreta cruciferae noted on cabbage in Corvallis area. (Crowell). COLORADO - Damaging foliage of potatoes in few fields in Rio Grande and Weld Counties. (Leick, Titensor). OHIO - Undetermined species caused heavy damage to cabbage near Reynoldsburg, Licking County; 80 plants observed 100 percent infested at roadside market. Phyllotreta striolata light on cabbage plants near Reynoldsburg. (Lyon). MARYLAND - Phyllotreta sp. heavy on kale at Cambridge, Dorchester County. (U. Md., Ent. Dept.). DELAWARE - Phyllotreta cruciferae remains common on horseradish in eastern Kent County. (Burbutis, Evans).

CUTWORMS AND LOOPERS - COLORADO - Undetermined cutworms damaging potato plants in field in Rio Grande County. (Leick). Eggs of undetermined looper on lettuce in San Luis Valley. (Jenkins). VIRGINIA - Considerable cutworm damage noted in some fields on Eastern Shore. (Hofmaster, July 9). WISCONSIN - Full-grown looper larvae population in full-podded peas in Columbia and Rock Counties too low to be problem, although abundant enough in Fond du Lac County to be noticeable. Other larvae occurring nearly as commonly in Columbia County pea fields are Ceramica picta, Colias eurytheme, Peridroma saucia, Plathypena scabra and Prodenia ornithogalli. (Wis. Ins. Sur.).

SPIDER MITES - MARYLAND - Tetranychus spp. heavy on garden plantings of lima beans in Dorchester and Wilcomico Counties. (U. Md., Ent. Dept.). ARKANSAS - Undetermined species heavy on cucurbits in Lincoln County. (Ark. Ins. Sur.). OKLAHOMA - Several species heavy on tomatoes, beans and other crops in Garfield County. (Okla. Coop. Sur.).

TOBACCO INSECTS

HORNWORMS (Protoparce spp.) - MARYLAND - Larvae ranged light to moderate generally on tobacco in Anne Arundel, Calvert and St. Marys Counties. (U. Md., Ent. Dept.). MISSOURI - Numerous on tobacco in Fayette area. (Wkly. Rpt. Fr. Grs., July 10).

STALK BORER (Papaipema nebris) - MARYLAND - Larvae infested 3 percent of tobacco plants in one field in St. Marys County. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Ranged light to medium on tobacco in Anne Arundel, Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults ranged 2-5 per tobacco plant in St. Marys County. (U. Md., Ent. Dept.).

SLUGS - VIRGINIA - Heavy on tobacco on farm in Washington County. (Groselose, July 3).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Few first-generation weevils observed in some fields in Florence area. (Taft et al., July 10). Activity much below that of same time last year. Weevils still difficult to find in some Piedmont areas, but punctured squares increasing. In Coastal Plain counties, weevils more numerous; infestation as high as 80 percent in one untreated field and 40-50 in many counties. Weevil migration expected to begin in low country July 16-20. (Cott. Ltr., July 15). GEORGIA - Square counts in northeast and northwest areas ranged 0-8 percent; averaged 4 percent punctured squares. (Johnson). Percent punctured squares in 1,868 fields checked July 5-10 was 1-10 in 76 percent of fields, 11-25 in 18 percent and 25-50 in 1 percent of fields; 5 percent of fields had no punctured squares. (Jordan). ALABAMA - Infestation counts continue low throughout State compared with previous years. Infestations increased in several northwest counties, particularly Colbert and Franklin where half-grown larvae indicate hatch-out about July 15-20. (McQueen et al.). TENNESSEE - Continues light in southern tier of counties and very spotted. Some fields becoming rank which will make control difficult without some mechanical damage to cotton. (Locke). MISSISSIPPI - Punctured squares found in 14 of 45 fields checked in delta counties. Percent punctured squares in infested fields ranged 0.2-7.5 and averaged 1.84. (Pfrimmer et al.). Light on cotton in Attala, Calhoun, Choctaw, Copiah, Holmes, Jefferson Davis, Lowndes, Madison, Monroe, Prentiss and Quitman Counties; controls applied. (Ouzts, July 5). LOUISIANA - Infestations continue generally light in Tallulah area, but higher than previously reported. New weevils observed in blooms in one field. Infestation averaged 14 percent in one 35-acre experimental field. (Smith et al.). OKLAHOMA - Light to medium in cotton in southwest area; only light numbers reported in southeast and east central areas. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - SOUTH CAROLINA - Infestations light in all treated fields in Florence area. (Taft et al.). Present in nearly all fields in eastern half of State; few growers in Piedmont area also concerned. Larval counts in fields about same as year ago. (Cott. Ltr., July 15). GEORGIA - In northeast and northwest areas, egg counts ranged 0-15 (average 5) and larvae ranged 0-7 (average 4) per 100 terminals. (Johnson). Counts made in 1,878 fields during period July 4-10; Eggs per 100 terminals ranged 1-10 in 67 percent of fields, 11-25 in 18 percent of fields, 26-50 in 4 percent of fields and over 50 in 3 percent of fields; none found in 8 percent of fields. Larvae per 100 terminals ranged 1-3 in 46 percent of fields, 4-10 in 15 percent of fields, 11-25 in 3 percent of fields and over 25 in 2 percent of fields; none found in 34 percent of fields. (Jordan). ALABAMA - Appearing in greater numbers in more northern counties; appear to be decreasing in central counties. These are normal cycles and numbers may be much higher during next 10-20 days. (McQueen et al.). TENNESSEE - Light numbers present in most fields in western area, with damage in some fields sufficient to justify controls. Larvae ranged 0-18 per 100 terminals. Control appears to have reduced infestations in number of fields. Larvae averaged 6 per 100 terminals in infested fields. Control should be applied early before larvae large enough to enter bolls. (Locke). MISSISSIPPI - Injured squares found in 19 of 45 fields checked in delta counties. Percent punctured squares in infested fields ranged 0.2-2.2, averaged 0.52. Eggs found in terminals in only 3 fields. Light trap collections show moth flight increasing, indicating new brood is appearing in field. Very close check should be made during next 10-14 days. (Pfrimmer et al.). Light in cotton over entire State. (Ouzts). LOUISIANA - Terminal counts of eggs and larvae remained low in Tallulah area, with egg counts showing slight increase. Square damage lower. No outbreak of large larvae observed or reported. (Smith et al.). MISSOURI - Larvae ranged 0-5 per 100 terminals in 39 of 906 fields scouted. (French). OKLAHOMA - Light numbers in cotton checked in southwest and southeast areas. Infestations ranged 8-28 percent in 400 acres of cotton checked in Webber Falls area, east central. (Okla. Coop. Sur.).

BOLLWORM (Heliothis zea) - NEW MEXICO - Eggs and larvae found in cotton fields in southern counties; populations low in most fields. (N. M. Coop. Rpt.). ARIZONA - General in many Pinal County fields. Heavy infestations occur where cotton and corn associated. (Ariz. Coop. Sur.). CALIFORNIA - Few seen in all fields checked in Riverside area; no economic populations encountered. (Eskafi, July 3).

SPIDER MITES - NORTH CAROLINA - Defoliated some cotton on ends of rows in 2 Sampson County fields. (Mount). Tetranychus sp. abundant on leaves in Cleveland County. (Clapp). SOUTH CAROLINA - Undetermined species very serious in some areas; most complaints in St. Matthews area, where first infestations noted before 2 weeks of rain; have continued to increase. (Cott. Ltr., July 15). GEORGIA - Undetermined species light in northeast and northwest. (Johnson). Light in 15 percent of 1,878 fields checked. (Jordan). ALABAMA - Several species continue light but widely scattered. Controls applied to one 70-acre field in Colbert County. Anticipated hot weather may bring considerable increase. (McQueen et al.). TENNESSEE - Appearing in few more fields in western area but old infestations apparently not increasing. Spot control still effective in most cases. (Locke). MISSISSIPPI - In delta counties, infestations heavy in 2 fields, medium in 1 field and light in 1 field. More widespread than figures indicate. T. telarius heavy in Greenwood-Minter City area, with considerable difficulty in control. (Pfirmer et al.). LOUISIANA - Some spotted infestations of unspecified species in Tallulah area, but not economically important at present. (Smith et al.). MISSOURI - Marginal infestations present in 196 fields of 906 fields scouted. (French). CALIFORNIA - Abundant in fields where control not applied or improperly applied in Shafter area. (Leigh, July 5). T. atlanticus encountered in few fields in Riverside area. (Eskafi, July 3).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Serious in 25-acre field in Horry County; present in Marion County. (Cott. Ltr., July 15). GEORGIA - Light in cotton throughout State. (Johnson, Jordan).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Emergence continues in test cages in Graham County; averaged 3-4 per day. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Increasing in stub and planted cotton in Yuma and Pinal Counties. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Few young larvae appearing in Yuma County cotton. (Ariz. Coop. Sur.). CALIFORNIA - Adults flying at Westside. (Leigh, July 5).

PLANT BUGS - TENNESSEE - Lygus lineolaris and Adelphocoris rapidus causing some damage to very small squares over western area. Infestations light. (Locke). MISSISSIPPI - L. lineolaris light on cotton in Calhoun, Madison, Marshall, Montgomery, Quitman and delta counties; controls applied. (Ouzts, July 5). MISSOURI - Ranged 0-60 plant bugs per 100 plants in 645 fields. (French).

LYGUS BUGS (Lygus spp.) - ARIZONA - Populations still economically important in cotton fields; up to 10-100 per 100 sweeps in Casa Grande area, with very severe migration from safflower. Counts increased in Yuma County while counts in Graham County remained constant. Counts continue high in some Maricopa County fields. (Ariz. Coop. Sur.). CALIFORNIA - Migrating into many cotton fields from alfalfa, safflower and dying native vegetation. Nymphs in many fields in Shafter area. (Leigh, July 5). Populations very low in Riverside area. (Eskafi, July 3).

FLEAHOPPERS - MISSISSIPPI - Epitrix spp. light on cotton in Marshall and Madison Counties and in delta areas. (Ouzts, July 5). NEW MEXICO - Psallus seriatus and Spanogonicus albofasciatus populations remain relatively light in most cotton in Eddy, Chaves and Dona Ana Counties. (N. M. Coop. Rpt.).

COTTON FLEAHOPPER (Psallus seriatus) - ARIZONA - Counts high and increasing in Maricopa, Graham, Pinal and Yuma Counties. Nymphs destroying squares in growing tips. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE BARK BEETLES - Dendroctonus frontalis activity continued in TEXAS, ALABAMA, and MISSISSIPPI, but generally at lower level than at same time last year; similar conditions reported in NORTH CAROLINA and within National Forest in north GEORGIA and SOUTH CAROLINA. Georgia Forestry Commission reported D. frontalis reduced to endemic levels in 34 counties and that control will be completed by last of June. Severe weather last winter contributed to mortality in north Georgia, South Carolina and portions of North Carolina. Some increase in number of parasites and predators also observed. Detection and evaluation surveys now in progress will be completed in early July; will provide valuable information on trend of 1963 D. frontalis population. In meantime, landowners urged to make periodic checks and clean up infestations to avoid future buildup. Ips spp. continue to threaten pine forests in naval-stores belt of FLORIDA, south GEORGIA and portions of TEXAS and LOUISIANA. D. terebrans infestations increased in TEXAS, LOUISIANA and ARKANSAS; existing drought conditions in south GEORGIA and FLORIDA favor increased activity. (South. For. Pest Rpt., June 26). ALABAMA - Dendroctonus terebrans, Ips grandicollis and I. avulsus killed about one acre of pines in Choctaw County. Monochamus titillator also present in these dead or dying pines. (Sexton). MISSISSIPPI - Light to heavy, isolated infestations of Ips spp. on pines in Choctaw and Forrest Counties; Dendroctonus terebrans light on pines in Forrest County. Control applied for both pests. (Ouzts, July 5). ARKANSAS - Dendroctonus terebrans active in south and southeastern areas. Attacking pines weakened by lack of rainfall. Ips spp. (primarily I. avulsus) damaging some stands of pine; heaviest concentration in Hamburg-Crossett-El Dorado area. Heavy activity also in eastern Ouachita Mountains, south of Perryville. Affected sites ranged from single trees to areas as large as an acre. (Ark. For. Pest Rpt., July). CALIFORNIA - Widely distributed populations of Ips confusus in 50 acres of slash from thinning. All slash treated prior to rains. Results of treatment showing as no live ponderosa pines infested in Forbes Creek area, Tahoe Mountain Forest. (C. Lowrie, USFS).

PALES WEEVIL (Hylobius pales) - PENNSYLVANIA - Breeding in freshly cut Norway spruce stumps in Lancaster County. Nearby Douglas-fir plantation and natural white pine saplings suffered extensive feeding damage. Other feeding damage to seedlings and saplings in Butler, Pike and Warren Counties. (Pa. For. Pest Rpt., July). NORTH CAROLINA - Caused heavy mortality in several thousand acres of pine plantations ranging from one to 3-4 years in age. (South. For. Pest Rpt., June 26).

WHITE-PINE WEEVIL (Pissodes strobi) - PENNSYLVANIA - Populations remain high in northern tier of counties. Untreated trees 80-90 percent attacked. (Pa. For. Pest Rpt., July). WISCONSIN - Pupation began in Sauk County first week of July. (Wis. Ins. Sur.). MINNESOTA - Forming chip cocoons for pupation. Considerable damage in roadside stands of white pine in Hubbard and Clearwater Counties. (Minn. Ins. Rpt.).

PINE ROOT COLLAR WEEVIL (Hylobius radicis) - MICHIGAN - Injury seems heavier this year in northwest Lower Peninsula. (Flink, Mars). PENNSYLVANIA - Caused 10 percent mortality of Scotch pine over 2 acres in Huntingdon County. (Pa. For. Pest Rpt., July).

PINE COLASPIS (Colaspis pini) - ALABAMA - Of concern to farmers in Baldwin County; 20-acre stand of pines defoliated. (Fairley).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Heavy damage in isolated areas of young pines, Chilton County. (Helms). OKLAHOMA - Completing second generation in Stillwater area in plantings of shortleaf and loblolly pine. (Okla. Coop. Sur.). KANSAS - Larvae damaging Scotch pine in Anderson County; averaged one per stem tip. (Mills, Thompson).

JACK-PINE BUDWORM (*Choristoneura pinus*) - MICHIGAN - Defoliation heavy in northern part of State; pupae and adults present. (Davenport, Flink). MINNESOTA - Adults active in Crow Wing, Cass, Hubbard and Clearwater Counties. Moderate defoliation in Pine River and Bemidji areas. Dead needles give jack pine a reddish appearance. (Minn. Ins. Rpt.). WISCONSIN - Pupation occurred last week of June and moth flight July 7 in Juneau County. (Wis. Ins. Sur.).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - IDAHO - Severe locally west of Genesee near Washington border. Attacking ornamental spruce and some Douglas-fir. Infestation well removed from any large coniferous forest stands. (Manis).

PITCH TWIG MOTH (*Petrova comstockiana*) - PENNSYLVANIA - Extensive twig mortality and "flagging" on young Scotch pine in Tioga County. Adults emerged in mid-June from infested twigs. (Pa. For. Pest Rpt., July).

PINE TIP MOTHS - ARKANSAS - Active in tips over most of State; expected to be heavy in some areas. Damage noticeable. (Ark. For. Pest Rpt., July).

COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) - IDAHO - Galls abundant on Douglas-fir in many areas. Infestation reported at Dubois, Clark County. (Gittins, Peebles). COLORADO - Many new galls evident on spruce in Garfield County. (Hantsbarger).

SPITTLEBUGS (*Aphrophora* spp.) - PENNSYLVANIA - *A. parallela* increasing in Clarion County pine plantations; 30 per tree on some trees. New adults noted in Union County in mid-June. (Pa. For. Pest Rpt., July). WISCONSIN - Treatment of 800 acres in Marinette and Oneida Counties anticipated for control of *A. saratogensis*; most nymphs in fifth stage. Adults emerged in Jackson County July 7. (Wis. Ins. Sur.).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - PENNSYLVANIA - Killed 10-20 percent of old field Virginia pine saplings over 15 acres in Lycoming County; 75 percent of trees infested. (Pa. For. Pest Rpt., July).

PINE SAWFLIES - PENNSYLVANIA - *Diprion similis* partially defoliating young white pine in Tioga County. Most stages observed June 26. (Pa. For. Pest Rpt., July). ARKANSAS - *Neodiprion lecontei* noticeable on ornamental pine plantings. (Ark. For. Pest Rpt., July). WISCONSIN - *D. similis* light in Lincoln County. (Wis. Ins. Sur.). MINNESOTA - *D. similis* mostly in third to fifth instar; some larvae spinning up. High second-generation populations expected especially in north Crow Wing County around Pelican and Cross Lakes. *Pikonema alaskensis* damaging occasional spruce in east central and northeast districts and to some small plantation spruce in Bemidji area. (Minn. Ins. Rpt.). IDAHO - *Neodiprion* sp. severely defoliating old needles of lodgepole and ponderosa pine stands in area south of Coeur d'Alene; pupation general on July 10. (Schenk).

LARCH SAWFLY (*Pristiphora erichsonii*) - NEW YORK - Moderate to severe defoliation of larch in Tomhannock Reservoir area near Pittstown, Rensselaer County. (N. Y. Wkly. Rpt., July 8). MINNESOTA - Present in all stages but immatures predominant. (Minn. Ins. Rpt.). WISCONSIN - Light in Lincoln County on July 2. (Wis. Ins. Sur.).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - VERMONT - Injury easily observed, but does not appear as severe as in past years. (MacCollom, July 8). NEW YORK - Pupation started, but most larvae still feeding on foliage. (N. Y. Wkly. Rpt., July 8). ALABAMA - Extremely high populations defoliating elm in Lee, Tallapoosa, Colbert, Chilton and Franklin Counties. Some controls applied. Few trees dead from defoliation. New generation pupating in central and southern areas. (Helms, Ponder, Somerville). ARKANSAS - Feeding heavily in northwest area. Adults numerous and egg deposition heavy. (Ark. For. Pest Rpt., July). OKLAHOMA - Medium to heavy defoliation of elms throughout State.

Most frequently reported pest across State. (Okla. Coop. Sur.). OREGON - Adults emerging in Medford area. Severe infestation on unsprayed trees. (Berry).

IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) - NEW YORK - Larvae and adults plentiful on black willow at Ithaca, Tompkins County. (N. Y. Wkly. Rpt., July 8).

A LEAF BEETLE (Anomoea laticlav ia) - PENNSYLVANIA - Heavy foliage damage to black locust at Newport, Perry County, July 5. (Negley).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ALABAMA - Defoliation 50-100 percent in isolated groups of black locust in Jefferson, Cullman, Colbert, Franklin and Lee Counties. (Barwood, Robinson, Warren). MARYLAND - Larvae causing noticeable browning of roadside black locust in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.). ILLINOIS - Larvae mining leaves of black locust near Carthage, Hancock County. This is a new county record. (Ill. Ins. Rpt.).

BRONZE BIRCH BORER (Agri lus anxius) - PENNSYLVANIA - Serious damage to birch in Dauphin County, July 6. (Sleesman). MINNESOTA - Adults still flying. (Minn. Ins. Rpt.).

FALL WEBWORM (Hyphantria cunea) - KANSAS - Second-generation adults emerging in field cage in Riley County. (Thompson). ARKANSAS - Heavy numbers appearing; active over State. (Ark. For. Pest Rpt., July). ALABAMA - Light on pecan, hickory and persimmon in Tallapoosa, Shelby, Jefferson Counties. Noted in Cullman, Lawrence, Morgan, Colbert and Franklin Counties. (McQueen). DELAWARE - On several trees throughout eastern Sussex County. (Barbutis, Evans).

OAK WEBWORM (Archips fervidanus) - PENNSYLVANIA - Completely defoliated scrub oak in Monroe, Carbon and Pike Counties; few red and scarlet oaks also affected. (Pa. For. Pest Rpt., July).

TENT CATERPILLARS (Malacosoma spp.) - RHODE ISLAND - M. americanum adults taken in blacklight trap at Kingston, Washington County. New egg masses abundant in East Greenwich, Kent County. (Mathewson). M. disstria again defoliated several thousand acres of bottomland hardwoods in LOUISIANA and TEXAS. (South. For. Pest Rpt., June 26). IDAHO - Large scale infestation of Malacosoma spp. present on alder, poplar, birch and willow from 10 miles south of Coeur d'Alene, Kootenai County and continuing intermittently northward to Sandpoint area in Bonner County. Pupation general by first week of July. Low incidence of virus disease among larvae. (Furniss, Schenk). OREGON - Large numbers of adults appearing in blacklight traps in Portland. (Larson).

GYPSY MOTH (Porthetria dispar) - VERMONT - Pupating on tree trunks. (MacCollom, July 8). CONNECTICUT - Larvae a problem at New Milford and Cornwall. (Savos). NEW YORK - Damage severe in some Hudson Valley areas. Larvae found July 1 at Ronkonkoma, in cooler areas of Suffolk County. (N. Y. Wkly. Rpt., July 8).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - ARKANSAS - Reported from Waldron area, with extensive feeding in local spots. (Ark. For. Pest Rpt., July).

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma) - INDIANA - Rather serious on Norway maple in Indianapolis; peak occurred week of July 1. (Favinger). WISCONSIN - Adults appearing in blacklight traps in Dane County. (Wis. Ins. Sur.).

ELM SPANWORM (Ennomos subsignarius) - Defoliation was below predicted level this spring in north GEORGIA and southwest NORTH CAROLINA. (South. For. Pest Rpt., June 26).

SATIN MOTH (Stilpnotia salicis) - IDAHO - Adults emerging in Moscow area. (Biggam).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - IOWA - Infesting elm, willow and poplar in several counties. (Iowa Ins. Inf., July 8).

EUROPEAN ELM SCALE (Gossyparia spuria) - NEW JERSEY - Crawlers active. (Ins.-Dis. Newsltr., July 9). PENNSYLVANIA - Eggs hatched; heavy on elm in some areas of Dauphin County, July 3. (Sleesman).

A PIT-MAKING SCALE (Asterolecanium minus) - PENNSYLVANIA - Thousands of chestnut oak on several hundred acres near Quarryville, Lancaster County, killed this year, presumably as result of attacks by this scale. Much of actual killing of scale-infested, decadent trees was done by Agrilus bilineatus which is present in epidemic numbers. (Pa. For. Pest Rpt., July).

BIRCH LEAF MINER (Fenusa pusilla) - VERMONT - Second generation expected by July 13. (MacCollom). NEW YORK - Second generation very serious, especially on untreated trees in Suffolk County. First brood showed widespread activity; many trees with 50 percent leaf damage. (N. Y. Wkly. Rpt., July 8).

AN ERIOPHYID MITE (Diptacus sacramentae) - CALIFORNIA - Medium on alder; causing leaf drop in Tustin, Orange County. (Cal. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Heavy on arborvitae, cedar and juniper around properties in Howard and Prince Georges Counties. (U. Md., Ent. Dept.). OKLAHOMA - Medium to heavy on evergreens throughout State. (Okla. Coop. Sur.). ALABAMA - Heavy on arborvitae and other landscape plants in Shelby, Talladega, Jefferson, Colbert, Chilton and Franklin Counties. (Helms, Ponder, Somerville).

MIMOSA WEBWORM (Homadaula albizziae) - MARYLAND - Larvae infesting several mimosa trees in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.). ARKANSAS - Numerous on mimosa trees across State. (Ark. For. Pest Rpt., July). ALABAMA - Heavy on mimosas in Chilton, Colbert and Franklin Counties. Control applied in some areas. (McQueen).

ARBORVITAE LEAF MINER (Argyresthia thuiella) - VERMONT - Adults noted around arborvitae; plants in shaded locations partially defoliated. (MacCollom, July 8).

AZALEA CATERPILLAR (Datana major) - FLORIDA - Infesting 300 azaleas at Lakeland, Polk County, July 8. (Tyner).

JAPANESE BEETLE (Popillia japonica) - CONNECTICUT - Attacking wide variety of ornamentals. (Savos). NEW YORK - Very few found on roses in Hudson Valley July 1-3. (N. Y. Wkly. Rpt.).

ROSE CHAFER (Macrodactylus subspinosus) - OHIO - Flight about complete; damage to foliage expected soon. (Polivka, July 5). Infestating roses near Lebanon, Warren County, July 5. (Ross, Blair).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata undecimpunctata) - CALIFORNIA - Heavy on roses in Chowchilla, Madera County. More prevalent over State in home gardens than for several years. (Cal. Coop. Rpt.).

A JAPANESE WEEVIL (Calomycterus setarius) - WISCONSIN - Severely defoliating roses in Dane County. Leaves consumed except for veins. (Wis. Ins. Sur.).

APHIDS - VERMONT - Severe on ornamentals in Chittenden County. (MacCollom, July 8). CONNECTICUT - Still a problem on ornamentals. (Savos). NEW JERSEY - Active on maple, oak, elm, linden and birch. (Ins.-Dis. Newsltr., July 9).

PENNSYLVANIA - Prociphilus tessellatus heavy on maple in Cameron County. (Adams, June 27). IOWA - Lachnus salignus annoying in some areas. (Iowa Ins. Inf., July 8). UTAH - Unspecified species numerous on birch in Pine Valley Forest Camp, Washington County. (Knowlton). CALIFORNIA - Rhopalosiphum berberidis heavy on Berberis sp. in Sacramento, Sacramento County. Myzocallis californicus heavy on oak leaves in Ukiah, Mendocino County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - NEW JERSEY - Many plants of Anthurium sp. heavily infested in greenhouse at Linwood, June 4. Leaves and flowers slightly gnarled. Collected by Irene H. Sohl. Apparently no previous record of an aphid from this plant. (M. D. Leonard).

EASTERN SPRUCE GALL APHID (Chermes abietis) - PENNSYLVANIA - Heavy on white and Norway spruce in Christmas-tree plantation in Columbia County. (Callacott, June 27).

AZALEA LACE BUG (Stephanitis pyrioides) - MARYLAND - Prevalent on azaleas in College Park area. (U. Md., Ent. Dept.).

FOUR-LINED PLANT BUG (Poecilocapsus lineatus) - ALABAMA - Attacking several varieties of shrubs and garden flowers in Semmes area and caused considerable leaf drop in rose garden July 2 at Chickasaw, Mobile County. (Seibels).

COCCIDS - NEW YORK - Abundant on white ash at Varna, Tompkins County. Trees growing in forest conditions. (N. Y. Wkly. Rpt., July 8). PENNSYLVANIA - Lecanium fletcheri light but widespread on arborvitae in nurseries in Westmoreland and Allegheny Counties. (Yackley, Yount). More infestations of Neolecanium cornuparvum noted so far this year than last on magnolia in nurseries. (Yackley). MARYLAND - Unaspis euonymi heavy on euonymus at Pocomoke City, Worcester County. Aspidiotus perniciosus infesting several ornamental Prunus spp. in sections of Montgomery and St. Marys Counties. (U. Md., Ent. Dept.).

FLORIDA - Lepidosaphes camelliae severe on Camellia japonica at Glen St. Mary, Baker County, July 8. (Collins). Pinnaspis strachani severe on Hibiscus sp. at Lake Worth, Palm Beach County, July 5. (Long). CALIFORNIA - Aspidiotus ehrhorni in heavy populations on white fir in El Dorado County. (Beechel).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Heavy on Mugho pine in Medina County (northeast). Females ovipositing. (Appleby).

A THRIPS (Liothrips illex) - CALIFORNIA - Nymphs heavy on California holly in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

LEAFCUTTING BEES (Megachile spp.) - ARIZONA - Moderate to severe damage to roses in nurseries and home gardens in Pinal County. (Ariz. Coop. Sur.).

A WEB-SPINNING SAWFLY (Neurotoma fasciata) - WISCONSIN - Heavy on chokecherry trees in Rock and Walworth Counties. (Wis. Ins. Sur.).

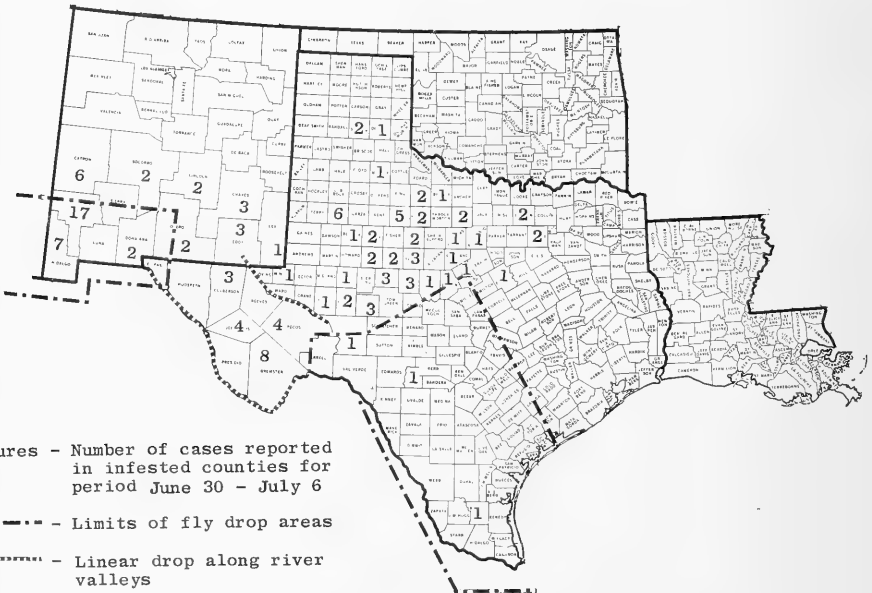
A STEM SAWFLY (Hartigia cressoni) - CALIFORNIA - Medium in rose canes in Chowchilla, Madera County. Later than usual and not as prevalent this year. (Cal. Coop. Rpt.).

SPIDER MITES - VERMONT - Oligonychus ununguis prevalent on spruce, juniper, hemlock and arborvitae. (MacCollom, July 8). CONNECTICUT - Unspecified species a problem on many evergreens, shrubs and other ornamentals. (Savos). DELAWARE - Panonychus ulmi bronzed individual trees in Kent and Sussex Counties. (MacCreary). WISCONSIN - Tetranychus spp. severely injured roses in Dane County. (Wis. Ins. Sur.). OKLAHOMA - Several species heavy on ornamentals in many areas prior to recent rains. (Okla. Coop. Sur.). UTAH - Unspecified species commonly damaging ornamental conifers in northern area. (Knowlton). ARIZONA - Oligonychus spp. and Tetranychus spp. damaging spruce and other ornamentals in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period June 30 - July 6, a total of 81 infestations was reported from TEXAS and 45 from NEW MEXICO. Specimens were reported from 38 counties in Texas and 10 counties in New Mexico. Screw-worm was reported for the first time this year from Brown, Winkler, Upton and Bosque Counties, Texas, and Lea County, New Mexico. A total of 118,910,250 sterile flies was released during the period June 30 - July 6. (Anim. Dis. Erad. Div.).



MOSQUITOES - VERMONT - Unspecified species troublesome in all areas. (MacCollom, July 8). MISSISSIPPI - Psorophora spp. medium on livestock in delta area July 1-12; controls applied. (Ouzts). NEBRASKA - High populations very annoying throughout State; dominant species primarily Aedes vexans and Culex tarsalis. A. dorsalis and A. nigromaculis more numerous than last year in Scotts Bluff area. (Rapp). UTAH - Mosquitoes annoying to severe in areas of Cache, Millard, Box Elder, Rich, Davis, Tooele, Utah and Weber Counties. Control applied in Weber County where Aedes dorsalis and A. nigromaculis were most common species. (Knowlton, Frank).

FACE FLY (*Musca autumnalis*) - NORTH DAKOTA - Ranged up to 30 per animal. (Noetzel). IOWA - Numerous enough to cause extreme annoyance to unprotected animals. (Iowa Ins. Inf., July 8). WISCONSIN - Building up in Iron, Manitowoc, Monroe and Walworth Counties. Annoying horses in Walworth County. (Wis. Ins. Sur.). ILLINOIS - Populations relatively low in central and west districts. Averaged 4 per face in west and 2.1 in central district. (Ill. Ins. Rpt.). OHIO - Moderate on cattle in Guernsey County (southeast); ranged 20-25 per face on 15 head. (Share, Lyon). Averaged 8.8 per face on beef and dairy animals at Wooster, Wayne County (northeast). (Treece). VIRGINIA - Averaged 20 per head locally in Russell County, July 3. Averaged 3 per head in one herd and 2 per head in another herd in Franklin County. (Tarpley). MARYLAND - Counts of 2-14 per head in 11 dairy herds in Frederick and Howard Counties. (U. Md., Ent. Dept.). VERMONT - Problems unchanged. (MacCollom, July 8).

HORN FLY (*Haematobia irritans*) - WYOMING - Adults causing much irritation to cattle herds in Teton County. Estimated 150 per animal. (Marks). OKLAHOMA - Counts per animal on untreated cattle in Stillwater area, Payne County, averaged 750 on cows, 1,000 on long yearling steers, 5,000 on bulls. Ranged 600 to several thousand per animal on cattle in several herds checked in Pushmataha County; considerable annoyance to animals in many other areas. (Okla. Coop. Sur.). NORTH DAKOTA - Ranged 5-12 per animal. (N. D. Ins. Rpt.). WISCONSIN - Annoying in Price and Monroe Counties. (Wis. Ins. Sur.). ILLINOIS - Averaged 92 per animal in west and 36 per animal in central districts. Of 18 herds, 4 averaged 200 or more flies per animal and 10 averaged 25 or less per animal. (Ill. Ins. Rpt.). IOWA - Numbers sufficiently high to cause extreme annoyance to unprotected animals. (Iowa Ins. Inf., July 8). MISSISSIPPI - Medium to heavy on livestock in Choctaw, Holmes and Lowndes Counties and in delta area July 1-5; medium to heavy in delta area July 8-12. Controls applied. (Ouzts). MARYLAND - Counts of 3-8 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.). VIRGINIA - Severely infesting cattle locally in Russell County. Averaged over 500 per head. (Tarpley, July 3).

TABANIDS - PENNSYLVANIA - *Chrysops* spp. abundant in wooded sections of south central area; troublesome to humans. (Pepper, July 8). MICHIGAN - Adults of *Chrysops* spp. very annoying in Berrien and Lake Counties; moderately abundant in Sanilac and Menominee Counties. (Tatter, Mars, Sowerby, Bowers). WISCONSIN - Horse flies and deer flies still annoying in Vilas, Ashland, Trempealeau and Marathon Counties, but diminished somewhat in Price County. (Wis. Ins. Sur.). ILLINOIS - Horse flies seen only occasionally in central and west districts. (Ill. Ins. Rpt.). IOWA - Horse flies and deer flies fairly abundant in many areas; annoying cattle, horses and humans. (Iowa Ins. Inf.). MISSISSIPPI - *Tabanus* spp. medium on livestock in delta area July 1-12. (Ouzts). OKLAHOMA - *Tabanus lineola* complex and *T. abactor* averaged 2-3 per cow on low, wooded pastures in Payne and Pushmataha Counties. (Okla. Coop. Sur.). UTAH - Tabanids conspicuous in several areas of Rich, Box Elder and Tooele Counties and in Uintah Basin. *Tabanus* sp. annoying horses in Logan-Hyrum area of Cache County and *T. sonomensis* abundant in areas of Box Elder and Rich Counties. (Knowlton). WYOMING - Tabanids causing considerable irritation to man and animals in Lincoln and Teton Counties. Estimated 150-200 per animal. (Marks).

STABLE FLY (*Stomoxys calcitrans*) - NORTH DAKOTA - Ranged up to 50 per animal. (Noetzel). OKLAHOMA - Medium to heavy (8-15 per animal) on cattle checked in Pushmataha County. Averaged 1-2 per animal in Stillwater area, Payne County, with maximum of 8 per animal noted. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta area July 1-12; controls applied. (Ouzts). IOWA - Extremely annoying to unprotected animals. (Iowa Ins. Inf., July 8). ILLINOIS - Averaged about 1 per animal in central and west districts. (Ill. Ins. Rpt.). WISCONSIN - Of concern in Grant, Vilas, Lafayette, Trempealeau and Price Counties. (Wis. Ins. Sur.). OHIO - Heavy on cattle in several southeastern counties; 100-275 per animal frequently observed on untreated herds, primarily beef cattle. (Lyon). MARYLAND - Counts of 0-6 per head in 11 dairy herds in Frederick and Howard Counties. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - VERMONT - Increasing. (MacCollom, July 8).
CONNECTICUT - Larvae and adults on increase. (Savos). OHIO - Building up
in Wayne County dairy barns; extremely abundant in one barn at Wooster.
(Treece). OKLAHOMA - Ranged 10-15 per animal in Stillwater area, Payne County,
with maximum of 30 noted. Populations up slightly in barns; averaged 6 per
Scudder grid, with maximum of 30 per Scudder grid. (Okla. Coop. Sur.).

BLOW FLIES - VERMONT - Much more prevalent around urban areas than in past
years. (MacCollom, July 8).

CATTLE GRUBS (Hypoderma spp.) - WISCONSIN - Adults noticeable in Walworth,
Monroe and Lafayette Counties. (Wis. Ins. Sur.). UTAH - Adults annoying cattle
in areas of Cache and Box Elder Counties during recent weeks. (Knowlton).

AMERICAN DOG TICK (Dermacentor variabilis) - NEBRASKA - High populations in
several areas of State. (Rapp). KANSAS - Specimen from child's scalp, Riley
County, July 3. (Isaak). OHIO - Many inquiries from Cambridge area, Guernsey
County; 3 taken from small girl. Also on dogs and cats in area. (Share).

EAR TICK (Otobius megnini) - UTAH - Annoying to some cattle herds in Iron County.
(Knowlton, Sjoblom).

BROWN DOG TICK (Rhipicephalus sanguineus) - ARIZONA - Numbers increasing for
first time this year in Pinal County. Infestations general in Maricopa County.
(Ariz. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy numbers on cattle
checked in Pushmataha County. (Okla. Coop. Sur.).

FLEAS - CONNECTICUT - Becoming troublesome to homeowners with pets. (Savos).
OKLAHOMA - Ctenocephalides spp. continue a problem in homes of returning
vacationers, where pets are kept. (Okla. Coop. Sur.).

CHIGGERS - PENNSYLVANIA - Attacking humans in Delaware Water Gap and in areas
of Monroe and Dauphin Counties during first week of July. (Sleesman).

HOUSEHOLD AND STRUCTURAL INSECTS

DRUGSTORE BEETLE (Stegobium paniceum) - OKLAHOMA - Causing some concern to home-
owners in north central area. (Okla. Coop. Sur.).

LARDER BEETLE (Dermestes lardarius) - PENNSYLVANIA - Heavier than usual in
northwest area. (Adams, July 2).

LARGER YELLOW ANT (Acanthomyops interjectus) - NEW JERSEY - Winged forms still
causing some concern to homeowners. (Ins.-Dis. Newsltr., July 9).

PAVEMENT ANT (Tetramorium caespitum) - NEW JERSEY - Winged forms still causing
some concern to homeowners. (Ins.-Dis. Newsltr., July 9). CONNECTICUT -
Continues to swarm in many parts of State. (Savos).

STORED-PRODUCT INSECTS

A MELYRID BEETLE (Collops bipunctatus) - COLORADO - Present in small grain
crops in Arkansas Valley, San Luis Valley and northeastern area. (Schweissing,
Hantsbarger, Jenkins).

CIGARETTE BEETLE (Lasioderma serricorne) - FLORIDA - Feeding on dried lima
beans at Clewiston, Hendry County. (Smith, July 9).

CADELLE (Tenebroides mauritanicus) - MISSOURI - Heavy in popcorn bins in north-west area. (Saint Aubin).

GRAIN MITE (Acarus siro) - IDAHO - Infested potato storage cellar at St. Anthony; cellar roofed with straw insulation. (Garner).

MUSHROOM MITE (Tyrophagus putrescentiae) - CALIFORNIA - Heavy in grain mix horse feed in Santa Ana, Orange County; more evident over past 2 years than previously. Household infestations not uncommon. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Several species numerous in alfalfa fields of Uinta, Lincoln and Teton Counties; counts averaged 40 per 100 sweeps. (Marks).
COLORADO - Counts of Hippodamia sp. ranged 200-300 per 100 sweeps in Mesa County. (Bulla). FLORIDA - Rodolia cardinalis predaceous on scale insect collected on sweet orange at Balm, Hillsborough County. (Custead, June 28).

PUNCTUREVINE WEEVILS (Microlarinus spp.) - UTAH - Release of 200 specimens made at Perry, Box Elder County, July 9 and 200 at Santa Clara, Washington County, July 10. (Knowlton, Hawkes).

BIG-EYED BUGS (Geocoris spp.) - ALABAMA - G. punctipes not very common in cotton in northern area. (McQueen). WYOMING - Counts of Geocoris sp. averaged 35 per 100 sweeps in alfalfa fields of Lincoln County. (Marks).

A PREDACEOUS THRIPS (Leptothrips mali) - CALIFORNIA - Adults medium on apple trees at Castella, and light on plum trees at Lakehead and Castella, Shasta County. (Cal. Coop. Rpt., July 5).

ROBBER FLIES - ALABAMA - Appearing in considerable numbers in Lee County. (Barwood, Davis).

ALKALI BEE (Nomia melanderi) - UTAH - Appeared in Pahvant-West Kanosh area on July 1; two artificially prepared nesting sites, west of Kanosh and at Pahvant, Millard County, look good. (Knowlton, Rickenbach).

Beneficial Insects in Alabama - Nabis spp., Hippodamia convergens, Coleomegilla maculata fuscilabris, Chrysopa oculata and Orius insidiosus appearing in large numbers in cotton and corn in Cullman, Morgan, Lawrence and Colbert Counties. (McQueen).

Beneficial Insects in Utah - LACEWINGS extremely abundant plus Geocoris spp., Nabis spp., LADY BEETLES and FLOWER FLY larvae in alfalfa fields in Washington-Santa Clara area, Washington County. (Knowlton, Pease).

CORRECTIONS

CEIR 13(27):770 - ASIATIC GARDEN BEETLE (Autoserica castanea) should read (Maladera castanea).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - VERMONT - Emergence increasing. (MacCollom, July 8). RHODE ISLAND - General emergence appears underway, but spottier than usual; geographical variation great. Common on favored host plants in East Providence area and homeowners commenting on lateness of appearance in Woonsocket region, Providence County. Scanty in Kingston section, Washington County. (Mathewson). PENNSYLVANIA - Emerged in Dauphin County July 6. (Cole). Very few appearing in south central and central areas; infestation will probably be low due to dry summer of 1962. (Udine, July 8). VIRGINIA - Medium on variety of plants in Culpeper County; first noted June 15 with large buildup past week. (Heltzel, July 2). First appearance in considerable numbers in pastures; not yet apparent on favored host plants around Steeles Tavern, Augusta County. (Woodside, July 3). Light on Virginia-creeper, grape and fruit trees in Fluvanna County; adults first appeared on grape week of June 24-29. (Watts, July 1). OHIO - Populations low compared with 1962, possibly due to dry weather; however, considerable numbers collected at Gallipolis, Gallia County (southeast). (Polivka, June 26). Infesting many crops near Ironton, Lawrence County (southcentral). (Crawford). Averaged 8-10 per 50 sweeps in Guernsey and Noble Counties; observed on corn, alfalfa, red clover, potato, garden beans, grapes, sassafras and weeds; heaviest numbers noted in Noble County, with 6 on one leaf and 35 on sassafras plant; considerable feeding on sassafras. No significant feeding on other plants. (Lyon). MICHIGAN - Adults being collected in traps in vicinity of Battle Creek, Calhoun County; this only area where adults collected to July 12. Catches being made in high percentage of approximately 1,000 traps located primarily south of city. Traps being moved farther from city to delimit area of infestation. Heavy flight indicated by one trap within city limits being filled to overflowing. Feeding on roses and weeds. (Ring, Carlson).

EUROPEAN CHAFER (Amphimallon majalus) - NEW YORK - Being found throughout city of Elmira, Chemung County, as well as in areas previously treated. Flights underway in Norwich area, Chenango County; first adult trapped June 27; large numbers appeared warm nights of June 30 and July 1. Swarmed in Lockport, Niagara County, June 27. (N. Y. Wkly. Rpt., July 8).

ASIATIC GARDEN BEETLE (Maladera castanea) - RHODE ISLAND - Adults active in Warwick, Kent County. A little late this year. (Cartier).

NORTHERN MASKED CHAFER (Cyclocephala borealis) - OHIO - Adults present statewide; many collected at Friendship, Scioto County (south central). (Polivka).

SAP BEETLES (Glischrochilus spp.) - INDIANA - Extremely annoying in residential and suburban areas in Marion and Tippecanoe Counties. (Favinger, Osmon).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Collected at Balm, Hillsborough County, in what may be a new township. (Custead, Hale, Fuller; July 3).

LIGHT TRAP COLLECTIONS

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta | quin. | Heliothis zea | vires. |
|------------------------------------|-----------------|----------------|------------------|------------------|-------------------|---------------------|-------|------------------|--------|
| ARKANSAS | | | | | | | | | |
| Hope 6/27-7/3 | | 1 | | | | | | 33 | |
| Hope 7/4-10 | | 2 | | | | | | 65 | |
| Morrilton 6/27-7/3 | 5 | 2 | | | | | | 39 | |
| Morrilton 7/4-10 | 15 | 3 | 25 | | | | | 40 | 2 |
| Kelso 6/27-7/3 | | | | | | | | 2 | |
| Kelso 7/4-10 | | | | | | | | 11 | |
| Fayetteville 6/27-7/3 | | | | | | | | 20 | |
| Fayetteville 7/4-10 | | | | | | | | 12 | |
| GEORGIA | | | | | | | | | |
| Tifton 7/4-10 | | | | | | 8 | | 36 | 7 |
| ILLINOIS (County) | | | | | | | | | |
| Champaign 7/5-11 | 297 | 62 | 299 | 36 | | | | 1 | |
| INDIANA (Counties) | | | | | | | | | |
| La Porte 6/24-7/8 | 180 | 3 | 22 | | | 6 | 5 | | |
| Lawrence 6/30-7/8 | 51 | 12 | 39 | 5 | | 3 | 2 | | |
| Tippicanoe 7/3-10 | 68 | 3 | 7 | 1 | | | | | |
| Vanderburgh 7/4-9 | 3 | 1 | 4 | 1 | | | | | |
| Jasper 6/27-7/7 | 784 | 10 | 35 | 6 | | 2 | 4 | | |
| KANSAS | | | | | | | | | |
| Garden City 7/5-8 | 1 | 4 | | 57 | | | | 1 | |
| Hays 7/5 | | | | 2 | | | | | |
| Manhattan 7/6-12 | 8 | 3 | 3 | 93 | 2 | | | | |
| Mound Valley 7/4 | | | | 2 | | | | | |
| Wathena 7/3, 6, 11 | 6 | 6 | 1 | 16 | | | | 2 | |
| MARYLAND | | | | | | | | | |
| Centreville 7/3-9 | 26 | 18 | 13 | | 14 | 2 | | | |
| MISSISSIPPI | | | | | | | | | |
| *Stoneville 7/5-11 | 113 | 5 | 4 | 109 | | 12 | | 171 | 5 |
| NEBRASKA | | | | | | | | | |
| Lincoln 6/27-7/3 | 522 | 91 | 126 | 59 | | | | 6 | |
| Lincoln 7/4-10 | 113 | 56 | 49 | 29 | | | | 6 | 2 |
| North Platte 6/26-7/2 | 198 | 50 | 41 | 25 | 3 | 4 | 5 | 4 | 8 |
| Scotts Bluff Exp. Sta. 6/25-7/1 | 106 | 28 | 57 | | | | 1 | 1 | 5 |
| Scotts Bluff Exp. Sta. 7/2-9 | 54 | 18 | 107 | | | | 1 | | 1 |
| NORTH DAKOTA | | | | | | | | | |
| Pembina 7/6-12 | 2 | 1 | | | 2 | | | | |
| Slope 7/6-12 | 1 | | | | | | | | |
| Bottineau 7/6-12 | 1 | 1 | | | 14 | | | | |

* Two traps - Stoneville

(Continued on page 842)

Light Trap Collections (Continued)

| | Pseud. unip. | Agrot. ips. | Perid. saucia | Prod. ornith. | Ostrin. nubil. | Protoparce sexta | Heliothis quinq. zea | vires. |
|-----------------------|-----------------|----------------|------------------|------------------|-------------------|---------------------|-------------------------|-----------|
| OHIO | | | | | | | | |
| Wooster 7/5-11 | 102 | 15 | | | | | | |
| Ripley 7/5-11 | | | | | | 5 | | |
| Marietta 7/5-11 | | | | | | 1 | | |
| SOUTH CAROLINA | | | | | | | | |
| Clemson 6/29-7/5 | 3 | 2 | 5 | 235 | | 1 | 3 | 3 |
| Clemson 7/6-12 | 22 | 2 | 3 | 301 | | | | |
| Charleston 7/8-14 | 4 | 1 | 1 | 38 | | 4 | 2 | 1 |
| TEXAS | | | | | | | | |
| *Brownsville 7/1-11 | | 69 | 137 | 254 | | 1,901 | 238 | 6,801 700 |
| WISCONSIN | | | | | | | | |
| Janesville 7/2-8 | 1,287 | | | | | 2 | | |
| Delavan 7/2-8 | 99 | | | | | 2 | | |
| Platteville 7/3-8 | 394 | 23 | 30 | | | | | |
| Mazomanie 7/2-8 | 93 | 4 | 6 | | | 8 | | |
| Middleton 7/3-9 | 40 | 12 | 19 | | | 1 | | |
| Madison 7/3-9 | 90 | 27 | 11 | | | | | |
| De Forest 7/2-9 | 158 | 6 | 8 | | | 1 | | |
| Astico 7/2-8 | 73 | | | | | 3 | | |
| Wayne 7/2-8 | 28 | | | | | 1 | | |
| Theresa 7/2-8 | 32 | | | | | 13 | | |
| Nenno 7/2-8 | 114 | | | | | 5 | | |
| Cedar Grove 7/2-8 | 39 | | | | | 11 | | |
| Waldo 7/2-8 | 44 | 4 | | | | 9 | | |
| Ripon 7/2-8 | 1,188 | | | | | 15 | | |
| Rosendale 7/2-8 | 350 | | | | | 15 | | |
| Arlington 7/2-8 | 201 | | | | | 3 | | |
| Fox Lake 7/2-8 | 60 | | | | | 60 | | |
| Beaver Dam 7/2-8 | 367 | | | | | 62 | | |

Additional Light Trap Collections

TEXAS - (*Brownsville 7/1-11) - Pectinophora gossypiella - 1,589; Trichoplusia ni - 8,609.

* Six traps - Brownsville



July 26, 1969

515
823
677
Ent

Cooperative
ECONOMIC INSECT
REPORTS

PLANT AND ANIMAL INQUIRY DIVISION
NATIONAL RESEARCH SERVICE

U.S. DEPARTMENT OF AGRICULTURE

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPERS threatening in large area of western Custer County, North Dakota, and controls applied to 135,000 acres in Niobrara County, Wyoming. Outbreak in Box Elder County, Utah, involves cropland and much rangeland. Counts continue high in some parts of the Nation and feeding reported on various crops, including alfalfa, grain and tobacco. (pp. 845-846). CORN ROOTWORM activity increasing throughout corn-growing area of Nebraska and damage present throughout south-eastern South Dakota. (p. 847). EUROPEAN CORN BORER second-brood moths will emerge in Iowa when most corn favorable for egg laying; borer counts generally high in west central Minnesota, and infestation high in early planted corn in Wisconsin. (p. 848). CORN LEAF APHID building up on corn and milo in Nebraska, and increasing rapidly in southwest Wisconsin. (p. 850). Pea aphid high in alfalfa in Colorado, North Dakota and Minnesota. (pp. 851-852). LYGUS BUGS increasing in alfalfa seed fields in some western states, and POTATO LEAFHOPPER yellowing alfalfa in Midwest. (p. 852).

ORCHARD MITES increasing and threatening in orchards in several sections of the Nation. (p. 854). OMNIVOROUS LOOPER outbreak on avocado in Los Angeles County, California, most serious since 1948. (p. 857).

GREEN PEACH APHID building up rapidly on several field crops in Washington and increasing on early potatoes in Colorado. (p. 858). IMPORTED CABBAGEWORM larvae severely damaged cabbage in many northwestern Ohio counties. (p. 859).

BOLL WEEVIL increasing slowly in South Carolina and increased considerably in some southern Alabama counties. Continues relatively light in other areas. (p. 862). BOLLWORMS considered number one pests of cotton in western Tennessee; infestations heavy for time of year and considerable damage occurring. Infestations expected to become more general and severe in Louisiana within next few days. (pp. 862-863).

MOSQUITOES annoying to livestock and man in Vermont, Oklahoma, Texas and Nevada. HORN FLY numerous and troublesome to livestock in Oklahoma, Michigan, North Dakota and Utah. (p. 871).

DETECTION

New State records were a FLEA BEETLE (*Systema frontalis*) (p. 861) and a LEAF BEETLE (*Derocrepis erythropus*) (p. 867) in Delaware, and EUROPEAN CHAFER in Pennsylvania (p. 874). New county records were PEA LEAF WEEVIL in Jackson County, Oregon (p. 853), and LOCUST LEAF MINER in Iroquois County, Illinois (p. 867).

CORRECTIONS

See page 875.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 870).

Reports in this issue are for week ending July 19, unless otherwise indicated.

WEATHER OF THE WEEK ENDING JULY 22

Typical summer weather continued as seasonal storms periodically raged from the Great Plains eastward, and mostly dry, hot days, and cool nights were the order for the Far West. Average temperatures for the week departed very little from normal; the largest departures on either side being only 7°. Daily maxima over 90° were generally restricted to the southern half of the Nation as the period opened, but were being observed in all areas by the 19th. States east of the Mississippi underwent a cooling trend during the weekend, while 100° heat surged into the northern Rockies and Plains. The Eversoll Ranch in the southeast corner of Colorado recorded a 110° high, nearly as warm as the hottest, 114° on the 21st at Needles, California, where the temperature never went below 82°. A frosty 25° from Bondurant, Wyoming, was the coolest reported.

Precipitation was almost nil in California and Nevada, and mostly limited to widely scattered showers over the remainder of the Far West. However, rain on 2 or 3 days along the Pacific Northwest coast left totals to over 2 inches. At the close of the period the Phoenix, Arizona, Airport had its first measurable precipitation in nearly 3 months. Rainfall totals were quite variable over the eastern half of the Nation, ranging from none in sections of Texas, North Carolina, and Virginia to over 6 inches in Arkansas and a strip from southern Minnesota into northern Indiana. On the 16th, torrential rains swamped the Chicago, Illinois, area, and even heavier downpours of 8.35 inches in 12 hours at Hot Springs, Arkansas, led to local flooding. While hailstorms plagued the communities of Harris and Estherville, Iowa, on the 18th, an afternoon thundershower dumped 4.15 inches of rain on Reinbeck, Iowa. That same day, heavy damage was sustained in the areas of Austin and Albert Lea, Minnesota, by a rampaging tornado, while over 4 inches of rain flooded the northern half of Huntsville, Alabama. Severe storms continued with equally punishing results on the 19th. Moline, Illinois, had 70 m.p.h. wind-whipped rains of 2 inches in only 45 minutes. A gas station was tornado-damaged in Dayton, Ohio. Three buildings were unroofed and four funnels sighted near storm wracked Chicago, Illinois. The Coast Guard Station at Waukegan, Illinois, measured a thunderstorm-triggered seiche of 6.4 feet; the wave moved westward across Lake Michigan.

Weekend weather reached severe proportions locally in the East Coast, Ohio Valley, and Great Lakes States. Showery weather in southwestern Connecticut left 2.50 inches at Bridgeport, on the 21st, while Chicago, Illinois, was again hit with large hail and heavy rains which caused power outages, uprooted trees, capsized boats, and flooded roads. Unofficial reports of 5 to 8 inches of rain were received from Hammond, Indiana, and hailstones to golf-ball-size fell in Florida and near Mobile, Alabama, during stormy periods. Hail near Montello, Wisconsin, stripped leaves from trees in a 2-mile wide path on the 21st. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WISCONSIN - Grasshoppers range 30-60 per square yard in portions of western Dane, southern Lafayette, southern Grant, southern Green and southern Rock Counties; numerous in Pepin, Marquette, and portions of Columbia and Waushara Counties; however, potential is great. Feeding noted in marginal corn rows in Dane, Portage and Walworth Counties; some feeding on tobacco noted in Richland County and on soybeans in lighter soiled areas. Extensive feeding on soil bank fields in western Dane County caused 50 percent defoliation in one field and 80 percent in another field. Ranged third instar to adult in these fields; Melanoplus bivittatus dominant. Delayed grasshopper hatch evident in southwest area; second stage nymphs evident in some fields; populations in Ozaukee, Sheboygan, Manitowoc, Kewaunee, and Door Counties insignificant. Populations light in Shawano, Outagamie, and Winnebago Counties. Treatment reported only in Pepin County. (Wis. Ins. Sur.). MINNESOTA - Counts in southeast generally low; average six per yard, with 15 to over 20 per square yard in occasional field. In northwest, most 'hoppers in field margins, ditchbanks and recently cut alfalfa; M. femurrubrum 75 percent first instar, 25 percent second instar. Generally low in central district. In Benton and Sherburne Counties, ranged 15-25 per square yard in some field margins; movement into cropland observed in few fields. Fields should be checked; early treatment recommended. (Minn. Ins. Rpt.). NORTH DAKOTA - Survey in Cass, Barnes, Steele, Griggs, Foster, and Stutsman Counties showed average of four 'hoppers per square yard in margins and one in the field; averaged ten per square yard in field and 15 in margins of few scattered alfalfa fields in Barnes and Griggs Counties. Dominant species M. femurrubrum, M. bivittatus, and M. sanguinipes; most in second through fourth instar. Few M. sanguinipes and M. bivittatus adults noted. Habitats included alfalfa, small grains and soil bank lands. (Wilson). Rangeland survey in northern Billings County showed range of less than one to 20 per square yard (average six); M. sanguinipes, Ageneotettix deorum, Aulocara elliotti, and Eritettix spp. dominant. Ranged first instar to adult; most fourth and fifth instar. Marginal counts in cropland in McKenzie, Dunn, Mercer, and Oliver Counties ranged less than one to 20 per square yard (average six); field counts averaged three and ranged less than one to 15 per square yard. Most in fourth to fifth instar, but development ranged second instar to adult. M. bivittatus, M. sanguinipes, and M. packardii dominant species. 'Hopper counts on Snake Creek National Wildlife Refuge mostly noneconomic; however, up to 20 per square yard found. M. bivittatus and M. packardii dominant species. Few Camnula pellucida found in some grassy areas. (Brandvik). Counts negative to three per square yard in Pembina, Cavalier, Walsh, and Grand Forks Counties; however, up to 15 per square yard found in roadsides near Inkster, in soil bank land near Holmes and field margins near Walhalla. Dominant species M. sanguinipes in Pembina County and M. sanguinipes, M. bivittatus, and C. pellucida in latter three counties. (Olson).

SOUTH DAKOTA - Threatening grasshopper infestation on rangeland covers nearly all of western Custer County from Elk Mountain on north to Pilger Mountain on south; generally 8-12 per square yard, with as many as 20 per square yard in some spots. M. occidentalis, Aulocara elliotti, Trachyrachys kiowa, and Ageneotettix deorum species involved; 75 percent adults. Survey showed 30 nymphs per square yard in few small Camnula sp. egg beds west of Hill City, Pennington County, in Black Hills; ranged first to fourth instar. Cropland areas infested in parts of Shannon, Fall River, Pennington, Meade, Butte, Perkins, Ziebach, Haakon, Jones, Mellette, and Charles Mix Counties; alfalfa, soil bank fields and roadsides main infested habitats; heavy in some areas and some spraying underway. M. bivittatus, M. sanguinipes, M. differentialis, M. femurrubrum, and M. packardii dominant species, ranging first instar to adult. (Burge, Zimmerman). NEBRASKA - Fourth and fifth instars of M. femurrubrum and M. differentialis approximately 20 per square yard in Stanton County field margins. Populations range 4-10 per square yard in alfalfa in eastern part of State. (Bergman). KANSAS - Grasshoppers in field margins in southeast and east central areas vary from less than one to 15 per square yard; ranged less than one to six per square yard in fields in same area. Highest counts noted in Chautauqua, Wilson, Allen, Bourbon, Linn, and Anderson

Counties. Some feeding damage to corn and/or alfalfa noted in these counties. Species involved primarily M. femurrubrum, M. bivittatus, M. sanguinipes, M. differentialis; Syrbula admirabilis and Dissosteira carolina also present. (Peters). WYOMING - Controls applied under cooperative program to 91,000 acres in Goshen-Platte County area in vicinity of Guernsey, and to 44,000 acres in Niobrara County. Additional infestations reported in Niobrara, Crook, Weston, Park, Washakie, Carbon, Hot Springs, Goshen and Platte Counties. (Spackman). Adults averaged seven and nymphs 17 per 100 sweeps in alfalfa in Hot Springs, Washakie and Big Horn Counties. (Marks). UTAH - Grasshopper outbreak covers large area in Box Elder County from south of Snowville, west of Howell and south to tip of Promontory Point. Cropland and much rangeland involved. (Thornley, Knowlton). Infestation slightly above normal in Piute County. (Knowlton, Buck). Grasshoppers, 30 percent winged, causing spotted damage to gardens and alfalfa about Tooele, Tooele County, and in several areas of Carbon County. As cheat grass dries, more 'hoppers will move from rangeland to crops. (Knowlton). IDAHO - First M. sanguinipes adult of season noted at Boise and first adult of M. bivittatus in Dixie area. (Portman). NEVADA - Control programs on rangeland and crested wheat grass in Kings River Valley and Orovalda and Paradise Valley areas completed or in progress. Aulocara elliotti, M. sanguinipes and Oedaleonotus enigma averaged 30-40 per square yard over several square miles in Grass Valley, southern Humboldt and northern Pershing Counties. A. elliotti and M. sanguinipes averaged 25-30 and Aeoloplides minor 10-20 per square yard in Golconda area, Humboldt County. O. enigma averaged 40-60 per square yard in upper Clover Valley near Elko, Elko County, and Melanoplus sp. and O. enigma 4-10 north of Elko. Mating occurring in all areas. (Coop. Rpt.). Idiostatus sp. averaged 1-5 per square yard on rangeland in Orovalda area, Humboldt County. (Cooney, Lundahl). CALIFORNIA - M. marginatus nymphs heavy on pasture lands in Huasna, San Luis Obispo County, and medium in Fresno area, Fresno County. (Cal. Coop. Rpt.).

NEW MEXICO - C. pellucida ranged up to 100 per square yard in spots with 15-25 per square yard on approximately 1,700 acres of crop and rangeland in Chama area, Rio Arriba County; about 1,000 acres treated. Nymphs of several species ranged 40-100 per 100 sweeps in alfalfa in southern Bernalillo County; abundant on weeds along cropland borders in Curry County. (N. M. Coop. Rpt., July 12). Causing some damage to alfalfa in localized areas of Santa Fe County; nymphs ranged from 20 to over 100 per 100 sweeps. (N. M. Coop Rpt.). TEXAS - M. differentialis moderate to heavy in areas of Ellis County; moving from pastures into cotton. (Turney). ARKANSAS - Grasshoppers, mainly M. differentialis, averaged 20 per square yard on fescue in east Washington County, northwest; up to 50 per square yard observed in border infestations. (Warren). MISSOURI - Ample moisture in most areas diminished damage by Melanoplus spp. Damage to pastures and legumes evident in some dry, northeastern areas. Marginal damage to row crops noted throughout State. (Munson, Thomas, Wood). ILLINOIS - Melanoplus spp. varied 0.5-60 (average 19) per sweep in clover and alfalfa in northern half of State; heaviest in northwest. Many first instars still being found. (Ill. Ins. Rpt.). MARYLAND - Melanoplus spp. heavy in several recently cut alfalfa and red clover fields in Queen Annes and Talbot Counties. (U. Md., Ent. Dept.).

MORMON CRICKET (Anabrus simplex) - NEVADA - Only occasional specimens seen in Grass Valley, Pershing County, but reported heavy in mountains above valley floor. (Hampton, Lundahl).

CRICKETS - MINNESOTA - Reported in field margins and ditchbanks in western counties. Have not moved into cropland. Where numerous, prompt harvest of swathed grain recommended. (Minn. Ins. Rpt.). NORTH DAKOTA - Gryllus spp. observed in trace numbers on flax near Northwood, Grand Forks County. (Olson). ALABAMA - Numerous Gryllotalpa hexadactyla young forms burrowing in peanut and cotton fields in Geneva and Houston Counties; feeding on roots with no appreciable damage; ranged 1-5 per square foot in isolated areas. (Scott et al.). ARIZONA - Moderate migrations of Gryllus spp. to alfalfa occurred in Yuma, Maricopa, and Pinal Counties. Should be carefully watched if populations continue to increase. (Ariz. Coop. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - COLORADO - D. virgifera adults appearing in Logan County corn. (Jenkins). NEBRASKA - D. virgifera adult activity increasing throughout corn-growing area; leaf feeding very evident and damage to some silks evident. (Bergman). SOUTH DAKOTA - D. longicornis and D. virgifera causing varying degrees of damage throughout southeastern quarter of State. Populations low in Union County; little damage evident. Damage severe in Yankton and Charles Mix Counties; adults ranged 10-15 per corn plant in fields treated 2-4 successive years, especially in these two counties; undetermined number of larvae still developing. Localized infestation of rootworms reported in untreated, irrigated cornfield in Lawrence County; no definite population established, but root systems on samples severely damaged. Northern-most collection of rootworms to July 18 in Volga area, Brookings County; field not treated; 8-15 larvae per plant estimated; one pupa collected. (Hintz). MINNESOTA - D. longicornis adults emerged in small numbers in southern counties. Larvae still active; pupation very evident in some fields. (Minn. Ins. Rpt.). WISCONSIN - D. longicornis adults emerged July 17 in Richland and Dane Counties. Lodging about 30 percent in Richland County cornfield where adults prevalent and root systems severely damaged. (Wis. Ins. Sur.). MICHIGAN - First adult emergence of D. longicornis observed July 15 in Monroe County. (Wells). OHIO - D. longicornis larvae in corn at Washington Court House, Fayette County (Grover, Blair); no larvae noted in field of corn in Van Wert County (Oetzel, Lyon). D. longicornis adult emergence 50 percent in 75-acre cornfield in Wyandot County, continuously in corn for 36 years and with 13-year history of control application; larvae averaged 22 per plant. Adult emergence in Seneca, Wood, Henry and Fulton Counties ten days behind that in Wyandot County; larvae found in treated and untreated corn in most northwestern counties. (Blair, Guthrie). D. longicornis averaged less than ten larvae per plant in treated corn in Urbana, Champaign County; nonexistent in treated corn in Union County. (Blair). D. undecimpunctata howardi adults numerous in Lawrence County cornfield. (Crawford, Blair). IOWA - D. virgifera damaging spring treated corn in Clay County. Severely damaged corn in southwestern Clay County. (Iowa Ins. Inf., July 15). MISSOURI - D. longicornis adults emerging in central and northern areas; populations light. D. virgifera adults ranged 2-6 per plant in extreme northwest area. (Munson, Thomas, Wood).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Collected at altitudes up to 1,000 feet in Berrien County by research plane; apparently favorable wind currents of major significance. Most of population now relatively inactive at base of corn leaves and in grass clumps. Aerial spraying against summer adults being rapidly completed; completed on over 6,000 acres in Berrien County July 18. Total of 2,880 acres to be spot treated in Ottawa, Kent, and Ionia Counties. (Ruppel, Lovitt, Cath). OHIO - New regulated areas are Washington and Tiffin Townships, Defiance County, and Pulaski and Jefferson Townships, Williams County. Adult emergence almost complete; feeding damage on decline. Beetles expected to move to hibernation places and become inactive. (Porter). ILLINOIS - None found in survey of 40 corn fields mostly bordering oats which were ripe or had been cut, 15 oat fields still green, and 5 grassy areas bordering on ripe oats in Kendall, Will, Grundy, Livingston, Kankakee, Ford, and Iroquois Counties. (Ill. Ins. Rpt.). NEW MEXICO - Surveys made in grain fields in Quay, Curry, and Roosevelt Counties during May and June negative for this species. (N. M. Coop. Rpt.).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Adults moderate on field corn in Worcester County. (U. Md., Ent. Dept.).

CORN SILK BEETLE (Luperodes brunneus) - ALABAMA - Destroying silks on approximately one quarter acre of corn in Bibb County. (Odom).

POTATO FLEA BEETLE (Epitrix cucumeris) - NORTH DAKOTA - Trace numbers noted on flax near Northwood, Grand Forks County, and Pillsbury, Barnes County. (Olson; N. D. Ins. Sur.).

SAP BEETLES - DELAWARE - Carpophilus lugubris and C. antiquus common in aphid-infested corn. (Burbutis, Evans). OHIO - Glioschrochilus quadrisignatus adults infesting sweet corn in Van Wert County. (Holtkamp). WISCONSIN - Few adult

C. lugubris feeding on European corn borer frass on field corn in Mazomanie area, Dane County. Populations probably not sufficiently high in any one area to be serious threat. (Wis. Ins. Sur.).

JAPANESE BEETLE (*Popillia japonica*) - MARYLAND - Adults prevalent in several corn and soybean fields in Frederick, Howard, and Queen Annes Counties. (U. Md., Ent. Dept.). OHIO - Adults on corn at Circleville, Pickaway County. (Hamrick, Blair). Numerous on corn, alfalfa, red clover and weeds in Lawrence County July 11. (Crawford, Blair).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Extremely heavy hatch-out noted southeast of Dothan, Houston County, in corn and Bahia grass; most damage to wild-coffee weed. Adults ranged 10-800 per square foot; light infestations noted within city limits of Dothan. Small hatch-out noted near Hartford, Geneva County. (Kimbrough, Brantley, Scott).

SORGHUM WEBWORM (*Celama sorgiella*) - OKLAHOMA - Averaged 52 per 100 heads in Muskogee County; lighter counts of 6 per 100 heads noted in Marshall County. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Earliest larvae full grown in Hudson Valley; pupae readily found July 12. Damage in whorls and all larval stages present in 15-20 plants in 100 in untreated field at Poughkeepsie. Fourth and fifth stages generally in stalks above ears in Ulster County. (N. Y. Wkly. Rpt., July 15). PENNSYLVANIA - Infestation 5 percent on tasseling corn in Clarion County. (Adams). DELAWARE - Blacklight trap collections remain low in Sussex County. First newly hatched egg mass and first-stage larvae of second generation found July 16 on corn in eastern Kent County. (Burbutis, Evans). MARYLAND - Whorl and tassel infestations generally light except for several moderate to heavy infestations in central areas. Moths increasing in blacklight trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). OHIO - Heavy in a Van Wert County sweet corn planting; some severe tunneling noted; fourth and fifth stages present. (Holtkamp, Lyon). Oviposition by overwintering adults terminated at Wooster, Wayne County. Many first-generation larvae in fifth stage. First-generation moths expected within next 2-3 weeks. (Schurr). ILLINOIS - First-generation survey showed average of 4.6 borers per 100 plants in Kankakee County and 6.4 in Iroquois County. Borers mostly fifth stage with few fourth and occasional third stage found. (Ill. Ins. Rpt.). IOWA - Percent development by stage in early corn at Ankeny, as follows: Third 4; fourth 14; fifth 30; pupae 46; emerged 6. Annual first-brood survey made July 10-12; generally, tallest corn in vicinity checked. Of 90 fields examined, 23.2 percent infested, with average of 1.2 borers per infested plant. State average 34 borers per 100 plants. Northwest generally most heavily infested area; infestation apparently spotty in remainder of State. As in 1962, more than 50 percent of second-brood moths will emerge by July 25, when most corn favorable for egg laying. (Iowa Ins. Inf., July 15). MICHIGAN - First-brood larval injury moderate in Wayne County. (Kidd). WISCONSIN - Most larvae in third stage in corn in Fox River Valley; ranged first to fifth stage in Fond du Lac County. Infestation fairly high in earlier planted fields and some treatment made in Grant and Waushara Counties. (Wis. Ins. Sur.). MINNESOTA - Trace pupation of first generation observed in southern counties. Egg laying continues in northwest, almost complete in west central district. Borer counts generally high in west central district; averaged 8.8 per plant. Numbers of borers per 100 plants, by district, as follows: South central 27; southwest 18; west central 370; central 96. (Minn. Ins. Rpt.). NORTH DAKOTA - Averaged 193 borers per 100 plants in Cass County, with average of 55 percent of plants infested. Populations 88 percent second stage, 12 percent third stage. (N. D. Ins. Sur.). SOUTH DAKOTA - Infested 4-100 percent of corn-stalks in southeast area; borers per 100 plants ranged 2-350, with development up to fifth stage. (Hintz). NEBRASKA - Approximately 50 percent pupae in Hall County. (Hill, Kindler). MISSOURI - Adults emerging in central and northern areas; 5-20 percent emergence noted in fields checked. (Munson, Thomas, Wood).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - KANSAS - Trace infestation found in research plots in Stafford County, south central; specimens found were pupae. (Painter).

CORN EARWORM (*Heliothis zea*) - ARIZONA - Caused medium to heavy damage to shoots of young corn in Graham County. (Ariz. Coop. Sur.). UTAH - No eggs noted on early corn beginning to silk in northern area; no larvae in early harvested market corn in Box Elder County. Moths low in blacklight trap at Ogden. (Dorst, Knowlton). TEXAS - Moderate on corn in Frio County. (Tex. Coop. Ins. Sur.; Prucia). OKLAHOMA - Counts per ten sweeps in alfalfa, 1-3 in east central and 4-5 in southwest. Counts of 48 per 100 heads noted in Muskogee County grain sorghum with 70 per 100 heads noted in Marshall County. About 12 percent of whorls infested in Kay County. (Okla. Coop. Sur.). KANSAS - Injury evident on 10 percent of corn plants in research plot in Stafford County, south central. (Painter). ALABAMA - Larvae ranged 2-4 in individual ears in many corn fields in Geneva and Houston Counties; 5-100 percent left corn ears (depending on age) to pupate. Some moths noted in corn and peanut fields. Infestation of corn and other susceptible crops will probably be serious within 5-10 days. Serious on corn in Houston County for 30-90 days, especially on young corn prior to silking. (White, Roney, Scott). FLORIDA - This species and *Feltia subterranea* infesting peanuts at Jay, Santa Rosa County, July 11. (Boyd; Fla. Coop. Sur.). OHIO - Moderate to heavy on sweet corn in Franklin County; many plants culled due to infestation. (Holdsworth, July 11). NEW YORK - None found in tassels or ear tips of corn in Hudson Valley, but search not extensive. (N. Y. Wkly. Rpt., July 15).

STALK BORER (*Papaipema nebris*) - MARYLAND - Moderate in marginal rows of field corn at Middletown, Frederick County. (U. Md., Ent. Dept.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - MICHIGAN - First adult (female) of season taken in blacklight trap in Macomb County. (Snow, Newman).

SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) - NORTH DAKOTA - Ranged 2-5 per sweep in flax in Walsh and Pembina Counties. Trace numbers noted on late planted flax near Pillsbury, Barnes County, and one per sweep on late flax near Christine, Richland County. (N. D. Ins. Sur.). MINNESOTA - Numbers on small grains declined in all districts except northwest, where counts averaged 100 per 100 sweeps. Aster yellows appearing in flax in northwest district; 1-5 percent of plants infested. (Minn. Ins. Rpt.). WISCONSIN - Probably this species, averaged 13 per sweep in Bayfield County grain. (Wis. Ins. Sur.).

RICE STINK BUG (*Oebalus pugnax pugnax*) - ARKANSAS - Averaged 28 adults and 8 nymphs per 100 sweeps in 18 rice fields checked weekly. This compares with 44 adults and 2 nymphs previous week. Species continues to become somewhat more scattered over rice fields. (Ark. Ins. Sur.).

SAY STINK BUG (*Chlorochroa sayi*) - NEVADA - Populations, mostly adults, light and spotted on wheat and barley in Diamond Valley, Eureka County. (Bechtel).

A STINK BUG - TEXAS - Moderate locally on rice in areas of Calhoun County. (Tex. Coop. Ins. Sur.; Bales).

RICE DELPHACID (*Sogatia orizicola*) - FLORIDA - Specimen recovered in sweepings made on rice on Kramer Island, Palm Beach County, June 18. No symptoms of hoja blanca found in 250-acre rice field. (PPC, South. Reg.).

CHINCH BUG (*Blissus leucopterus*) - NORTH CAROLINA - Present on milo and corn in Davidson County. (Bernhardt, Robertson, July 12). OKLAHOMA - Light damage to millet reported in Major County (northwest). Noted as light on grain sorghum in Nowata County (northeast). (Okla. Coop. Sur.). OHIO - Nymphs and adults moving from adjoining wheat fields to field corn in Wood County; present in six rows in one field. Controls applied. (Katterheinrich). Also moved from field of wheat into field corn in same county July 12. (Farison, Blair). Heavy populations moved from field of rye to field of sweet corn in Crawford County July 11. (Clemon, Blair)

CORN LEAF APHID (*Rhopalosiphum maidis*) - COLORADO - Light in whorls of corn and sorghum in Larimer, Weld, Adams, Morgan, Washington, and Logan Counties. (Jenkins). KANSAS - Several reports of infestations on sorghum and corn in Doniphan County, northeast. (Eshbaugh). Noted on corn in Republic County, north central (Painter), and on corn and sorghum in southeast and east central areas (Peters). NEBRASKA - Continues to build up in corn and milo in eastern and southern areas; minor damage reported in some sections. (Bergman). NORTH DAKOTA - Ranged 100-1,000 per corn plant in Cass County. (N. D. Ins. Sur.). WISCONSIN - Colonies increasing rapidly on tassels of field corn in southwest. Whitening of whorl leaves and browning of tassels evident on several plants in a Grant County field. *Orius insidiosus* present in new colonies in most instances and few lady beetles appearing. (Wis. Ins. Sur.). IOWA - Abundant on emerging corn tassels. (Iowa Ins. Inf., July 15). ILLINOIS - Colonies observed on occasional corn plants in east and northeast districts. (Ill. Ins. Rpt.). OHIO - Light on sweet corn in Franklin County. (Lyon). MARYLAND - Infestations spotty on field corn in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Very abundant on few plants in most corn fields throughout State. (Burbutis, Evans). NEW YORK - Conspicuous in occasional corn tassels in Hudson Valley July 13. (N. Y. Wkly. Rpt.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - NEVADA - Medium on wheat in Grass Valley, Humboldt County; heavy populations of syrphid fly larvae and lady beetle adults and larvae present. (Bechtel, Day, Lauderdale). Light, spotted populations on wheat and barley in Reese River, Lander County, and Diamond Valley, Eureka County. (Bechtel, Lauderdale). IDAHO - Present but seldom abundant in spring planted grain sampled in Kootenai and Benawah Counties. (Gittins). NORTH DAKOTA - Ranged from trace to 30 per 10 sweeps on oats in Cass County. (N. D. Ins. Sur.).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - All later-maturing heads in several grain sorghum fields 60-90 percent destroyed in Brazos River area of Burleson County. (Randolph). Adults emerged in significant numbers from seed heads of Johnson grass and sorghum collected June 11-July 15 in Lamb, Hale, Floyd, Hockley, Crosby, Dickens, Lynn, Gaines, Garza, and Terry Counties, northwest. Adults emerged from white tridens grass (*Tridens albescens*) collected in Garza County; this is a new host record. (Montoya).

WHEAT MIDGE (*Sitodiplosis mosellana*) - OHIO - Larvae light to moderate in wheat fields in Van Wert County; damaged kernels prevalent in scattered areas in field. (Lyon, Oetzel). Many wheat fields observed infested within past two weeks. (Holtkamp).

HESSIAN FLY (*Phytophaga destructor*) - KANSAS - Summer survey showed average percent stem infestations by area for 1963, compared with 1962, to be as follows: Northwest, 0.758 and 2.8; west central, 1.409 and 5.8; southwest, 0.105 and 0.3; north central, 5.657 and 13.5; central, 1.652 and 7.5; south central, 0.275 and 0.6; northeast, 3.458 and 5.2; east central, 0.416 and 4.8; southeast, 1.794 and 9.9. The 1963 survey showed lower average percent stem infestation than 1962, except for southwest area which remained about same. Reason for lower infestation due to high temperatures and low humidity at time of egg laying and increase in acreage of resistant varieties. Summarized by G. Reynolds. (Peters, Reynolds, Somsen).

WHEAT STEM MAGGOT (*Meromyza americana*) - WISCONSIN - Damaged about one percent of field of spring wheat in Bayfield County. (Wis. Ins. Sur.).

WHEAT STEM SAWFLY (*Cephus cinctus*) - OHIO - Larvae found in stems and stubble of wheat fields in Van Wert County; infestation 1-4 percent. Many wheat plants cut off. (Oetzel, Lyon). Larvae observed in wheat in Auglaize County. (Brown, Holdsworth).

THRIPS - OHIO - Heavy in field of corn near Montpelier, Williams County. Many lower leaves of plants heavily silvered in some fields. (Jones). NORTH DAKOTA - *Limothrips denticornis* ranged 5-25 per whorl on corn in Cass and Griggs Counties. (N. D. Ins. Sur.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - KANSAS - Severe on sweet corn research plots in Doniphan County, northeast; controls applied. (Eshbaugh). COLORADO - Increasing on corn in Weld, Adams, Morgan, Washington, and Logan Counties; mites on lower leaves and in some fields on fourth and fifth leaves. Light to moderate on lower leaves in Bent, Otero, Crowley, Prowers, and Pueblo Counties; heavy populations present on middle leaves in some Otero County fields. Populations light to moderate on second and third leaves in Mesa County; trace numbers present in Garfield County. (Jenkins, Bulla, Schweissing). ARIZONA - Spotty populations causing serious damage to some alfalfa in Maricopa County. Controls not entirely successful. (Ariz. Coop. Sur.).

A MITE - TEXAS - Heavy and killing milo plantings in experimental plots in Brazos County. (Randolph).

A CHINCH BUG (Blissus leucopterus insularis) - TEXAS - Heavy populations causing considerable damage to St. Augustine grass in Henderson County. (Horne). ALABAMA - Extremely light on lawns compared to previous years in Houston County. Considerable infestation noted on St. Augustine grass lawns in Foley, Baldwin County. (White, Roney, Terrell, Wilson).

A BURROWING BUG (Cyrtomenus mirabilis) - ALABAMA - Nymphs heavy in lawn grass in Irondale, Jefferson County. Some found in peanut fields. (Stewart, McGee, et al.).

SOD WEBWORMS (Crambus spp.) - OKLAHOMA - Damaging lawns throughout central portion of State. (Okla. Coop. Sur.). TEXAS - C. luteolellus causing heavy damage to lawn grasses in Burnet and Nueces Counties. (Tex. Coop. Rpt.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - OREGON - Damaging canary grass pastures in Coos County. (Every).

A BURROWING WEBWORM (Acrolophus sp.) - NORTH CAROLINA - Killed practically complete lawn in McDowell County. Det. by D. A. Mount. (Love, July 12).

CUTWORMS - ALABAMA - Feeding heavily in zoysia grass lawns. (Barwood, Davis, et al.).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - NEVADA - Heavy on Artemisia tridentata north of Elko, Elko County. (Earnist).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - COLORADO - Mounds number 15 per acre in pastures near Great Divide, Moffat County. (Hantsbarger).

BANKS GRASS MITE (Oligonychus pratensis) - IDAHO - Infestation general on intermediate wheatgrass plantings in Prairie-Dixie area; considered noneconomic as no damage apparent. (Portman).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Occasionally heavy in alfalfa in Dona Ana, Roosevelt and Eddy Counties. (N. M. Coop. Rpt., July 12). COLORADO - Present in alfalfa in Prowers, Bent, and Otero Counties; 10-60 per 100 sweeps. (Schweissing). OKLAHOMA - Generally light in east central area; ranged 50-500 per 10 sweeps. Counts of 15-500 per 10 sweeps noted in Kay County (north central) and 100-900 per 10 sweeps in southwest. (Okla. Coop. Sur.). KANSAS - Found in all alfalfa examined in southeast and east central areas; ranged from trace to 25 per sweep. (Peters). NEBRASKA - Averaged two per ten sweeps in alfalfa in Butler, Colfax, and Stanton Counties. (Bergman). SOUTH DAKOTA - Averaged 58 apterous forms per 10 sweeps in alfalfa surveyed in Yankton County; ranged 2-20 apterous forms in Bon Homme and Charles Mix Counties. Only 2 alate forms found during survey. (Hintz).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Population decline noted; however, few spot infestations remain in Yuma County. (Ariz. Coop. Sur.). UTAH - Caused some local damage to number of alfalfa fields in Carbon County. (Knowlton, Horne). NEVADA - Ranged 4-30 per sweep in alfalfa hay and seed fields in Reese River,

Nye County, and Diamond Valley, Eureka County. (Bechtel, Lauderdale).
COLORADO - Ranged 2,000-10,000 per 100 sweeps on alfalfa in Garfield, Mesa and Montrose Counties and 50-5,000 per 100 sweeps in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Bulla, Schweissing). WYOMING - Ranged 400-1,000 per 100 sweeps in Big Horn Basin alfalfa. (Marks). NORTH DAKOTA - Built up to 2,000-4,000 per sweep in alfalfa in southeast. (N. D. Ins. Sur.). MINNESOTA - Average counts per 100 sweeps, by district, as follows: South central 10,117; southwest 8,486; southeast 2,500; central 2,744; west central 2,000. Predator counts increased in most areas but have had little effect on reducing aphid numbers. (Minn. Ins. Rpt.). ILLINOIS - Relatively light in northern area clover and alfalfa; 300-2,200 (average 950) per 100 sweeps. (Ill. Ins. Rpt.). MARYLAND - Heavy in 3 alfalfa fields in Snow Hill area, Worcester County; averaged over 500 per sweep. (U. Md., Ent. Dept.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Ranged 200-300 per 100 sweeps in alfalfa in Yuma, Maricopa and Pinal Counties. Controls applied to some alfalfa seed fields in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Counts per 100 sweeps by county, as follows: Southern Curry 50-200; Roosevelt 40-120; Bernalillo 40-150; Eddy 30-90. As high as 200 or more adults and nymphs per 100 sweeps on seed alfalfa in Eddy County. (N. M. Coop. Rpt., July 12). Adults and nymphs averaged 1-2 per sweep in alfalfa checked in Santa Fe County. (N. M. Coop. Rpt.). NEVADA - Mostly nymphs averaged 15-40 per sweep in alfalfa hay fields in Diamond Valley, Eureka County, and adults 10 per sweep in seed fields in Reese River, Nye County. (Bechtel, Lauderdale). COLORADO - High in Mesa County alfalfa; 200-300 per 100 sweeps. Controls recommended in seed production fields. (Bulla). WYOMING - Adults averaged 78 and nymphs 45 per 100 sweeps in Big Horn Basin alfalfa fields. (Marks).

PLANT BUGS - MARYLAND - *Lygus lineolaris* adults ranged light to moderate in most alfalfa and clover fields. (U. Md., Ent. Dept.). WYOMING - *Adelphocoris lineolatus* adults averaged 30 per 100 sweeps in alfalfa in Big Horn Basin. (Marks).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - ILLINOIS - Adults vary 100-700 (average 325) per 100 sweeps in northern area clover and alfalfa. (Ill. Ins. Rpt.). IDAHO - Mostly adults in northern area, with summer aestivation underway. Many crops in Kootenai and Bonner Counties, especially clover and strawberries, still show signs of retardation as result of severe nymphal feeding. (Gittins).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Adults and nymphs increased noticeably in alfalfa in many areas; yellowing becoming pronounced. Ranged 2-60 per sweep in Grant, Crawford, Vernon, Richland and Fayette Counties; some treatment underway in Grant County. Ranged 4-5 per sweep in Bayfield County and reported numerous on alfalfa and clover in Sawyer County, alfalfa in Waushara County; yellowing of alfalfa noticeable in Wood County. Most found in alfalfa are half-grown nymphs; numerous adults collected in Dane County blacklight traps. (Wis. Ins. Sur.). ILLINOIS - Adults vary 200-8,000 (average 1,500) and nymphs 200-3,000 (average 900) per 100 sweeps in clover and alfalfa in northern area. (Ill. Ins. Rpt.). MISSOURI - Ranged 5-40 per sweep in northeast area; yellowing evident in fields throughout eastern part of State. (Munson, Thomas, Wood). OHIO - Adults averaged 3 per sweep in alfalfa at Wooster, Wayne County. (Treece). MARYLAND - Several injurious infestations present on alfalfa in Caroline, Frederick and Talbot Counties. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Populations apparently constant in alfalfa in Yuma, Maricopa and Pinal Counties; ranged 300-700 per 100 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Minor buildup in several Eddy County alfalfa fields; adults ranged 9-20 per 100 sweeps. (N. M. Coop. Rpt., July 12). TEXAS - Adults ranged 22-40 per 5 sweeps in Burleson County alfalfa. (Randolph).

LEAFHOPPERS - NEW YORK - Large numbers of unspecified species evident in most second-cutting alfalfa in Ulster County. Treatment recommended, particularly on new seedlings made in spring and fields surrounded by brush rows and woods. (N. Y.

Wkly. Rpt., (July 15). VIRGINIA - Unspecified species very light in alfalfa in Giles and Craig Counties; medium to severe in some Henry County fields. (Tarpley).

ALFALFA WEEVIL (*Hypera postica*) - NEVADA - Heavy larval populations retarded second-crop alfalfa in Lovelock, Pershing County. Preliminary investigations indicate adult resistance to certain chlorinated hydrocarbon in areas of Lovelock, Pershing County, and Gardnerville, Douglas County. (Arnett). WYOMING - Adults ranged 7-10 and larvae averaged 160 per 100 sweeps in alfalfa in Big Horn Basin. (Marks). VIRGINIA - Larvae averaged 24 and adults 3 per 100 sweeps in 2 alfalfa fields in Henry County July 16; no larvae and 4 adults in 2 fields in Giles County, and no larvae and 2 adults in 2 fields in Craig County July 18. (Tarpley). MARYLAND - Adults and larvae very light to moderate on alfalfa in Frederick and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Adults feeding on young soybeans in Sussex County. This is new host record for species in State. Det. by R. E. Warner. Collected by W. A. Connell, June 12. (Burbutis, Evans). NEW YORK - Feeding essentially complete on alfalfa in Ulster County. Adults readily found on ground in fields where feeding severely damaged first cutting. (N. Y. Wkly. Rpt., July 15).

PEA LEAF WEEVIL (*Sitona lineata*) - OREGON - Collected from clover in Jackson County; this is a 175-mile extension of known infestation, and a new county record. (Every).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - OKLAHOMA - Noted as very light on soybeans throughout Muskogee, Sequoyah and Le Flore County areas. (Okla. Coop. Sur.). ARKANSAS - Small numbers present in most soybean fields; foliage feeding remains low. One field in Lonoke County, east central, treated. (Ark. Ins. Sur.).

BLISTER BEETLES (*Epicauta* spp.) - ARKANSAS - Spot infestations of various species appearing in few soybean fields over State. (Ark. Ins. Sur.). IOWA - Lower leaves on 10 acres of corn eaten by *Epicauta* sp. in Clinton County; present on soybeans in Dallas County. (Iowa Ins. Inf., July 15). WISCONSIN - *E. pestifera* and *Epicauta* sp. adults collected in alfalfa in Grant County. (Wis. Ins. Sur.). ILLINOIS - Common on legumes in northern half of State; *E. pestifera* and *Epicauta* sp. most common, with some *E. fabricii* also present. (Ill. Ins. Rpt.). OHIO - *Epicauta* sp. moderate to heavy (30-50 per plant) on one quarter of an acre of field corn in 100-acre field in Mercer County. (DeBrosse).

THREE-SPOTTED FLEA BEETLE (*Disonychya triangularis*) - NORTH DAKOTA - Trace numbers swept from soybeans near Amenia and Kindred, Cass County. Damage indicative of flea beetle feeding observed. (N. D. Ins. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MARYLAND - Averaged 3 larvae per 10 sweeps on alfalfa at Snow Hill, Worcester County. (U. Md., Ent. Dept.). VIRGINIA - Averaged 4 per 100 sweeps in field of alfalfa in Giles County. (Tarpley). WISCONSIN - Larvae numerous in alfalfa in southwest; ranged 1-3 per sweep generally. (Wis. Ins. Sur.). COLORADO - Trace numbers appearing in alfalfa in Prowers, Bent, Crowley and Pueblo Counties. (Schweissing). NEW MEXICO - Larvae ranged 3-12 per 100 sweeps in Eddy County alfalfa and 3-8 in Bernalillo County. (N. M. Coop. Rpt., July 12).

BEET ARMYWORM (*Spodoptera exigua*) - TEXAS - Building up rapidly in alfalfa in Burleson and Brazos Counties; larvae ranged 8-22 per 5 sweeps. Causing noticeable "ragging". (Randolph).

WEBWORMS (*Loxostege* spp.) - OKLAHOMA - Light counts of *L. similalis* per 10 sweeps noted by area as follows: east central 0-1; southwest 2; north central 3-5. (Okla. Coop. Sur.). MISSOURI - Heavy *L. similalis* adult flights still noted in northern areas. Small larvae present on alfalfa and late soybeans in northeast. (Munson, Thomas, Wood). KANSAS - *Loxostege* spp. infestations ranged trace to 75 percent of alfalfa plants webbed in southeast and east central areas. Heaviest infestation observed in Allen County where estimated 75 percent of plants showed feeding damage and webbing. (Peters). NORTH DAKOTA - Trace numbers of *L.*

sticticalis larvae noted in field of alfalfa near Inkster, Grand Forks County. (Olson).

RED-NECKED PEANUTWORM (Stegasta basqueella) - GEORGIA - Light to moderate on peanuts in southern portion of State. (Johnson).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Numbers remain generally low on soybeans, but small larvae found in most fields. (Ark. Ins. Sur.).

Peanut Insects in Alabama - Absence of common peanut insects most noticeable in 3 representative peanut-growing counties of Houston, Henry and Covington. No Heliothis zea, Anticarsia gemmatalis, Stegasta basqueella or cutworms reported. Inspection in Geneva and Houston Counties showed only few leafhoppers and grasshopper nymphs feeding. However, Heliothis zea moths noted as extremely heavy; 5-30 per acre in Houston County. Heavy egg laying expected. (Bond, Kinard, Mathews, Hartzog, Kimbrough, Brantley).

SPIDER MITES (Tetranychus spp.) - MARYLAND - Several threatening populations noted on soybeans in Caroline, Queen Annes and Talbot Counties. (U. Md., Ent. Dept.).

FRUIT INSECTS

ORCHARD MITES - MAINE - Panonychus ulmi numbers high in most areas; 50-60 per leaf on untreated check trees in Monmouth area. Egg deposition will continue at high levels unless weather becomes adverse. Tetranychus telarius moderate locally; colonies much higher in trees and considerably larger than normal for time of year. (Boulanger, July 13). VERMONT - P. ulmi extremely high in some orchards with severe bronzing evident on Red Delicious apples. (MacCollom). CONNECTICUT - P. ulmi and T. telarius at low levels and controlled in commercial orchards; P. ulmi apparently developing at faster rate. Untreated trees severely bronzed and P. ulmi eggs found in calyx end of apples. (Savos). NEW YORK - P. ulmi building up where ground cover good and T. telarius moving up into trees in Orleans County. (N. Y. Wkly. Rpt., July 15). NEW JERSEY - Controls recommended where P. ulmi and T. telarius building up on peach. (Ins.-Dis. Newsltr., July 16). MARYLAND - Tetranychus spp. and P. ulmi building up on apples in Hancock area, Washington County; bronzing of foliage noted in some orchards. (U. Md., Ent. Dept.). INDIANA - Survey of orchards in Linton area showed T. telarius moving into apple trees from newly mowed ground cover; only found on low limbs. Careful checking during next month urged. (Hamilton, July 16). MICHIGAN - P. ulmi heavy in southeastern orchards; 15 adults per leaf common. Moderately heavy in Berrien County orchards. General buildup of T. telarius in eastern area; light to moderate generally in southwestern area. (Siefert, Tatter). Aculus cornutus reported on sour cherries in Berrien County. (Tatter). MISSOURI - All areas of State report spider mites present as threat. Most are T. telarius in northwestern area with a few P. ulmi also present. In southeast, most appear to be P. ulmi with a few T. telarius. Mites will continue to be persistent problem for remainder of season. (Wkly. Rpt. Fr. Grs., July 17). KANSAS - T. telarius causing severe leaf discoloration and leaf drop on peaches in Sedgwick County, south central. (Eshbaugh). COLORADO - T. telarius populations in orchards of Garfield and Mesa Counties light to moderate; 1-15 per leaf. Variation due to application and effectiveness of controls. (Bulla). TEXAS - Undetermined spider mites causing problems in several widely separated areas of State on pecan, peach, pear and other fruit trees. (Tex. Coop. Rpt.). NEW MEXICO - Tetranychus spp. building up in Rio Arriba County orchards; growers preparing to treat. (N. M. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MAINE - Emerged from apples July 7 at Highmor Farm; numbers quite low but should increase during week of July 14. Emergence from blueberries began June 22 at Jonesboro and peaked June 26; adult numbers diminished rapidly after that date. (Boulanger). VERMONT - Recent rains resulted in increased emergence. (MacCollom). RHODE ISLAND - Adults collected on sticky boards in Coventry, Kent County. (Mathewson). CONNECTICUT - Emergence

began peak; maggots usually present in large numbers during last 2 weeks of July. Controls at 7-day intervals recommended. (Savos). NEW YORK - Emergence continues heavy in Niagara County; numbers indicate possible peak July 8-10. (N. Y. Wkly. Rpt., July 15). NEW JERSEY - Emergence now at crest of peak activity in blueberry-growing area. During period July 6-15, total of 411 adults trapped in wild area. For similar period in same area in 1962, only 349 trapped. Catches also higher in cultivated blueberry fields. Maggots are now showing heavily in wild samples (39 percent week of July 9) but still extremely scarce in cultivated samples. Controls recommended at 10-day intervals. Adult emergence in orchard noted at Cranbury on July 10; at high level since in same orchard. (Ins.-Dis. Newsltr., July 16). OHIO - Adults increasing substantially at Wooster, Wayne County. (Neal, Frazier). MICHIGAN - Adults common in Berrien County blueberry fields. (Siefert, Tatter). WISCONSIN - Counts very low for most orchard locations; few adults appearing in Winnebago County. Total of 47 taken in 2 traps at Madison July 9-15. (Wis. Ins. Sur.).

APPLE APHID (*Aphis pomi*) - MAINE - Numbers substantially below normal in most areas. (Boulanger, July 13). VERMONT - Continues prevalent on water sprouts and terminals in some blocks. (MacCollom). CONNECTICUT - Still easily found in many trees but expected to be fewer as terminal foliage hardens. Controls good in commercial orchards. (Savos). NEW YORK - Built up quickly in number of orchards on sucker growth in Clinton County; controls required. Persistent where soil moisture is good and growth succulent in Orleans County. (N. Y. Wkly. Rpt., July 15). NEW JERSEY - Evident in some orchards where inadequate coverage permits buildup in centers and tops of trees. (Ins.-Dis. Newsltr., July 16). MICHIGAN - Moderate to heavy in Berrien County orchards. (Tatter). NORTH DAKOTA - Light infestation on apple foliage at Jamestown probably this species. (N. D. Ins. Sur.).

PEAR PSYLLA (*Psylla pyricola*) - WASHINGTON - Numbers low but slowly increasing. (Shanks).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - NORTH CAROLINA - On apple fruit in Greene County. (Grant, Robertson, July 12). NEW MEXICO - Serious on apple trees not properly treated in Rio Arriba County. (N. M. Coop. Rpt.).

GLOBOSE SCALE (*Lecanium prunastri*) - PENNSYLVANIA - Heavy on peach tree in Wayne County July 2 and heavy on a few peach trees in Chester County July 7. (Andreychik, Slesman).

CODLING MOTH (*Carpocapsa pomonella*) - NEW YORK - Activity low in Niagara County; earliest first-brood larvae leaving fruit. (N. Y. Wkly. Rpt., July 15). CONNECTICUT - Larval injury found in untreated trees at Storrs and New Haven. (Savos). MARYLAND - Second-brood entries in apples July 17 at Hancock, Washington County. (U. Md., Ent. Dept.). WISCONSIN - Few adults taken in blacklight traps; few reported in Bayfield County. Four taken in trap at Madison and 1 in trap at Middleton July 1-15. (Wis. Ins. Sur.). MISSOURI - Few new entries in untreated fruit in southeast area; single "sting" noted in west-central area. (Wkly. Rpt. Fr. Grs., July 17).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - CALIFORNIA - Adults light in peach trees in Hanford, Kings County. (Cal. Coop. Rpt.). MISSOURI - Twig infestations 10 days old in west central area. Most twigs in southeastern area hardened to point where attack no longer a threat. Apparently good control in Campbell area. (Wkly. Rpt. Fr. Grs., July 17). CONNECTICUT - Single larva found on untreated peach at New Haven. (Savos).

PEACH TREE BORER (*Sanninoidea exitiosa*) - INDIANA - Adult emergence about 75 percent in orchards on sandy soils but only 25 percent in orchards on clay loam in Vincennes area, Knox County. (Hamilton, July 16). MICHIGAN - Adults numerous in Berrien County; moderate in Wayne County. (Tatter, Kidd).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - NEW YORK - Empty pupal case noted in Clinton County July 9; second-brood adult collected following day at

another location. First adults in bait traps in Niagara County noted July 8 with numbers increasing rapidly by end of week. (N. Y. Wkly. Rpt., July 15). MARYLAND - Second-brood larvae light in orchards in Hancock area, Washington County. (U. Md., Ent. Dept.). MICHIGAN - No general problems reported in fruit areas to date. (Siefert, Tatter).

PEAR-SLUG (Caliroa cerasi) - NEVADA - Medium to heavy on cherry and pear in Douglas and southern Washoe Counties. (Bechtel, Lauderdale).

PLUM CURCULIO (Conotrachelus nenuphar) - OHIO - First summer-brood adults emerged from soil in Wayne County, northeast. (Neal).

BLACK PECAN APHID (Melanocallis caryaefoliae) - TEXAS - Locally heavy on yard pecan trees in Maverick County. (Watts).

OBSCURE SCALE (Chrysomphalus obscurus) - TEXAS - Light to moderate in small pecan orchard in Ellis County. (Turney).

A CERAMBYCID BEETLE - NORTH CAROLINA - Larvae infesting 50-75 young pecan trees in Duplin County; all trees dying. (Warren, July 12).

FALL WEBWORM (Hyphantria cunea) - GEORGIA - Light to moderate on pecans in central and southern areas. (Johnson).

GRAPE BERRY MOTH (Paralobesia viteana) - MISSOURI - Three-fourths to full-grown larvae in Steelville area. Many left fruit to pupate in Rosati area. Controls to intercept third brood recommended August 1. (Wkly. Rpt. Fr. Grs., July 17).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Adults common on grapes in Prince Edward County. (Peery, July 12). OHIO - Feeding on grape in Gallipolis, Gallis County. (Polivka).

A LEAF ROLLER MOTH (Sparganothis sp.) - NEW JERSEY - Flight very heavy; hatched and unhatched eggs readily found and a few larvae found in cranberries. Controls recommended. (Ins.-Dis. Newsltr., July 16).

BLACK-HEADED FIREWORM (Rhopobota naevana) - NEW JERSEY - Troublesome on some cranberry bogs. (Ins.-Dis. Newsltr., July 16).

CRANBERRY FRUITWORM (Acrobasis vaccinii) - CONNECTICUT - Problem; feeding on blueberries at Vernon. (Savos).

FIREWORMS - WISCONSIN - Moderate and feeding on cranberries in Sawyer County. (Wis. Ins. Sur.).

Citrus Insect Situation in Florida - Mid-July - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 69 percent of groves (norm 65 percent); 49 percent economic (norm 41 percent). Population above average and increasing in all districts; will continue high through August. Highest districts Bartow, upper east coast, west coast, Brooksville and ridge. TEXAS CITRUS MITE (Eutetranychus banksi) infested 66 percent of groves (norm 55 percent); 44 percent economic (norm 33 percent). Statewide population reached summer peak at average level and will decline. However, Bartow, Orlando, Gainesville and Brooksville districts are expected to show increases. Highest districts presently ridge, upper east coast, Orlando, Indian River and Bartow. CITRUS RED MITE (Panonychus citri) infested 71 percent of groves (norm 77 percent); 33 percent economic (norm 50 percent). Population below normal but increasing. Infestations will be widespread and some will be heavy. Highest districts upper east coast, Orlando, and Indian River. PURPLE SCALE (Lepidosaphes beckii) infested 72 percent of groves (norm 78 percent); 15 percent economic (norm 14 percent). Population near average and little change expected. Few infestations will be important. Highest districts Bartow and ridge. CHAFF SCALE (Parlatoria pergandii) infested 55 percent of groves; 18 percent economic. GLOVER SCALE (Lepidosaphes gloverii) infested 52

percent of groves; 22 percent economic. Population above average and will remain near current level. Moderate to heavy infestations occur in scattered groves undamaged by cold. BLACK SCALE (Saissetia oleae) infested 44 percent of groves (norm 60 percent); 25 percent economic (norm 39 percent). Statewide population reached summer peak below average level and will decline. Heavy infestations mostly in Indian River and ridge districts. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - One male and 2 female specimens trapped in Miami, Dade County, June 17. By end of month, adults and larvae were collected at 7 locations in immediate vicinity of Miami International Airport. Traps in Dade County increased by 1,000 and inspected on shorter intervals. Aerial bait spray applied to 2,335 acres; 62 acres treated with ground equipment. All known infested properties treated and fruit pulled, treated and buried. (PPC, South. Reg., June Rpt.) Three collections (2 females and 1 male) made in Miami July 15. (Creamer, Sherron, Healy).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Continues heavy in Yuma County. Controls applied to some citrus with young growth because of continued feeding by this pest. (Ariz. Coop. Sur.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Moderate on Citrus sinensis at Leesburg, Lake County. (Bentley, June 26).

TEXAS CITRUS MITE (Eutetranychus banksi) - FLORIDA - Infested 4,800 citrus trees at Dover, Hillsborough County. (Simmons, June 26).

STINK BUGS - CALIFORNIA - Euschistus conspersus heavy on apricot and fig trees in Sacramento, Sacramento County. Stink bugs more numerous on fruit trees and berry bushes this year than for several years. Infestations seem later than usual. (Cal. Coop. Rpt.).

OMNIVOROUS LOOPER (Sabulodes caberata) - CALIFORNIA - Severe on avocado trees in La Habra Heights, Los Angeles County; most serious outbreak in avacodos since 1948. Large larvae parasitized by a fungus but early instars seem unaffected. (J. Beutel).

TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Heavy flight first 2 weeks of July and exceptionally rapid buildup of apterae on potatoes, sugar beets and other field crops in eastern area. (Landis). COLORADO - Increasing on early potatoes in Weld County; 16 to 10,000 per 100 leaves. Reported increasing in some fields of late potatoes. In fields checked, only trace numbers found with 0-2 winged aphids per 100 sweeps. (Berry, Simpson, Jenkins). DELAWARE - Common on peppers in eastern Kent County. (Burbutis, Evans).

POTATO APHID (Macrosiphum euphorbiae) - OREGON - Light on potatoes in Jefferson County. (Every).

Potato Aphids in Maine - Population increase on untreated and treated potato foliage at Presque Isle vicinity, Aroostook County, continued at usual rate. From 23 to 100 percent of plants now infested, depending on location and time of planting (3-leaf method used). Averaged 0.25 to 34 aphids of all species on 3 leaves per plant. The 34-aphid average for field of early planted potatoes is considered an appreciable infestation approaching threshold intensity for feeding damage that may be reflected as reduced yield. Population on Aroostook Farm about same size for time of year as during past 2 years, but populations are substantially larger on commercial plantings observed. BUCKTHORN APHID (Aphis nasturtii) and POTATO APHID (Macrosiphum euphorbiae) predominate with spotty infestations of GREEN PEACH APHID (Myzus persicae) and traces of FOXGLOVE APHID (Acyrtosiphon solani). (Shands et al.).

TOMATO PSYLLID (Paratrioza cockerelli) - COLORADO - Not found in tomato fields checked in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Schweissing).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Controls needed in Weber and northern Davis Counties on potato and tomato fields this season. (Knowlton). COLORADO - Trace numbers in potato fields in Weld County; 10-20 per 100 sweeps. (Jenkins). OHIO - Light to moderate in many central counties; most are new adults. Major feeding damage believed complete. (Lyon). RHODE ISLAND - Second-generation adults active in field in Kingston, Washington County. (Kerr).

BLISTER BEETLES - UTAH - Numerous in potato field at Hatch, Garfield County. (Knowlton, Lindsay). OKLAHOMA - Several species moderate to heavy and causing some concern to home gardeners in State. (Okla. Coop. Sur.). RHODE ISLAND - Epicauta pestifera active on potatoes in Washington, Kent County. (Sorensen, Mathewson).

THREE-LINED POTATO BEETLE (Lema trilineata) - RHODE ISLAND - Appearing on potato plants in Washington, Kent County. (Mathewson, Sorensen).

POTATO TUBERWORM (Gnorimoschema operculella) - CALIFORNIA - Light on potatoes in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

TOMATO FRUITWORM (Heliothis zea) - OKLAHOMA - Some buildup evident in tomatoes in Bixby area. (Okla. Coop. Sur.). UTAH - Egg counts conducted each week since mid-June show extremely low numbers in representative fields in Box Elder, Davis and Weber Counties. (Knowlton).

TOMATO HORNWORM (Protoparce quinquemaculata) - COLORADO - Adults regularly taken in light trap in Otero County; larval damage noted in tomato fields. (Schweissing).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Adults still active in fields July 15 at Cedarville. Peppers heavily infested in 3 fields in Cedarville and Cohansy area; most serious in 2-acre field with woods on 2 sides. (Ins.-Dis. Newsltr., July 16).

SQUASH VINE BOORER (Melittia cucurbitae) - NEBRASKA - Light to moderate damage on vine crops in Douglas and Lancaster Counties. (Bergman).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW YORK - Adults very active in Ontario and Yates Counties; eggs and small larvae plentiful. Up to 5 larvae per plant. Hatching in Niagara County. (N.Y. Wkly. Rpt., July 15). OHIO - Infestations statewide; severe damage observed on cabbage plants in many northwestern counties. Up to 4-5 larvae per plant noted. (Lyon). WISCONSIN - Large number of eggs observed on cabbage and kohlrabi foliage in Dane County field; hatching expected momentarily. Few larvae at edge of commercial cabbage planting in Columbia County. (Wis. Ins. Sur.). UTAH - Larval damage moderately serious in Wasatch County home gardens. (Knowlton).

CABBAGE LOOPER (Trichoplusia ni) - COLORADO - Averaged 5 larvae per 10 cabbage plants in Weld and Adams Counties; considerable leaf damage appearing. (Jenkins). NEW MEXICO - Damaged foliage of bell peppers, chili peppers and lettuce in home gardens in Mesilla Valley. (July 12). Causing considerable damage to cabbage and cauliflower in home gardens in Santa Fe and Rio Arriba Counties. (N.M. Coop. Rpt.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Causing variable injury, sometimes severe, in Weber County bean patches. (Knowlton, Burningham). COLORADO - Light on beans in Prowers, Bent, Crowley, Otero, Pueblo, Logan, Morgan, Weld, Adams, Larimer and Montrose Counties. (Schweissing, Jenkins, Bulla). ALABAMA - Light to medium on butterbeans in some home gardens in Geneva County. (Scott). MARYLAND - Larvae and adults heavy on unprotected garden lima beans at Denton, Caroline County. (U. Md., Ent. Dept.). CONNECTICUT - Problem on beans at Mansfield Center. (Savos).

BEAN APHID (Aphis fabae) - DELAWARE - Common to rather numerous on young lima beans in Kent and Sussex Counties. (Burbutis, Evans). IDAHO - Abundant on wide variety of plants in Moscow area and heavy on garden beans and tomatoes. (Manis).

PEA APHID (Acyrtosiphon pisum) - IDAHO - Ranged 5-10 per sweep in pea fields in Kootenai and Benewah Counties; any danger of seed yield reduction passed since most pods fairly well filled. (Gittins).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults and nymphs common on lima beans in Sussex County. (Burbutis, Evans).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ALABAMA - Causing considerable damage to newly planted peas and beans in home gardens in Lee County. (Barwood, Davis et al.).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Larval populations appear to be declining on sugar beets in Logan, Morgan, Weld, Adams, Larimer, Prowers, Bent, Otero, Crowley and Pueblo Counties. Numerous adults present in some areas which may produce second-generation larvae. (Jenkins, Schweissing). NORTH DAKOTA - Trace number of larvae in potato field near Kindred. (N.D. Ins. Sur.).

LYGUS BUGS (Lygus spp.) - WASHINGTON - L. hesperus and L. elisus present in all stages; increasing rapidly on sugar beets in Walla Walla area, Walla Walla County. (Wallis).

BEET LEAFHOPPER (Circulifer tenellus) - WYOMING - No adults found on sugar beets of Big Horn Basin, but a few beet plants with curly top noted. (Marks).

SPINACH LEAF MINER (Pegomya hyoscyami) - MAINE - Heavy and causing moderate damage to foliage of beets and Swiss chard in Presque Isle, Aroostook County. (Boulanger, July 13).

ONION MAGGOT (Hylemya antiqua) - UTAH - Caused moderate damage throughout Davis County and in much of Weber County. (Knowlton, Rogers). Common in Weber County home gardens. (Knowlton). COLORADO - Not found on onions in Montrose County. (Schweissing). NEW YORK - Continues active in Madison and Oneida Counties in seed and set onions. (N.Y. Wkly. Rpt., July 15).

ONION THRIPS (Thrips tabaci) - COLORADO - Heavy in Prowers, Bent, Otero, Crowley, and Pueblo Counties. Light to moderate in Weld, Adams, Morgan, and Larimer Counties, with counts of 20-30 per plant. (Schweissing, Jenkins, Bulla). CALIFORNIA - This species and Hercothrips fasciatus heavy on asparagus plantings in Seeley, Imperial County. (Cal. Coop. Rpt.).

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) - MAINE - Moderate on asparagus in Rumford area; damage light. (Boulanger, July 13). WISCONSIN - Larvae nearly full grown in asparagus seeds in Grant County. (Wis. Ins. Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - Surveys for newly infested properties negative in LOUISIANA; survey of wild hosts in Rapides Parish revealed lower infestations than usual. One newly infested property found in Greene County, and 4 in Lincoln County, MISSISSIPPI. All surveys in ALABAMA negative except one property in Escambia County; 12 properties released from regulation in State. Four properties released from regulation in GEORGIA. In FLORIDA, 12 newly infested properties found. Surveys of wild host plants in Charleston County, SOUTH CAROLINA, revealed one specimen on Sullivans Island. (PPC, South. Reg., June Rpt.).

ARGUS TORTOISE BEETLE (Chelymormpha cassidea) - IOWA - Feeding on sweetpotatoes in Decatur County. (Iowa Ins. Inf., July 15).

MEADOW SPITTLEBUG (Philaenus spumarius) - IDAHO - Many crops, particularly strawberries, show retardation resulting from severe nymphal feeding. (Gittins).

ROSE CHAFER (Macrodactylus subspinosus) - MAINE - Numbers and injury on strawberries moderate in East Waterboro area. (Boulanger, July 13).

A LEAF BEETLE (Chlamisus plicata) - ALABAMA - Numerous on blackberry plants and plums in Lee County; det. by E.U. Balsbaugh. (Barwood, Davis).

A WEEVIL (Sciopithes obscurus) - WASHINGTON - Adults very numerous in one raspberry field and detected in another. Little noticeable damage except for some leaf feeding but a potential contaminate of harvested fruit. (Shanks).

A SPIDER MITE - COLORADO - Undetermined species feeding on raspberry plants prevented fruit set in Montezuma County. (Fitzsimmons, Hantsbarger).

CHRYSANTHEMUM LACE BUG (Corythucha marmorata) - DELAWARE - Common on tansy locally in New Castle County; det. by W.A. Connell. (Burbutis, Evans).

CARROT RUST FLY (Psila rosae) - NEW YORK - Serious in celery field in Wayne County; soil not treated this year. (N.Y. Wkly. Rpt., July 15).

HOP APHID (Phorodon hummuli) - OREGON - Counts in Willamette Valley hopyards show 25 percent of leaves infested; ranged 10-14 per leaf. (Morrison).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults and nymphs common to abundant on lima beans in Kent and eastern Sussex Counties. (Burbutis, Evans). MARYLAND - Infesting beans, squash, eggplant and peppers in Queen Annes County gardens. (U. Md., Ent. Dept.). WISCONSIN - Adults and nymphs increased noticeably in beans and potatoes in many areas; numerous in potatoes in Sawyer County and snap beans in Waushara County. Untreated potatoes contain some "hopperburn" in Columbia, Marquette, Dodge, Fond du Lac, Outagamie and Winnebago Counties although counts not particularly high. Numerous adults taken in Dane County blacklight traps. (Wis. Ins. Sur.). NORTH DAKOTA - Trace numbers swept from potatoes near Kindred and trace numbers on potatoes in Traill County. (Olson). COLORADO - Trace numbers on potatoes in Weld County; 2-6 per 100 sweeps. (Jenkins).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - NORTH DAKOTA - Ranged 2-5 per sweep on potatoes in Walsh and Pembina Counties. (N.D. Ins. Sur.). COLORADO - Present on carrots in Weld and Adams Counties; 10-30 per 100 sweeps. (Jenkins).

LEAFHOPPERS - NEW MEXICO - Damaged foliage of squash and cucumbers in Las Cruces area, Dona Ana County. (N.M. Coop. Rpt., July 12). NEW YORK - Moderate to heavy in Orange County; usual numbers present in Oswego County; very active in carrots in Ontario and Yates Counties, with some controls underway. (N.Y. Wkly. Rpt., July 15).

FLEA BEETLES - NEW YORK - Very active in broccoli and brussels sprouts set one week earlier in Madison and Oneida Counties. (N.Y. Wkly. Rpt., July 15). DELAWARE - Adult Systema frontalis found feeding on horseradish in eastern Kent County. Collected by T. Evans, July 10; det. by W.A. Connell. This is first record for State. (Burbutis, Evans). WISCONSIN - Epitrix cucumeris adults appearing in large numbers on untreated potatoes and causing noticeable damage in some fields. (Wis. Ins. Sur.). NORTH DAKOTA - E. cucumeris adults averaged 30 per 10 sweeps on potatoes near Kindred. (N.D. Ins. Sur.). TEXAS - Unspecified species causing heavy damage to tomato plantings in McCulloch County. (Drake). UTAH - Unspecified species light on sugar beets in Carbon County. (Knowlton, Horne). OREGON - Epitrix sp. unusually low in central area potato fields where high populations found this time in 1962. E. tuberis normal in Clackamas County potato fields; tuber damage noted in volunteer potatoes. (Morrison).

CUTWORMS - ALABAMA - Undetermined species feeding heavily in isolated home gardens on peas, beans, and turnips. (Barwood, Davis et al.). WASHINGTON - Unspecified species cut off part of all leaves on several plants in new planting of strawberries. (Shanks).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WASHINGTON - Appearing on potatoes and sugar beets in Quincy area, Grant County. (Landis). OREGON - Appearing on hops in Willamette Valley. (Morrison). NEW JERSEY - Some infestation reported on tomatoes. (Ins.-Dis. Newsltr. July 16).

SPIDER MITES - UTAH - Moderate on beans at Heber, Wasatch County. (Knowlton, Daniels). NEW MEXICO - Unspecified species a problem on raspberry, strawberry and blackberry plantings in home gardens in Las Cruces area, Dona Ana County. (N.M. Coop. Rpt., July 12). TEXAS - Several species damaging tomato plants in various parts of State. (Tex. Coop. Rpt.).

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla) - ALABAMA - Numerous immatures burrowing in home gardens in Geneva and Houston Counties; feeding noted on roots with no appreciable damage. Ranged 1-5 per 100 square feet in isolated areas. (Scott et al.).

GARDEN SYMPHYLAN (Scutigera immaculata) - WASHINGTON - Damaging beans later than usual due to cool, rainy weather. (Shanks). CALIFORNIA - Heavy in gardens in Tulalake, Siskiyou County. (Cal. Coop. Rpt.). IOWA - Feeding on roots of about all crops in garden in Prescott, Adams County. (Iowa Ins. Inf., July 15).

EUROPEAN EARWIG (Forficula auricularia) - NEW MEXICO - Damaging vegetables in home gardens locally in Santa Fe, Santa Fe County. (N.M. Coop. Rpt.).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults prevalent and widespread on tobacco in Anne Arundel and St. Marys Counties. (U. Md., Ent. Dept.). VIRGINIA - Increasing in tobacco in Pittsylvania County. (Dominick). GEORGIA - Light to moderate on tobacco in southern area. (Johnson).

GREEN PEACH APHID (Myzus persicae) - VIRGINIA - Increasing on tobacco, especially irrigated fields in Pittsylvania County. (Dominick). MARYLAND - No damaging infestations seen or reported on tobacco in Anne Arundel and St. Marys Counties. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Light on tobacco in Anne Arundel and St. Marys Counties. (U. Md., Ent. Dept.).

TOMATO HORNWORM (Protoparce quinquemaculata) - WISCONSIN - Eggs believed this species present on tobacco in Richland County. (Wis. Ins. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Present in tobacco fields in Marion and Williamsburg Counties; causing some concern. (Nettles).

SPIDER MITES - NORTH CAROLINA - Undetermined species present on tobacco leaves in Sampson County; only plants near pokeweeds infested. (Gurkin, Robertson).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - First-generation weevil numbers increasing slowly in Florence area. (Taft et al.). GEORGIA - Square counts made in 25 middle and southern area cotton fields ranged 3-65 percent punctured squares; average 28. (Johnson). Percent punctured squares in 1,891 fields checked July 11-17 ranged 1-10 in 68 percent of fields, 11-25 in 22 percent, 26-50 in 5 percent, and over 50 in one percent of fields; 4 percent of fields had no punctured squares. (Jordan). ALABAMA - Infestation counts in some southern counties increased considerably. Young weevils ranged 1-2 in blooms in Geneva County. Hatch-out evident in some central counties as noted by heavy infestation of 30 percent in isolated fields in Greene County. Infestations farther north still light although live weevils being reported statewide. (McQueen et al.). TENNESSEE - Some first-generation weevils emerging in very early cotton in western area. Populations still low and confined for most part in southern tier of counties, with some exceptions in border river counties. Averaged 3 percent punctured squares in infested fields. Now between generations, but peak emergence of first-generation weevils should occur within 7 days. (Locke). MISSISSIPPI - Punctured squares found in 16 of 22 fields checked in delta counties; percent punctured squares in infested fields ranged 0.25-49, averaged 6.8 percent. Weevil numbers still light in most delta counties. (Pfrimmer et al.). LOUISIANA - Infestations remain generally light for this time of year in Tallulah area, but controls in general use. (Smith et al.). TEXAS - Weevil infestation remains light in McLennan and Falls Counties. Infestation averaged 1.1 percent punctured squares in 34 treated fields and 22.4 percent in 22 untreated fields; overall average 4.8 percent. (Cowan et al., July 12). OKLAHOMA - Populations continue generally light throughout cotton-producing areas. Percent infestation ranged 0-8 in southwest, 1-16 in south central and 0-16 in east central areas; one percent infestations reported in Payne and Major Counties. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Only light infestations noted in treated fields in Florence area. (Taft et al.). GEORGIA - Eggs ranged 0-20 (average 11) and larvae 3-24 (average 7) per 100 terminals in middle and southern area cotton fields. (Johnson). Counts made in 1,891 fields during period July 11-17. Eggs per 100 terminals ranged 1-10 in 64 percent of fields, 11-25 in 25 percent, 26-50 in 6 percent and over 50 in 2 percent of fields; none found in 3 percent of fields. Larvae per 100 terminals ranged 1-3 in 45 percent of fields, 4-10 in 21 percent, 11-25 in 5 percent and over 25 in 3 percent of fields; none found in 26 percent of fields. (Jordan). ALABAMA - Infestations throughout State appear to have increased compared with 10-20 days ago. Numerous moths noted in cotton and peanuts in southern area. Examination of corn fields in area showed 5-100 percent of H. zea larvae had left ears and pupated; moths now emerging. (McQueen et al.). TENNESSEE - Considered number one pests of cotton over western area. Some infestations heavy for time of year and considerable damage occurring. Infestations not general and vary from field to field; as many as 24 larvae per 100 terminals noted in on field and almost as high in other fields. Damage so far confined to squares, but unless infestations controlled, damage to bolls can be expected. Larvae averaged 6 per 100 terminals in infested fields. (Locke). ARKANSAS - Percentage of H. virescens continues relatively high in southwest. Of 16 Heliothis larvae collected in Red River Valley, Lafayette County, 7 were H. virescens; 10 of 23 larvae in Little River County were H. virescens. Of 4 Heliothis larvae large enough to check in Nevada County, all were H. zea. (Ark. Ins. Sur.). MISSOURI - Of 853 fields checked,

67 infested with 0-3 larvae and 0-3 eggs per 100 plants. (French). MISSISSIPPI - Injured squares found in 17 of 22 fields checked in delta counties; percent injured squares ranged 0.25-5, averaged 1.2. Eggs averaged 1.1 per 100 terminals in 11 fields; no larvae found in terminal counts. Moth catch in light traps increased compared with previous weeks and is considerably ahead of this time a year ago. (Pfrimmer et al.). LOUISIANA - Some increase in egg and larval terminal counts and damaged squares noted in Tallulah area. Larval infestations expected to become more general and severe for next several days. (Smith et al.). TEXAS - Infestation remains heavy in McLennan and Falls Counties. Eggs and larvae found in 56 fields inspected; averaged 6.9 eggs and 12.1 larvae per 100 terminals. Square injury ranged 1-41.3 percent (average 17.8) in 34 treated fields and 0.7-54 percent (average 21.9) in 22 untreated fields. Boll injury averaged 18.2 percent in 34 treated fields and 26.4 percent in 22 untreated fields; ranged 0-62 percent. (Cowan et al.). OKLAHOMA - H. zea ranged light to moderate in most areas; percent infestation ranged 3-7 in southwest, 1-17 in northwest, 0-10 in east central and 1-12 in south central areas. (Okla. Coop. Sur.). ARIZONA - Few small H. zea larvae found in cotton fields in Yuma, Maricopa and Pinal Counties. Predators still controlling small population. (Ariz. Coop. Sur.). CALIFORNIA - Occasional H. zea larvae found in Kern County, but population not economic. (Black, July 11). Few damaged squares noted in Fresno County, but predators appear to be controlling H. zea population. (Burton, July 12).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Collection of 300 bolls of wild cotton from Marathon Shores, Monroe County, contained 300 larvae; cotton plants destroyed. Inspection of several fields of okra negative. (PPC, South. Reg., June Rpt.). ARIZONA - Emergence all but ceased in test cages at Safford, Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Total of 195 larvae found in 86,392 blooms inspected in southern Eddy County. Several larvae parasitized. No larvae found in blooms in southern Dona Ana County. (N.M. Coop. Rpt.).

SPIDER MITES - NORTH CAROLINA - Tetranychus sp. abundant in 8-acre field in Duplin County. (Fedoranko). Spider mites present on leaves in 2 fields in Cleveland County. (Clapp, Robertson). SOUTH CAROLINA - Some growers reporting difficulty in control in Florence area. (Taft et al.). GEORGIA - Infestations light to moderate in middle and southern areas. (Johnson). TENNESSEE - Continue a problem in some fields in western area; damage still confined to spots. Increase slow in most instances. Weather conditions not favorable for buildup and predators very active in reducing populations. (Locke). MISSOURI - Infestations found in 231 fields of 853 checked. (French). MISSISSIPPI - No infestations found in fields checked in delta counties. (Pfrimmer et al.). LOUISIANA - Generally scarce in Tallulah area cotton. Only isolated infestations reported. (Smith et al.). TEXAS - Infestations were light in 2 fields, medium in 3 and heavy in 3 fields observed in McLennan and Falls Counties. (Cowan et al.). ARIZONA - Spotted populations of Tetranychus telarius causing serious damage to some cotton in Maricopa County; controls not entirely successful. (Ariz. Coop. Sur.). CALIFORNIA - Generally quite low in Tulare County. Frequent applications of sulfur reduced problem in many fields. (George, July 11). Tetranychus atlanticus continues abundant in many Kern County fields, as evidenced by bottom defoliation of plants. (Black, Leigh, July 11). In Fresno County, early T. atlanticus infestations controlled by sulfur applications in Firebaugh, Dos Palos, Mendota, San Joaquin and Tranquillity areas. Serious mite problems have not developed. (Ferris, July 12). T. pacificus abundant in some fields of West Fresno. (Leigh, July 11). T. atlanticus abundant in untreated fields in Kings County, as evidenced by stunting and defoliation. (McClutcheon, July 5).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Counts variable in Tulare County, with nymphs, mostly first and second stages, being found. Counts slightly higher in eastern part of county; however, migration not as great a problem as in past years. (George, July 11). Infestations common in Shafter area, Kern County (Leigh, July 11); counts increased to as high as 20-25 per 50 sweeps, with nymphs present in many fields (Black, July 11). Counts not generally high in Kings County; however, treatment required in some fields. (McClutcheon, July 5). In Fresno County, infestations common in Five Points area, with nymphs appearing. (Leigh, July 11). Few adults found in Firebaugh and Dos Palos areas of Fresno

County. Gradually increasing in San Joaquin and Tranquillity areas with controls required in some fields. Increasing rapidly in Mendota area. Ranged 18-42 adults per 50 sweeps in untreated fields in Clovis area, with nymphs appearing. (Ferris, July 12). Adults ranged 4-27 in fields adjacent to safflower in Cantua Creek area of Fresno County, with nymphs appearing. (Burton, July 12).

APHIDS - SOUTH CAROLINA - Heavy infestations noted in fields in Florence area receiving treatments for other pests which do not control aphids. (Taft et al.). GEORGIA - Aphis gossypii ranged light to heavy in middle and southern areas; most light to medium. (Johnson). MISSOURI - Light in 63 of 853 fields checked. (French). LOUISIANA - Infestations becoming more general in Tallulah area; controls applied in some fields. (Smith et al.). TEXAS - Light in 3 fields in McLennan and Falls Counties. (Cowan et al.).

A LEAFHOPPER (Empoasca sp.) - ARIZONA - Counts increased to 35-54 per 100 sweeps in Yuma County. Slight increase noted in Maricopa County. (Ariz. Coop. Sur.).

FLEAHOPPERS - OKLAHOMA - Psallus seriatus ranged 3-20 per 100 terminals in southwest and 10-15 per 100 terminals in northwest areas. (Okla. Coop. Sur.). NEW MEXICO - Damage by Spanogonicus albofasciatus evident in many cotton fields in southern counties. Counts in fields near Portales ranged 10-25 adults per 100 terminals. (N.M. Coop. Rpt.). ARIZONA - Spanogonicus sp. increased on cotton in Yuma County, declined considerably in Pinal County, and remained constant in Maricopa County. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Small larvae noted in fields in Yuma and Maricopa Counties. (Ariz. Coop. Sur.). CALIFORNIA - Adults abundant in southern and western areas of Kings County. (McClutcheon, July 5). Damage noted in few fields in Raisin City area, Fresno County; however, beneficial insects controlled these infestations. (Burton, July 12).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Small numbers persist in Yuma, Maricopa and Pinal Counties. Mined leaves prevalent in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light to heavy on cotton in middle and southern areas. (Johnson).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - COLORADO - Ips oregonis in large numbers on lodgepole pine near Dillon, Summit County. (Hantsbarger). TEXAS - During June Dendroctonus frontalis found in total of 751 spots in portions of Hardin, Liberty, Orange, Polk, San Jacinto, Trinity and Tyler Counties. Several active infestations reported for first time in Orange County. Infestations remained small compared with previous years of this epidemic at same period. Most spots had fewer than 20 active brood trees. D. terebrans damage to loblolly and shortleaf pines in Houston, Cherokee, Montgomery, Nacogdoches, Rusk, Shelby, Trinity and Walker Counties. Ips avulsus, I. grandicollis and I. calligraphus continued heavy in Cherokee, Gregg, Liberty, Nacogdoches, Panola, Polk, Rusk, San Jacinto and Smith Counties. (Tex. For. Pest Comm., June Rpt.).

WHITE-PINE WEEVIL (Pissodes strobi) - DELAWARE - Larvae infesting pines locally in New Castle County. (Bray).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Extremely light on pine in Houston, Geneva and Henry Counties. Severe damage in isolated young loblolly stands during April and May by first generation. (Scott, Kimbrough et al.).

SPRUCE BUDWORM (Choristoneura fumiferana) - MAINE - During June, 470,000 acres of spruce-fir in northern area treated. A pilot test using Bacillus thuringiensis, a microbial insecticide, carried out in randomized blocks in northern area. Rapid development of larvae complicated both control programs. As much as 40 percent of larvae in sixth stage in some field collections on June 13. (Northeast. For. Pest Rpt., July 9).

DOUGLAS-FIR TUSsock MOTH (Hemerocampa pseudotsugata) - IDAHO - An isolated infestation on ornamental blue spruce trees one mile north of Moscow on Highway 95. Most of larvae in last stage and pupation should begin in a week. (Corless).

ZIMMERMAN PINE MOTH (Diorycytria zimmermani) - OHIO - Larvae infesting Scotch pines near Cuyahoga Falls, Summit County. (Benson, Holdsworth). NEW YORK - Severe, local infestation on Japanese black pine on Long Island. Nearly full grown larvae caused serious damage to trunks, often girdling bases of branches on 7 medium-sized healthy trees. (N. Y. Wkly. Rpt., July 15).

PITCH TWIG MOTH (Petrova comstockiana) - VERMONT - Infesting Mugho pine in Shelburne, Chittenden County. (MacCollom, July 15).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - RHODE ISLAND - Galls opening in Warwick, Kent County. (Cartier, Mathewson). NEW YORK - Emerged June 27 in Nyack area of Rockland County. (N. Y. Wkly. Rpt., July 15). OHIO - Emergence about 80 percent complete at Canton, Stark County, July 11. Two weeks earlier than last year. (Reigelman, Walker). UTAH - Moderately conspicuous on spruce at Duck Creek-Bryce Canyon in southern area, at Monte Cristo, Rich County, and Huntsville, Weber County. (Knowlton). WASHINGTON - Galls on ornamental spruce in Yakima, Yakima County. (Landis).

EASTERN SPRUCE GALL APHID (Chermes abietis) - MAINE - Numbers and damage moderate on spruce in Presque Isle. (Boulanger, July 13).

PINE LEAF APHID (Pinus pinifoliae) - MAINE - Heavy infestation on white pine expected in 1963. (Northeast. For. Pest Rpt., July 9).

SARATOGA SPITTLEBUG (Aphrophora saratogensis) - WISCONSIN - Adult emergence complete in southern area by mid-July, 2 percent in northwest and 98 percent in Marinette County by July 16. In Jackson County, 25 acres of pine treated and 800 acres of pine plantations in Marinette and Oneida Counties scheduled for treatment on July 22. (Wis. Ins. Sur.).

PINE SPITTLEBUG (Aphrophora parallela) - WEST VIRGINIA - Spittle masses very abundant and conspicuous throughout southern counties on white, Virginia and Scotch pines. (Northeast. For. Pest Rpt., July 9).

A COCCID (Toumeyella parvicorne) - FLORIDA - Severe on Pinus sp. at Tampa, Hillsborough County, July 11. (Hale and Fuller).

PINE SAWFLIES - KENTUCKY - Light to moderate defoliation of Virginia and short-leaf pines by Neodiprion pratti pratti in eastern counties. Defoliation lighter than last year. (Northeast. For. Pest Rpt., July 9). ALABAMA - Medium infestation of N. lecontei in young loblolly pine in Lamar County. (Granberry). WISCONSIN - Scattered colonies of N. lecontei more often seen in west central counties than last year, but numbers still endemic. Larvae in these counties mostly in third stage, July 17. (Wis. Ins. Sur.). MINNESOTA - Late stage larvae of Diprion similis continue to feed, but many of first generation in cocoons. Some second generation adults in Chisago, Pine, Crow Wing and Aitkin Counties. Early stage N. lecontei larvae common on smaller, open grown jack pine in east central and central areas of State. (Minn. Ins. Rpt.). IDAHO - Pupation of Neodiprion sp. general in infested area of southern Kootenai County but considerable defoliation of old needles still occurring largely on ponderosa pine from feeding of remaining larvae. (Gittins).

YELLOW-HEADED SPRUCE SAWFLY (Pikonomia alaskensis) - MICHIGAN - Infestation in Marquette County. (Nyquist).

LARCH SAWFLY (Pristiphora erichsonii) - MICHIGAN - Larvae caused one third defoliation in some Crawford County larch stands; infestation appears rather general. (Bloomer). MINNESOTA - Larvae in all stages. Greatest abundance and most defoliation in south central St. Louis County. (Minn. Ins. Rpt.). VERMONT - Damaging tamarack in some localities. (MacCollom).

A CURCULIONID LARVA - COLORADO - Attacking ponderosa pine cones in foothill area of Larimer County; 5-80 percent of cones destroyed, averaged 20 percent. (Thatcher).

MITES - NEW YORK - Generally heavy buildup on spruce and hemlocks throughout Rockland County. Numerous on spruce in Nassau County. (N. Y. Wkly. Rpt., July 15). NORTH DAKOTA - Tetranychus telarius damaged spruce at Jamestown. (N. D. Ins. Sur.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - VERMONT - Injury noticeable on roadside elms in Addison County. (MacCollom, July 15). PENNSYLVANIA - Building up on American elm in Harrisburg, Dauphin County. (Slesman). OHIO - Infestations on Chinese elm at Upper Sandusky, Wyandot County. (Mitchell, Blair, July 12). ALABAMA - Extremely heavy infestation in Tallapoosa, Lee and counties north of Lee. None noted in southeast counties south of Lee and east of Montgomery County. Many elms in infested areas 60-90 percent defoliated. (McQueen). ARKANSAS - Infestations in most areas of State. Heavy in northwest. Infestations in Fayetteville probably heaviest known for area. Partial defoliation to some trees. Most second generation pupated at Fayetteville. (Boyer). TEXAS - Heavy on elms and causing concern in Gray County. (Tex. Coop. Rpt.). OKLAHOMA - Severe defoliation throughout State. In many areas trees virtually void of any foliage. New egg laying cycle starting. (Okla. Coop. Sur.). NEBRASKA - Heavy damage in Nemaha County. (Peterson). NEW MEXICO - Moderate to heavy on Chinese elm at Espanola, Rio Arriba County, and Santa Cruz, Santa Fe County. Appears to be spreading rather rapidly to new areas from ones infested during 1962. (N. M. Coop. Rpt.). UTAH - Damaging in Salt Lake City-Granger area of Salt Lake County and northwest of Ogden, Weber County. (Knowlton). NEVADA - Pupation beginning in southern Washoe County. (Bechtel).

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) - MARYLAND - Adults and larvae destructive to weeping willows on properties in Prince Georges County. (U. Md., Ent. Dept.). RHODE ISLAND - All stages common on pussy willow and weeping willow in areas of Washington County and probably statewide. (Mathewson).

A LEAF BEETLE (Derocrepis erythropus) - DELAWARE - Adults feeding on black locust at Middletown, New Castle County. Collected by P. Burbutis June 12. This is a new State record. Det. by G. Vogt. (Burbutis, Evans).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ILLINOIS - On black locust near Beaverville, Iroquois County. Populations light but full-grown larvae, pupae and occasional adults found. This is a new county record. (Ill. Ins. Rpt.).

POPLAR-AND-WILLOW BORER (Sternochetus lapathi) - COLORADO - Damaged 5 percent of willows in foothills area of Larimer County. Infested area has extended several miles. (Thatcher).

CARPENTERWORM (Prionoxystus robiniae) - NORTH DAKOTA - Several reports of damage to poplar and ash in Cass County area. (N. D. Ins. Sur.).

LINDEN LOOPER (Erannis tiliaria) - Scattered infestations on Middlebury Ranger District of Green Mountain National Forest in Addison County, VERMONT. Defoliation estimated at 5-10 percent of the understory in some areas; up to 50 percent expected in localized spots. In MASSACHUSETTS, western counties quite generally infested; control applied in Hampden, Hampshire and Franklin Counties. (Northeast. For. Pest Rpt., July 9).

BROWN-TAIL MOTH (Nygmia phaeorrhoea) - MASSACHUSETTS - Moderate to heavy on beach plum at Dennis, Provincetown and Truro on Cape Cod. (Northeast. For. Pest Rpt., July 9).

GYPSY MOTH (Porthetria dispar) - Little defoliation in NEW YORK by end of June; controls applied. Infestation and defoliation much lighter than anticipated in CONNECTICUT. East of Connecticut River in Middletown-Portland area many thousands of acres partially defoliated but not so severely as in 1962. In MASSACHUSETTS, defoliation noted at Truro, New Salem, Williamstown, Great Barrington, New Marlborough and Monterey; apparently several thousand acres will be 50-100 percent defoliated. Treatment of 835 miles of roadsides and approximately 56,000 linear feet of stone walls around nurseries completed June 27 in RHODE ISLAND. (PPC, East. Reg., June Rpt.). About 4,000 acres infested in 4 locations in York and Oxford Counties, MAINE. In scattered locations in Connecticut River Valley in western Cheshire County, NEW HAMPSHIRE. In VERMONT, decline that started in 1962 on Green Mountain National Forest, Middlebury Ranger District, and adjacent lands in Addison County seems to be continuing. Little damage anticipated. (Northeast. For. Pest Rpt., July 9). MICHIGAN - No male moths collected in traps to July 19. (Ring, Carlson, Lovitt). VERMONT - Defoliation severe in areas of Windham, Bennington, Rutland and Chittenden Counties. (MacCollom).

FALL WEBWORM (Hyphantria cunea) - RHODE ISLAND - Nests appearing in South Kingstown, Washington County, and in Middletown, Newport County. (Cartier, Mathewson). ALABAMA - Light and widely distributed but much less than 1962 in all southeast counties on pecans, hickory and other hosts. Somewhat heavier infestation on pecans in Chilton County. (Scott, White, Roney, Kimbrough, Helms). NEW MEXICO - Poplar trees in many areas of Dona Ana and Eddy Counties heavily infested. Many trees with at least 10-30 "tents" in them. (N. M. Coop. Rpt.). WASHINGTON - Larvae more abundant than usual; adults emerged about July 5 from cottonwood at Harwood, Yakima County. (Landis).

CANKERWORMS - Heavy infestations of Alsophila pometaria and Paleacrita vernata in eastern Norfolk County, MASSACHUSETTS; some control applied. In MARYLAND, second year of heavy defoliation by P. vernata in Bachmans Valley. (Northeast. For. Pest Rpt., July 9).

GREAT BASIN TENT CATERPILLAR (Malacosoma fragile) - NEW MEXICO - Heavy populations defoliating quaking aspen stands in northern area. (N. M. Coop. Rpt., July 12).

FOREST TENT CATERPILLAR (Malacosoma disstria) - WEST VIRGINIA - Defoliating oak in Mercer County. (Northeast. For. Pest Rpt., July 9). IDAHO - Adult emergence begun in infested areas of Benewah and Kootenai Counties. Pupal parasitism appears low. (Gittins).

BIRCH CASEBEARER (Coleophora salmani) - MAINE - Moderate over northeastern area. (Northeast. For. Pest Rpt., July 9).

BIRCH LEAF MINER (Fenusa pusilla) - Heavy in southern MAINE, southern NEW HAMPSHIRE and extending into MASSACHUSETTS. (Northeast. For. Pest Rpt., July 9). PENNSYLVANIA - About 50 percent of birch leaves infested in Luzerne County, July 12. Mostly in pupal stage. (Jeffery). OREGON - Heavily attacking birch in a Salem nursery. (Bock, Goeden).

A LYGAEID BUG (Crochius bohemani) - CALIFORNIA - Heavy adult populations on maple trees locally in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

ERIOPHYIID MITES - OKLAHOMA - Heavy and causing leaves to curl on pin oaks in Stillwater area. (Okla. Coop. Sur.). VERMONT - Bronzed elm and beech. (MacCollom).

MAPLE BLADDER-GALL MITE (Vasates quadripedes) - VIRGINIA - Heavily infesting maple locally in Roanoke, Roanoke County (Tarpley, July 1) and in Charlottesville, Albemarle County (Tarpley, Smith, July 10).

APHIDS (undetermined) - NEW YORK - Heavily infesting white oak in one area. (N. Y. Wkly. Rpt., July 15). MICHIGAN - Aphids on maple, elm and walnut creating a problem over parked cars in Berrien County. (Tatter, Janes, Kidd, Hoffman). UTAH - Numerous on many maples, lindens and willows over much of northern and central Utah. (Knowlton). VERMONT - Curling tips and new growth of spruce and balsam. (MacCollom).

BLACK-MARGINED APHID (Monellia costalis) - OKLAHOMA - Moderate to heavy populations causing honeydew secretions on pecans in Lincoln and Okfuskee Counties. (Okla. Coop. Sur.).

COCCIDS - VERMONT - Lepidosaphes ulmi infestation in East Montpelier resulted in severe leaf drop of beech. (MacCollom). PENNSYLVANIA - Coccus hesperidum light on birdsfoot ivy in nursery, Monroe County. (Andreychik). Diaspis liquidambaris heavy on sweetgum in nurseries in Dauphin County. (Sleesman). DELAWARE - Chrysomphalus tenebrosus fairly common on oak in central Kent County. (Bray). OHIO - Infestations of L. ulmi near Circleville, Pickaway County. (Hamrick, Holdsworth). FLORIDA - Ceroplastes floridensis and Coccus viridis light to severe on Dizygotheca elegantissima at Ft. Lauderdale, Broward County, July 9. (McLean). NEW MEXICO - Gossyparia spuria moderate to heavy on American elm in Santa Fe and Rio Arriba Counties. (N. M. Coop. Rpt.). CALIFORNIA - Chrysomphalus obscurus very light on scarlet oak in Capitol Park, Sacramento, Sacramento County. One live female found on trees receiving eradivative treatment. Adults of Chionaspis ortholobis medium on dogwoods in Goodyears Bar, Sierra County. (Cal. Coop. Rpt.).

EUONYMUS SCALE (Unaspis euonymi) - NEW MEXICO - Heavy on euonymus in several areas of Albuquerque, Bernalillo County; leaves, stems and trunks of some plants very heavily encrusted. (N. M. Coop. Rpt., July 12). OHIO - Moderate infestation on pachysandra at Wooster, Wayne County. (R. Neiswander).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Severe damage continues on a variety of trees throughout State. (Okla. Coop. Sur.). WISCONSIN - Observations of bagworms held over winter on out-door evergreens in Dane County indicated a complete mortality; they were above and below the snow line. (Wis.

Ins. Sur.). PENNSYLVANIA - Damage noticeable on arborvitae in Allegheny and Fayette Counties, July 11. (Yackley). MARYLAND - Infesting ornamental maples on properties in Prince Georges and Worcester Counties. (U. Md., Ent. Dept.).

MIMOSA WEBWORM (Homadaula albizziae) - ALABAMA - Few webs on mimosa in Lee County. No known infestations on mimosa south of Lee County and east of Montgomery County. Previously noted in Mobile, Chilton, Colbert, Lawrence and Franklin Counties. Damage more severe in north and western part of State except Mobile County. (Barwood, Seibels, Helms et al.). MARYLAND - Increasing on mimosa at several areas in Prince Georges County. (U. Md., Ent. Dept.). PENNSYLVANIA - Damage noticeable on honeylocust in Allegheny and Fayette Counties, July 11. (Yackley). Half grown in Centre County, July 18. (Gesell).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - NEW MEXICO - Adults now abundant where larvae defoliated Chinese elms during the spring at Santa Fe, Santa Fe County. (N. M. Coop. Rpt.). NEVADA - Medium larval infestation on elm in Grass Valley, Humboldt County. (Bechtel, Day, Lauderdale).

A TENT CATERPILLAR (Malacosoma sp.) - CALIFORNIA - Medium on privet nursery stock in Fortuna, Humboldt County. (Cal. Coop. Rpt.).

LARGER CANNA LEAF ROLLER (Calpodes ethlius) - TEXAS - Heavy, local infestation on cannas in Tom Green County. (Hyman).

FLATID PLANTHOPPERS - ALABAMA - Anormenis septentrionalis and Metcalfa pruinosa feeding on tender shoots and buds of boxwood and other shrubs in Marshall County. Det. by Balsbaugh. (Alverson).

AZALEA LACE BUG (Stephanitis pyrioides) - MARYLAND - Seriously injuring large azalea planting at Carrollton, Prince Georges County. (U. Md., Ent. Dept.).

A FALSE CHINCH BUG (Nysius sp.) - CALIFORNIA - Heavy on shrubs, weeds and grass in West Covina, Los Angeles County. (Cal. Coop. Rpt.).

SNOWY TREE CRICKETS (Oecanthus spp.) - ALABAMA - Increasing in numbers and a serious problem to nurserymen and homeowners regarding camellias in many areas of Mobile County. (Seibels).

SPIDER MITES (Undertermined species) - ALABAMA - Extremely heavy and uncontrollable with known acaricides on roses, dahlias, oaks, elms, marigolds, gladiolus and many other plants in Lee County. (McQueen). MARYLAND - Infesting ornamentals over State including rose, boxwood, maples, spruce and hemlock. (U. Md., Ent. Dept.). VERMONT - Caused bronzing to elm and beech. (MacCollom).

CARNATION TIP MAGGOT (Hylemya echinata) - WASHINGTON - Moderate damage to carnations; about a dozen plants attacked in 18 feet of row; Friday Harbor, San Juan County. No damage to pinks nearby. (Baker).

APHIDS - OKLAHOMA - Moderate to heavy populations of Monellia costalis causing honeydew secretions on pecans in Lincoln and Okfuskee Counties. (Okla. Coop. Sur.). NEVADA - Liosomaphis berberidis light to heavy on barberry in Reno, Washoe County. (Bechtel, Lauderdale).

A SLUG (Arión ater) - CALIFORNIA - Medium populations in nursery and field properties in Eureka and light locally in Fortuna, Humboldt County. (Cal. Coop. Rpt.).

County and some complaints in Waushara, Rock and Iowa Counties. Problem apparently not acute in most areas. (Wis. Ins. Sur.). ILLINOIS - Averaged 8 per face in 5 herds in Iroquois County. (Ill. Ins. Rpt.). MICHIGAN - Heavy in Sanilac County. (Sowerby, Kidd). OHIO - Adults averaged 11 per face on beef and dairy animals at Wooster, Wayne County. (Treece). VIRGINIA - Averaged 15 per head in one herd of cattle in Floyd County and 8 per head in several herds in Craig County. (Tarpley). MARYLAND - Counts of 1-15 per head in 14 dairy herds in Frederick and Howard Counties. (U. Md., Ent. Dept.). VERMONT - Averaged 20 per animal on livestock in most areas. (MacCollom).

MOSQUITOES - VERMONT - Undetermined species annoying to pastured stock and in recreational areas. (MacCollom). NORTH CAROLINA - Various species low in numbers along coastal areas. (Ashton). OKLAHOMA - Heavy numbers of Psorophora spp. and Aedes spp. causing considerable annoyance in north central area. (Okla. Coop. Sur.). TEXAS - Annoying species in Jefferson County area included Culex spp., Aedes sollicitans, A. taeniorhynchus, A. vexans, Psorophora confinnis, Anopheles crucians and Anopheles quadrimaculatus. (Jefferson Co. Mosq. Cont. Comm., June Rpt.). Culex tarsalis, Aedes vexans and Psorophora signipennis annoying in Lubbock County. (Breedlove). NEVADA - Mostly Aedes spp. and Culex tarsalis. Heavy adult populations in Denio, Golconda and Winnemucca, Humboldt County. (Bechtel, Day, Lauderdale, Lukens, Martinelli). Heaviest population in recent years in Mason Valley, Lyon County. (Batchelder). UTAH - Undetermined species moderate to serious in areas of Carbon, Emery, Rich, Uintah, Utah, Box Elder, Cache, and Weber Counties. (Knowlton, Horne).

HORN FLY (Haematobia irritans) - VIRGINIA - Ranged from 0 in one herd in Floyd County to over 200 per animal in Craig County. (Tarpley). MARYLAND - Averaged 50 per head on 40 head of dairy cattle at Sykesville, Howard County. (U. Md., Ent. Dept.). ILLINOIS - Averaged 91 per animal in Iroquois County. (Ill. Ins. Rpt.). ALABAMA - Rather light on beef and dairy cattle in Geneva County, where most breeders use back-rubber control. (Scott). OKLAHOMA - Moderate to heavy populations throughout State with increases after recent rains. Counts of 700 per head on cows to over 3,000 per head on bulls in Stillwater area. (Okla. Coop. Sur.). MICHIGAN - Populations heavy in Sanilac County. (Sowerby, Kidd). NORTH DAKOTA - Counts of 100-750 per animal on cattle in Ransom and Richland Counties. (Noetzel). SOUTH DAKOTA - Counts of 150-300 per side of animal in southeast. Cattle restless and did little feeding during observation. (Hintz). UTAH - Numerous and troublesome to cattle throughout much of Emery County. (Knowlton, Olson).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations up somewhat in Stillwater area with average of 3 per head on cattle; counts of 6 per head in Pushmataha County. (Okla. Coop. Sur.). NORTH DAKOTA - Up to 40 per animal on cattle in Cass and Traill Counties. (Noetzel). ILLINOIS - Averaged 1.7 per animal in Iroquois County. (Ill. Ins. Rpt.). WISCONSIN - Apparently causing general concern. (Wis. Ins. Sur.).

TABANIDS - VERMONT - Horse flies severe on pastured cattle in Lamoyille and Franklin Counties. (MacCollom). RHODE ISLAND - Chrysops spp. nuisances in rural areas statewide. (Mathewson). ILLINOIS - Chrysops spp. not observed on cattle in pasture but very annoying to personnel in occasional corn fields in east and northeast districts. (Ill. Ins. Rpt.). MICHIGAN - Horse flies annoying in Wayne County. (Sowerby, Kidd). OKLAHOMA - Counts of Tabanus spp. 5-10 per head in McIntosh County. Moderate infestation in Craig County. (Okla. Coop. Sur.). UTAH - Annoying to livestock in areas of Piute, Tooele and Box Elder Counties. (Knowlton). NEVADA - Heavy populations of horse flies at Sheldon Game Refuge in northern Washoe County. (Lukens, Martienli). Chrysops sp. extremely abundant along Quinn River, near Orovada, Humboldt County. (Cooney).

BLACK FLIES - IDAHO - Adults extremely abundant in many wooded areas of central Latah County. (Gittins). NEVADA - Heavy adult populations in Golconda and Winnemucca areas, Humboldt County, caused extreme annoyance to livestock and humans. (Bechtel, Day, Lauderdale).

SNUIPE FLIES (*Symphoromyia* spp.) - UTAH - Annoying in higher areas of mountains and canyons at Monte Cristo and from Huntsville to Woodruff in Weber and Rich Counties. Also annoying in areas of Iron and Kane Counties. (Knowlton).

EYE GNATS (*Hippelates* spp.) - NORTH CAROLINA - Just becoming noticeable in Sandhills region. (Black).

HOUSE FLY (*Musca domestica*) - VERMONT - Populations high on livestock in all areas. (MacCollom). WISCONSIN - More noticeable. (Wis. Ins. Sur.).

SHEP KED (*Melophagus ovinus*) - UTAH - Numerous in some Wasatch County farm flocks. (Knowlton).

DRONE FLY (*Eristalis tenax*) - CALIFORNIA - Larvae heavy in soil associated with chicken coops in St. Helena, Napa County. Larvae quite prevalent in chicken droppings in poultry establishments during 1962. (Cal. Coop. Rpt., July 12).

MASKED HUNTER (*Reduvius personatus*) - UTAH - Moderately numerous around camp grounds in southern Sevier County. (Knowlton).

CHICKEN MITE (*Dermanyssus gallinae*) - DELAWARE - Abundant and annoying people in office building in northern New Castle County. Det. by J. Mellott. (Mellott).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Heavy populations of larvae in eastern area. (Okla. Coop. Sur.).

A TINEID MOTH (*Acedes fuscipunctella*) - CALIFORNIA - Extremely heavy population of larvae and adults in chicken droppings in Moorpark, Ventura County. (Cal. Coop. Rpt.).

A SCORPION (*Vejovis* sp.) - CALIFORNIA - Single specimen from Oroville, Butte County, where it reportedly stung and hospitalized an individual. (Cal. Coop. Rpt.).

HOUSEHOLD AND STRUCTURAL INSECTS

EUROPEAN EARWIG (*Forficula auricularia*) - VERMONT - Annoying homeowners in Burlington area. (MacCollom). RHODE ISLAND - Complaints increased from various parts of State. (Mathewson). CONNECTICUT - A problem around many homes along southern coast. (Savos). UTAH - Troublesome about homes in Price, Carbon County. (Knowlton, Horne). VERMONT - Annoying homeowners in Burlington area. (MacCollom).

A SAP BEETLE (*Glischrochilus quadrisignatus*) - OHIO - Adults and larvae present statewide (Blair); observed in Hamilton County (Tyree, Holdsworth); heavy flights occurred in evenings between 4 and 6 p.m. in Mercer County (DeBrosse). Complaints received in Van Wert County concerning flights to screen doors and into homes. (Holtkamp).

STRAWBERRY ROOT WEEVIL (*Brachyrhinus ovatus*) - COLORADO - Nuisance in Baca County home. (Hantsbarger). NEBRASKA - Adults annoying in home in Sheridan County. (Bergman). MICHIGAN - Household nuisance in Allegan County. (Heft, Pangborn). OHIO - Crawling about home at New Philadelphia, Tuscarawas County. (Cronin, Holdsworth, July 12). Many adults entering residence at Dalton, Wayne County. (Rings, Neiswander).

MILLIPEDES - NEW JERSEY - Becoming troublesome in homes. (Ins.-Dis. Newsltr., July 16).

TERMITES - UTAH - Infesting number of homes and farm buildings in Brigham City area and elsewhere in eastern Box Elder County. (Knowlton, Allred).

STORED-PRODUCT INSECTS

RED FLOUR BEETLE (Tribolium castaneum) - IDAHO - Extremely heavy in stored wheat and oats in Canyon County. (Bechtolt).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - VIRGINIA - Heavy in stored oats locally in Newport News. (Tarpley, Evans, July 2).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults of several species averaged 65 per 100 sweeps in alfalfa; 24 in beans and 22 in small grain fields in Big Horn Basin. (Marks).

A CERAMBYCID BEETLE (Crossidius pelchellus) - NEW MEXICO - Larvae very effective in killing heavy stands of snakeweed (Gutierrezia sarothrae) on several sections in Hidalgo County. (N. M. Coop. Rpt.).

A PREDACEOUS THRIPS (Franklinothrips vespiformis) - CALIFORNIA - Heavy on asparagus planting in Seeley, Imperial County, in association with Hercotothrips fasciatus and Thrips tabaci. (Cal. Coop. Rpt.).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults averaged 32 per 100 sweeps in alfalfa and 17 per 100 sweeps in small grains of Big Horn Basin. (Marks).

FLOWER FLIES - ALABAMA - Extremely large numbers of adults and larvae noted throughout southeast counties. (Barwood, Davis et al). PENNSYLVANIA - Mesograpta marginata very abundant on Scotch pine infested with Cinara watsoni in Fayette County. Det. by S. G. Gesell. (Udine).

A LEAFCUTTING BEE (Megachile rotundata) - NEVADA - Emerged week of July 8-12 in Lovelock, Pershing County, and Orovada, Humboldt County. (Coop. Rpt.).

ALKALI BEE (Nomia melanderi) - NEVADA - Emerged week of July 8-12 in Lovelock, Pershing County, and Orovada, Humboldt County. (Coop. Rpt.).

Beneficial Insects in Colorado - Predator populations continue to increase and include LADY BEETLES, DAMSEL BUGS, LACEWINGS, Collops spp. and numerous SPIDERS. (Colo. Ins. Sur.).

Beneficial Insects in California - Populations of a BIG-EYED BUG (Geocoris sp.) appear to be increasing in Tulare County; some Collops spp. present and number of Orius sp. remains low. (George). In Fresno County, common predators reported high in Clovis and Mendota areas (Ferris) Geocoris sp. ranged 3-15 per 50 sweeps in some fields in Cantua Creek area. Minute pirate bugs also abundant. (Burton).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - First adult collected June 14 in Asheville, NORTH CAROLINA; populations heavy on Coastal Plain and Piedmont. First emergence in TENNESSEE noted in various locations from June 24 to 29; traps in operation in 29 counties. No collections made from traps in LOUISIANA and MISSISSIPPI. One specimen caught at Waycross, GEORGIA, June 3; heavy in Augusta area. Adults trapped at Opelika, Lee County, Alabama. (PPC, South. Reg., June Rpt.). First adults of season in MICHIGAN collected at Battle Creek. First adult of season in INDIANA reported at Kentland June 26; grub survey in Hawthorn Railroad Yards of Indianapolis revealed maximum of 4 grubs per square foot. In ILLINOIS, adult trapped for the first time at Greenville, Bond County; adults also trapped at Mattoon and Paris. Two adults trapped in St. Louis last week of June. (PPC, Cent. Reg., June Rpt.). VIRGINIA - Adults common on wide variety of plants in

Craig, Giles, Montgomery, Patrick, Henry, Pittsylvania, Franklin and Roanoke Counties. (Tarpley). OHIO - Emergence occurred throughout State. (Polivka). CONNECTICUT - Emerging since July 13 or earlier but no large numbers anywhere in State. Low winter temperatures may have killed grubs or dry, hot weather may be unfavorable for emergence. (Savos). NEW JERSEY - Heavy locally throughout State. (Ins.-Dis. Newsltr., July 16). MICHIGAN - Heavy flight in Battle Creek area continues; populations highest in southeast section of city but infested area not yet delimited. This appears to be one of the heaviest infestations encountered in State. During week ending July 19, 60 adults taken in 38 traps in northern section of Ypsilanti; 48 from traps in Detroit area; one from rural Lenawee County outside of treated area and a few adults from Willow Run Airport. (Turner, Kendeigh, Carlson). SOUTH CAROLINA - Appeared first week of July in Pickens County. (Nettles et al.). MINNESOTA - Single specimen trapped at Minneapolis-St. Paul International Airport July 10 determined this species. Now 1,087 traps in operation throughout State, with emphasis on transportation centers where introduction may occur. (Minn. Ins. Rpt.). RHODE ISLAND - Numbers small to July 19 but causing statewide comment. (Cartier, Mathewson). PENNSYLVANIA - Fewer than in 1962 in Fayette County. (Yackley).

EUROPEAN CHAFER (Amphimallon majalis) - Two additional infestations found in Hudson County, NEW JERSEY, short distance from area treated in 1962; First flights in NEW YORK were June 10, Brooklyn; June 16, Newark; June 17, Syracuse; and June 27, Norwich. Heavy flight noted at Meriden, CONNECTICUT, June 27. (PPC, East. Reg., June Rpt.). PENNSYLVANIA - Adults collected at Erie, Erie County, July 11; this is a new State record. (Wolff).

ASIATIC GARDEN BEETLE (Maladera castanea) - RHODE ISLAND - Scarcity to date conspicuous. (Mathewson).

A SCARAB (Trigonopeltastes delta) - ALABAMA - Several specimens taken in Japanese beetle traps in Montgomery, Lee and Houston Counties; few taken feeding on Queen Ann's lace and elderberries in Talladega and Henry Counties. Det. by E. U. Balsbaugh. (Griffin, Barwood, Kinbrough et al.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Infestation found for the first time in Liberty County, FLORIDA, during June. Adult emergence in GEORGIA light because of weather; some extensions to infested area found in a few counties. Infestation found in and around large nursery in Huntsville, ALABAMA, area; inspection of other nurseries in Mobile area negative. Infestation found for the first time in Tate County, MISSISSIPPI, during June. Small extensions of known infested areas found in several southern LOUISIANA parishes. Emergence in Nashville area, TENNESSEE, about one month later than in Memphis district. Inspection in 37 counties negative. (PPC, South. Reg., June Rpt.).

A DERMESTID (Novelsis aequalis) - DISTRICT OF COLUMBIA - Larvae and adults collected June 24, 1963, in a residence in northeast Washington. Det. by J. M. Kingsolver. Specimens of this species were first collected in this area in the National Zoological Park 3 years previously. (Fales, Bodenstern).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Surveys in NORTH CAROLINA negative. Small extension of infestations found in Charleston, Jasper and Orangeburg Counties, SOUTH CAROLINA. Infestation in Colorado County, TEXAS, delimited and found the first time in adjoining county of Wharton. (PPC, South. Reg., June Rpt.). FLORIDA - Collections numerous in Manatee County; 2 new townships involved. (Frederic, Roberts, Fielding, July 5). One new township involved at Port St. Joe, Gulf County. (Whitehead, June 14). ALABAMA - Numerous queens noted throughout Houston, Dale and Henry Counties. (Kimbrough, Brantley et al.).

TOBACCO HORNWORM (Protoparce sexta) - MICHIGAN - First adults of season taken in blacklight trap. (Newman).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Adults heavy on puncturevine in Palm Springs, Riverside County; a predaceous thrips (Scolothrips sexmaculatus) also heavy on same plant. (Cal. Coop. Rpt.).

SPRINGTAILS - ALABAMA - Great numbers infesting mold-covered peat in peatbeds in Mobile County. (Seibels).

CORRECTIONS

CEIR 13(14):321 - Coccids in Florida - Lepidosaphes madkelli should read Lepidosaphes maskelli.

CEIR 13(29):822 - A LEAF BLOTCH MINER (Lithocolletes crataegella) should read Lithocolletis crataegella.

LIGHT TRAP COLLECTIONS

| State | County | Date | Temp- ture | Pre-ci- pita- tion | Type of trap | Agri- cultural crops | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | Agri- cultural pests | | |
|-------------|--------------|----------|---------------|--------------------------|-----------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--|--|
| FLORIDA | Gainesville | 7/9, 16 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILLINOIS | (County) | | 73-91 | 0.15 | 23 | | | | | | | | | | | | | | | | | | | | | | | |
| | Champaign | 7/12-18 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INDIANA | (Counties) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | La Porte | 7/8-15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Lawrence | 7/9-15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Tippecanoe | 7/11-15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Vanderburgh | 7/10-15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OHIO | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Wooster | 7/11-19 | | | 23 | | | | | | | | | | | | | | | | | | | | | | | |
| | Ripley | 7/11-19 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Marietta | 7/11-19 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Columbus | 7/11-19 | | | 8 | | | | | | | | | | | | | | | | | | | | | | | |
| | Heyville | 7/11-19 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KANSAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Garden City | 7/10 | | | 3 | | | | | | | | | | | | | | | | | | | | | | | |
| | Hays | 7/10, 13 | | | 15 | | | | | | | | | | | | | | | | | | | | | | | |
| | Manhattan | 7/13-18 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Wathena | 7/10 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| MAINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Monmouth | 7/1-5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MARYLAND | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Centreville | 7/10-16 | | | 61 | | | | | | | | | | | | | | | | | | | | | | | |
| MISSISSIPPI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Stoneville | 7/12-18 | 64-92 | 5.18 | MV | | | | | | | | | | | | | | | | | | | | | | | |
| | Stoneville | 7/12-18 | 64-92 | 5.18 | BL | | | | | | | | | | | | | | | | | | | | | | | |
| NEBRASKA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Bushnell | 6/24-7/2 | | | 8 | | | | | | | | | | | | | | | | | | | | | | | |
| | Kearney | 6/28-7/2 | | | 9 | | | | | | | | | | | | | | | | | | | | | | | |
| | Kearney | 7/1-8 | | | 7 | | | | | | | | | | | | | | | | | | | | | | | |
| | North Platte | 7/3-9 | | | 17 | | | | | | | | | | | | | | | | | | | | | | | |
| | Ogallala | 6/25-7/1 | | | 28 | | | | | | | | | | | | | | | | | | | | | | | |
| | Ogallala | 7/2-8 | | | 70 | | | | | | | | | | | | | | | | | | | | | | | |

(Continued on page 877).

* BL = blacklight; I = Incandescence; MV = mercury vapor; O = Other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); coss. = cotton; FC = field corn; grain sweet corn; sun. = sunflower; solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

513

623

077

Encl.

COOPERATIVE ECONOMIC INSECT REPORT

DETECTION

An APHID (Microparsus olivei) collected in Pennsylvania for first time. (p. 882).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (pp. 882-883).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Hay Crops, Soybeans, Corn, Wheat and Alfalfa in Illinois in 1962. (pp. 885-893).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Soybeans in Arkansas in 1962. (p. 894).

Interceptions of Special Interest at U.S. Ports of Entry. (pp. 895-896).

Insects Now Known to Occur in the United States (a fruit-tree spider mite (Tetranychus viennensis Zacher)). (p. 897).

Reports in this issue are for week ending July 26 unless otherwise indicated.

CEREAL AND FORAGE INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW JERSEY - Second-generation moths appearing in light traps. (Ins.-Dis. Newsltr., July 23). IOWA - Between broods. Moths of second generation flying in southern two-thirds of State and eggs being laid in whorl and early tassel stages. Some larvae and pupae of first generation remain present in all areas. (Iowa Ins. Inf., July 22).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - IOWA - Adults abundant in western area. (Iowa Ins. Inf., July 22).

A STRIPED BLISTER BEETLE (Epicauta sp.) - IOWA - Severely attacking soybeans and corn in Linn County. (Iowa Ins. Inf., July 22).

LEAFHOPPERS - NEW YORK - Building up on alfalfa in Livingston County. (N. Y. Wkly. Rpt., July 22). NEW JERSEY - High numbers of Empoasca fabae present in some fields of alfalfa. (Ins.-Dis. Newsltr., July 23).

LYGUS BUGS (Lygus spp.) - UTAH - Very numerous on alfalfa intended for seed in Erda area, Tooele County. Approximately 90 percent L. elisus. (Knowlton).

GARDEN SYMPHYLAN (Scutigerella immaculata) - IOWA - Infesting field of soybeans in western Ringgold County. This brings to 11 the number of counties in which pest is causing economic loss. (Iowa Ins. Inf., July 22).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - UTAH - Keeping large areas of range and farm lands bare in Box Elder, Cache and Tooele Counties. Some controls applied locally. (Knowlton).

GRASSHOPPERS - IOWA - Abundant in scattered areas of southern half of State. (Iowa Ins. Inf., July 22). UTAH - Grasshoppers, largely Melanoplus bivittatus and M. sanguinipes, moving from range and vacant lots into many home gardens at Tooele, Tooele County. (Knowlton).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - NEW YORK - Emergence maintained level of 200-300 per day since July 6 in eastern area; female-male ratios mostly above 1 : 1. Threat continues, protection urged. (N. Y. Wkly. Rpt., July 22). NEW JERSEY - Adults continue emergence in orchard at Cranbury; maggot protection required in central and northern counties. (Ins.-Dis. Newsltr., July 23).

ORCHARD MITES - MISSOURI - Mixed populations of Tetranychus telarius and Panonychus ulmi present in all areas of State but vary greatly. Spider mites will probably continue as major problem in both apple and peach orchards until fall rains. (Wkly. Rpt. Fr. Grs., July 24).

BLUEBERRY MAGGOT (Rhagoletis pomonella) - NEW JERSEY - Maggots now very noticeable in untreated blueberry areas; some shipments of fruit rejected because of too excessive infestation due to poor control program. Adults still very abundant. (Ins.-Dis. Newsltr., July 23).

TRUCK CROP INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW YORK - Very scarce this year; not expected to be problem for bean growers. (N. Y. Wkly. Rpt., July 22). UTAH - Damaging several home gardens at Tooele. (Knowlton).

POTATO LEAFHOPPER (Empoasca fabae) - NEW YORK - Building up on beans; controls needed. (N. Y. Wkly. Rpt., July 22).

GREEN PEACH APHID (*Myzus persicae*) - UTAH - Moderately numerous on sugar beets and potatoes at southwestern Granger, Salt Lake County. (Knowlton).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Infestations vary greatly; punctured squares above 25 percent in untreated fields in one-third of counties reporting. Dorchester, Berkeley, Jasper and Lee Counties report 45-64 percent of squares punctured. Another one-third of counties report less than 15 percent of squares punctured. Normal buildup occurring. Migration expected to begin this week in southeast and about August 1 in Piedmont. (Cott. Ltr., July 22). First-generation weevils increasing more rapidly in Florence area, but infestations still relatively light. (Taft et al., July 24). GEORGIA - Percent punctured squares 1-10 in 56 percent of fields, 11-25 in 29 percent, 26-50 in 9 percent, over 50 in 3 percent during period July 18-24. (Jordan). ARKANSAS - Weevil activity increasing in southwest, but below normal statewide. Increased activity expected next two weeks. (Wkly. Cott. Ins. Rpt., July 19). LOUISIANA - Infestations generally light in Tallulah area, but some damage occurring where showers interfering with control schedules. (Smith et al.). MISSISSIPPI - Percent punctured squares ranged 0.25-77 (averaged 15.5) in 15 of 27 fields checked in delta area. Population increasing in infested fields. (Pfirmer et al.). TEXAS - Nearing economic levels in some older cotton in northwest. (Tex. Coop. Rpt., July 19).

BOLLWORMS (*Heliothis* spp., et al.). - SOUTH CAROLINA - Larvae per 100 terminals July 18-24 were 1-3 in 45 percent of fields, 4-10 in 25 percent of fields, 11-25 in 5 percent of fields and over 25 in only 1 percent of fields. (Jordan). ARKANSAS - Third-generation moth emergence heavy in some areas, especially in sections of southeast and southwest. Egg counts increased rapidly. (Wkly. Cott. Ins. Rpt., July 19). LOUISIANA - Of primary importance in Tallulah area at present. Egg and larval terminal counts much higher than in previous week. Some boll damage occurring. (Smith et al.). MISSISSIPPI - Percent injured squares ranged 0.2-3.25 (averaged 1.44) in 20 of 27 fields checked in delta area. Moderate moth flight still underway. Egg deposition appears to be primarily down in plant. First and second-stage larvae found in white blooms in several fields. (Pfirmer et al.). TEXAS - Continues most damaging cotton insect over State. (Tex. Coop. Rpt., July 19).

PINK BOLLWORM (*Pectinophora gossypiella*) - TEXAS - Much of cotton in infested areas of Matagorda County nearing maturity, but considerable damage still being inflicted. In Cayonose area of Pecos County, infestation still persists and controls being continued. (Tex. Coop. Rpt., July 19).

GARDEN WEBWORM (*Loxostege similalis*) - TEXAS - Generally distributed over northwest and south plains areas; some heavy infestations required controls in these sections. (Tex. Coop. Rpt., July 19).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - CALIFORNIA - Larvae found in many Fresno County fields; also in Kings County, some serious infestations reported. (Leigh, July 19).

COTTON LEAFWORM (*Alabama argillacea*) - TEXAS - Few locally heavy infestations present in areas of Victoria and Starr Counties, but indications do not point to outbreaks in other areas at present. (Tex. Coop. Rpt., July 19).

BEE T ARMYWORM (*Spodoptera exigua*) - GEORGIA - Infestations found in 10 percent of cotton fields checked in Decatur, Terrell, Sumter, Calhoun, Early, Clay, Miller, Stewart, Colquitt and Grady Counties July 18-24. Light in all but very few fields. Infestations appear to be decreasing. Another generation possible. (Jordan). TEXAS - General, light infestations present over wide areas of northwest constitute potential threat if conditions remain favorable for population increases. (Tex. Coop. Rpt., July 19).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Counts reaching economic levels in many fields throughout San Joaquin Valley. Reinfestation occurring in some fields already treated. Fields should be checked closely and controls applied where economic levels found. (Burton et al., July 22).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Economic populations present in many areas of northwest and south plains sections where much cotton is in critical fruiting stages. Controls being applied in many instances. (Tex. Coop. Rpt., July 19).

SPIDER MITES - CALIFORNIA - Tetranychus telarius becoming severe in Kerman area of Fresno County; ranged 50-100 per leaf in alkali soil areas. Generally light in Clovis area with occasional fields requiring treatment. Increasing in Mendota, Firebaugh, Tranquillity and San Joaquin areas with some fields being treated. (Ferris, July 19). Increasing in western part of county where controls not applied. T. pacificus appears dominant. (Leigh, July 19). Mites appear to be less numerous in Kern County, but cotton has grown rapidly and masked some injury. T. atlanticus continues abundant on lower portion of plants. (Black, July 19). In Shafter area, T. telarius apparently dominant species and populations increasing. (Leigh, July 19).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

AN APHID (Microparsus olivei) - PENNSYLVANIA - Very abundant on Desmodium canadensis in Centre County. No parasites present. Other aphids in area heavily parasitized and attacked by predators. Det. by J. O. Pepper. This is a new State record. (Pepper).

BAGWORM (Thyridopteryx ephemeraeformis) - NEW JERSEY - Becoming numerous in several areas. (Ins.-Dis. Newsltr., July 23).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST ^{1/}

During the period July 14 - 20, a total of 92 infestations was reported from TEXAS and 30 from NEW MEXICO. Specimens were reported from 46 counties in Texas and 12 counties in New Mexico. Screw-worm was reported for the first time this year from Deaf Smith and Erath Counties, Texas, and San Miguel County, New Mexico. A total of 119,488,250 sterile flies was released during the period July 14 - 20. (Anim. Dis. Erad. Div.).

^{1/} See map on following page.

LIGHT TRAP COLLECTIONS

| State | County | Locality | Date | Temperature | Precipitation | Type of trap | Area of trap | Insects | | | | | | | | | | | Total | | | | | |
|----------------|--------------|--------------|----------|-------------|---------------|--------------|--------------|----------------|----------|----------|----------|--------|--------|-----------|-----------|-----------|-----------|-----------|-------|-----------|--|--|--|----|
| | | | | | | | | Scirphid mites | Chalcids | Cynipids | Chalcids | Aphids | Aphids | Homoptera | Homoptera | Homoptera | Homoptera | Homoptera | | Homoptera | | | | |
| MISSISSIPPI | Stonewall | Stonewall | 7/9-15 | 67-95 | 1.46 | MV | 2 | | | 11 | 3 | 179 | 10 | 1 | 82 | 13 | 336 | 46 | | | | | | |
| | | | | | | | | | | | 2 | 372 | 5 | 9 | 176 | 13 | 376 | | 22 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| NEW JERSEY | Aura (rural) | Aura (rural) | 7/19, 22 | 67-95 | 1.46 | BL | 8 | | | | | | 2 | | | | | 28 | | | | | | |
| | | | | | | | | | | | | | | 1 | | | | | | 77 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 60 |
| SOUTH CAROLINA | Clemson | Clemson | 7/13-19 | 78-100 | | | I | | | 17 | | 1 | | 4 | 392 | | 69 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| TEXAS | Brownsville | Brownsville | 7/19-23 | 78-100 | | | 432 | 329 | | 972 | 383 | 6942 | 875 | 64 | 168 | 20 | 317 | 8 | 4652 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

* BL = blacklight; I = insectoconcentrator; MV = mercury vapor; 0 = other
** alf. = alfalfa; beet = garden beet and/or leaf beet; chalc. = chalcids (crucifers); cott. = cotton; EC = field corn; GA = sweet corn; GF = greenbean; let. = lettuce; mah. = peanut; pep. = pepper; pot. = potatoes; soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Hay crops IN Illinois DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|--|------------------|
| A. Pest or pest complex | <u>Meadow spittlebug (Philaenus spumarius)</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,047,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>1.07 ton</u> |
| D. Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>20.50</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>59,363</u> |
| F. <u>Acres</u> ^a treated | No. | <u>9,356</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>13</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>0.14 ton</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>2.87</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u></u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>7,001 ton</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.25</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>30,407</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>143,520</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u></u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>173,927</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 2-5-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Hay crops (Commodity) | IN | Illinois (State or District) | DURING | 1962 (Year) |
|-----------|---|---|---------------------------------|------------|----------------|
| A. | Pest or pest complex | Clover leaf weevil (<i>Hypera punctata</i>) | | | |
| B. | Number of acres ^a produced (From CRS) | No. | | 2,047,000 | |
| C. | Average yield per acre ^a (From CRS) | Units/ | | 1.07 ton | |
| D. | Price ^b per unit (ton) ^c (From CRS) | \$/ | | 20.50 | |
| E. | Acres ^a needing control | No. | | 112,585 | |
| F. | Acres ^a treated | No. | | 8,154 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | | 15 | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | | 0.16 ton | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | | 3.28 | |
| K. | Loss in quality, \$ per acre ^a | \$/ | | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | | 16,709 ton | |
| M. | Control cost, \$ per acre ^a | \$/ | | 3.25 | |
| N. | Control cost for all acres ^a , F x M | \$/ | | 26,500 | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$/ | | 342,533 | |
| P. | Quality loss for all acres ^a , (E-F) x K | \$/ | | | |
| Q. | Combined control cost and losses, N + O + P | \$/ | | 369,033 | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by _____ Clarence E. White

Date 2-4-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Hay crops IN Illinois DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|---|---------------------------------------|------------------|--|
| A. Pest or pest complex | <u>Pea aphid (Acyrtosiphon pisum)</u> | | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,047,000</u> | |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>1.07 ton</u> | |
| D. Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>20.50</u> | |
| E. <u>Acres</u> ^a needing control | No. | <u>16,376</u> | |
| F. <u>Acres</u> ^a treated | No. | <u>11,585</u> | |
| G. Reduction due to not treating where needed: | | | |
| H. Loss in yield, percent | % | <u>20</u> | |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>0.21 ton</u> | |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>4.31</u> | |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | | |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,006 ton</u> | |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.25</u> | |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>37,651</u> | |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>20,649</u> | |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | | |
| Q. Combined control cost and losses, N + O + P | \$ | <u>58,300</u> | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 1-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Soybeans IN Illinois DURING 1962
(Commodity) (State or District) (Year)

Table with 2 columns: Description (A-Q) and Value. A: Grasshoppers (Melanoplus spp.) B: 5,575,000 C: 28.5 bu. D: 2.35 E: 408,648 F: 372,197 G: Reduction due to not treating where needed: H: 20 I: 5.7 bu. J: 13.40 K: L: 207,771 bu. M: 2.25 N: 837,443 O: 448,443 P: Q: 1,325,886

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
b. Season average price per unit as given by CRS (describe basis).
c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 2-1-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Hay crops IN Illinois DURING 1962
(Commodity) (State or District) (Year)

| | | | | |
|----|--|---------------------------------------|-------------------|--|
| A. | Pest or pest complex | <u>Grasshoppers (Melanoplus spp.)</u> | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,047,000</u> | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>1.07 ton</u> | |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>20.50</u> | |
| E. | <u>Acres</u> ^a needing control | No. | <u>1,023,500</u> | |
| F. | <u>Acres</u> ^a treated | No. | <u>699,438</u> | |
| G. | Reduction due to not treating where needed: | | | |
| H. | Loss in yield, percent | % | <u>16.36</u> | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>0.18 ton</u> | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>3.69</u> | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>2.52</u> | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>58,331 ton</u> | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.25</u> | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>2,273,174</u> | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>1,195,789</u> | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>816,636</u> | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>4,285,599</u> | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 1-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Corn IN Illinois DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|--------------------|-----------------------|
| A. Pest or pest complex _____ | Soil insects _____ | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>8,270,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>83 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>1.06</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>5,449,103</u> |
| F. <u>Acres</u> ^a treated | No. | <u>3,069,035</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>10</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>8.3 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>8.80</u> |
| K. Loss in quality, \$ per _____ ^a | \$/ | _____ |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>19,754,564 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.25</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>9,974,363.75</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>20,944,598.40</u> |
| P. Quality loss for all _____ ^a , (E-F) x K | \$ | _____ |
| Q. Combined control cost and losses, N + O + P | \$ | <u>30,918,962.15</u> |

Comment: In addition to the above, there were 51,897 acres replanted at \$10/acre, equaling \$518,970 and 172,081 acres were treated after the corn was up at \$3.25/acre, equaling \$559,263.25 loss due to cutworms. This gives a grand total due to soil insects of \$31,997,195.40.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 1-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING _____ | Corn (Commodity) | IN _____ | Illinois (State or District) | DURING _____ | 1962 (Year) |
|--|---------------------|--------------------------------|---------------------------------|--------------|----------------|
| A. Pest or pest complex _____ | | Grasshoppers (Melanoplus spp.) | | | |
| B. Number of _____ acres ^a produced (From CRS) | | No. | | 8,270,000 | |
| C. Average yield per _____ acre ^a (From CRS) | | Units/ | | 83 bu. | |
| D. Price ^b per unit (bu.) ^c (From CRS) | | \$/ | | 1.06 | |
| E. _____ Acres ^a needing control | | No. | | 248,100 | |
| F. _____ Acres ^a treated | | No. | | 235,128 | |
| G. Reduction due to not treating where needed: | | | | | |
| H. Loss in yield, percent | | % | | 5 | |
| I. Loss in yield, units per _____ acre ^a , C x H | | Units/ | | 4.15 bu. | |
| J. Loss in yield, \$ per _____ acre ^a , D x I | | \$/ | | 4.40 | |
| K. Loss in quality, \$ per _____ ^a | | \$/ | | | |
| L. Yield loss for all _____ acres ^a , (E-F) x I | | Units | | 53,834 bu. | |
| M. Control cost, \$ per _____ acre ^a | | \$/ | | 2.25 | |
| N. Control cost for all _____ acres ^a , F x M | | \$ | | 529,038 | |
| O. Yield loss for all _____ acres ^a , (E-F) x J | | \$ | | 57,077 | |
| P. Quality loss for all _____ ^a , (E-F) x K | | \$ | | | |
| Q. Combined control cost and losses, N + O + P | | \$ | | 586,115 | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by _____ Clarence E. White

Date _____ 1-31-63 _____

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Illinois DURING 1962
 (Commodity) (State or District) (Year)

| A. Pest or pest complex | | Armyworm (<i>Pseudaletia unipuncta</i>) | |
|--|--------|---|--|
| B. Number of acres ^a produced (From CRS) | No. | 1,522,000 | |
| C. Average yield per acre ^a (From CRS) | Units/ | 32.5 bu. | |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | 2.05 | |
| E. Acres ^a needing control | No. | 30,440 | |
| F. Acres ^a treated | No. | 19,438 | |
| G. Reduction due to not treating where needed: | | | |
| H. Loss in yield, percent | % | 10 | |
| I. Loss in yield, units per acre ^a , C x H | Units/ | 3.25 bu. | |
| J. Loss in yield, \$ per acre ^a , D x I | \$/ | 6.66 | |
| K. Loss in quality, \$ per acre ^a | \$/ | | |
| L. Yield loss for all acres ^a , (E-F) x I | Units | 35,757 bu. | |
| M. Control cost, \$ per acre ^a | \$/ | 2.25 | |
| N. Control cost for all acres ^a , F x M | \$ | 43,735.50 | |
| O. Yield loss for all acres ^a , (E-F) x J | \$ | 73,273.32 | |
| P. Quality loss for all acres ^a , (E-F) x K | \$ | | |
| Q. Combined control cost and losses, N + O + P | \$ | 117,008.82 | |

Comment: In addition, there were 8,260 acres of oats, 5,618 acres of rye and barley, and 2,577 acres of grass treated at \$2.25/acre, equaling \$37,023.75. No figures are available to show acres needing treatment or yield losses on these crops.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 1-17-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa IN Illinois DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|--|------------------|
| A. Pest or pest complex | <u>Potato leafhopper (<i>Empoasca fabae</i>)</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>1,065,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>1.28 ton</u> |
| D. Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>22.50</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>24,741</u> |
| F. <u>Acres</u> ^a treated | No. | <u>12,294</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>6.2</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>0.08 ton</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>1.80</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>5.63</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>996 ton</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.25</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>39,949</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>22,408</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>70,088</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>132,445</u> |

Comment: Practically all damage was confined to an area in the West, Central
and West-southwest districts of the State this year.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Clarence E. White

Date 2-6-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Soybeans (Commodity) | IN | Arkansas (State or District) | DURING | 1962 (Year) |
|---|--|--------------------|---------------------------------|--------|---------------------|
| A. Pest or pest complex <u>Corn earworm (<i>Heliothis zea</i>), green stink bug, (<i>Acrosternum hilare</i>), southern green stink bug (<i>Nezara viridula</i>)</u> | | | | | |
| B. | Number of | acres ^a | produced (From CRS) | No. | 2,707,000 |
| C. | Average yield per | acres ^a | (From CRS) | Units/ | 21.5 bu. |
| D. | Price ^b per unit (bu.) ^c | | (From CRS) | \$/ | 2.35 season average |
| E. | Acres ^a | | needing control | No. | 206,000 |
| F. | Acres ^a | | treated | No. | 201,605 |
| G. Reduction due to not treating where needed: | | | | | |
| H. | Loss in yield, percent | | | % | 10 |
| I. | Loss in yield, units per | acre ^a | C x H | Units/ | 2.15 bu. |
| J. | Loss in yield, \$ per | acre ^a | D x I | \$/ | 5.05 |
| K. | Loss in quality, \$ per | acre ^a | | \$/ | 0 |
| L. | Yield loss for all | acres ^a | (E-F) x I | Units | 9,449 bu. |
| M. | Control cost, \$ per | acre ^a | | \$/ | 2.00 |
| N. | Control cost for all | acres ^a | F x M | \$ | 403,210 |
| O. | Yield loss for all | acres ^a | (E-F) x J | \$ | 22,194 |
| P. | Quality loss for all | acres ^a | (E-F) x K | \$ | 0 |
| Q. | Combined control cost and losses, | | N + O + P | \$ | 425,404 |

Comment: For a year or two processing mills in our trade area reduced the price paid for soybeans showing signs of stink bug feeding. Research showed that, under our conditions, no reduction in oil or protein content occurred.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. P. Boyer

Date 2-26-63

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on April 30, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U. S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

CHINESE ROSE BEETLE (Adoretus sinicus (Burm.)) abundant on several hosts with flowers in baggage at Honolulu, Hawaii.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) 14 times in cargo and baggage; 2 times at San Ysidro, California; 1 time at Nogales, Arizona; 1 time at El Paso, 6 times at Laredo and 3 times at Brownsville, Texas; and 1 time at Miami, Florida.

A FRUIT FLY (Anastrepha sp.) in broadbean (Vicia faba) in baggage at Miami, Florida. This is first Plant Quarantine Division record in the host.

A WEEVIL (Apion sp., probably carduorum Kirby) (a pest of artichoke in the Mediterranean area) in cargo at New York International Airport, New York.

LIGHT-BROWN APPLE MOTH (Austrotortrix postvittana (Wlk.)) (or near this Australian and New Zealand deciduous fruit pest) and other tortricid larval specimens near Tortrix excessana (Wlk.) (a needle-tying moth) in apple cargo at Honolulu, Hawaii.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 8 times in baggage, mail, cargo and stores; 1 time at New York and 2 times at New York International Airport, New York; and 5 times at Honolulu, Hawaii.

A CRAMBID (Chilo sp.) (stem boring pest of rice in Asiatic region) in rice straw stores at Philadelphia, Pennsylvania.

YELLOW PEACH MOTH (Dichocrocis punctiferalis (Guen.)) (of the Orient and Australia) in Pinus sp. in baggage and cargo at Seattle, Washington.

A WEEVIL (Epicaerus sp., possibly cognatus Sharp) in potatoes in baggage at Eagle Pass, Texas.

A SUGAR-BEET CROWN BORER (Gnorimoschema ocellatella (Boyd)) (a Mediterranean beet pest) twice in stores at New York, New York.

A SCARAB (Heterochelus sp.) with Protea flowers in baggage at New York, New York.

A PYRAUSTID (Leucinodes sp., possibly L. orbonalis Guen., eggplant fruit borer of southeastern Asia and much of Africa) 4 times in tomato, hot pepper, eggplant and groundcherry in baggage at New York International Airport, New York.

A CECIDOMYIID SEED MIDGE (Plemeliella abietina Seitner) (a pest of certain conifers in Europe) in Picea seed in mail at Hoboken, New Jersey

A WEEVIL (Rhynchites sp.) (an economic genus) twice in Berberis seed in mail at District of Columbia Inspection House.

DURRA STEM BORER (Sesamia cretica Led.) 5 times; in mail at Buffalo, New York; in broomcorn cargo at Baltimore, Maryland; in New York, in baggage at New York International Airport, and at New York in cargo of brooms and in a broom in baggage.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 3 times in general cargo and 1 time in baggage with oranges; 2 times each at Norfolk, Virginia, and New York, New York.

KHAPRA BEETLE (Trogoderma granarium Everts) (or probably that species) 49 times in stores, holds of ships and cargoes of celery seed, gum karaya and guar gum, tamarind seed powder, mangrove bark, myrobalans, cotton piece goods, black pepper, psyllium and fennel seeds and monkey feed; 3 times at Baltimore, Maryland; 1 time at Norfolk, Virginia; 1 time at Charleston, South Carolina; 4 times at Savannah, Georgia; 1 time at Wilmington, North Carolina; 2 times each at Houston and Corpus Christi, Texas; 3 times at Chicago, Illinois; 7 times at Philadelphia, Pennsylvania; 23 times at New York, New York; 1 time at Honolulu, Hawaii; and 1 time at New York International Airport, New York.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

A FRUIT-TREE SPIDER MITE (Tetranychus viennensis Zacher)

Economic Importance: This tetranychid mite has become of considerable importance on fruit trees in various areas of Europe since it was first described by Friedrich Zacher in 1920. It has been known to occur in parts of Western Europe for many years, but was only recently found to be present in Greece, Turkey and Japan. It was considered serious on plum, apricot and peach during 1959 in Turkey, and damage was severe on apple locally in Greece in 1960. Apparently, this species has become of greater importance in Europe as a result of the widespread application of modern insecticides in orchards for the control of other pests.

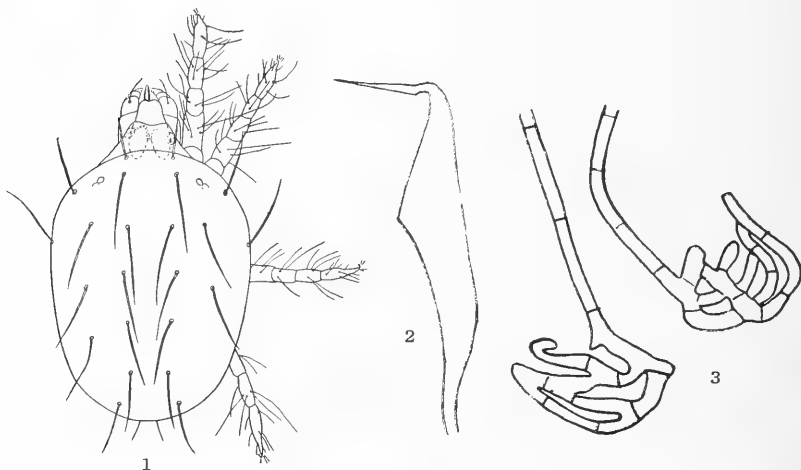
T. viennensis has been intercepted on several occasions at U.S. Ports of entry. From 1958 through 1963, the pest was taken 3 times in Hawaii; twice at Seattle, Washington; and once each at Wilmington, North Carolina; Miami, Florida; and New York, New York.

Hosts: Recorded on a number of hosts, including apple, pear, sweet and sour cherries, European birdcherry, quince, plum, peach, apricot, hawthorn, blackthorn and oak.

Distribution: Europe (recorded in Austria, Bulgaria, England, France, Germany, Greece, Hungary, Sweden and Switzerland). Also recorded in Turkey, U.S.S.R., China, Korea and Japan.

Life History and Habits: The biology as studied in the Mediterranean region of France on apples in 1953 is as follows: Females overwintered in groups, mainly in cracks in the bark or in the soil around the trees. They became active in the spring and dispersed to the young leaves. At Montpellier, they became active about March 25 and were found on all parts of the trees by April 7. They fed and oviposited on the lower surface of the outer leaves of the terminal buds. Natural mortality was high in the spring and increased still more in May and June owing to the activities of predators. However, large populations developed in the summer under the influences of high temperatures, long daylight hours, an abundance of mature leaves and the destruction of natural enemies by organic insecticides and acaricides. Maximum numbers were present in August and September, and the hibernating females were produced in early autumn and entered diapause in late September or early October when the critical photoperiod was 13 to 14 hours per day. The last males and eggs were seen in October. At Sapporo, Hokkaido, Japan, the mite was found to overwinter in the adult stage. Overwintered mites spend the winter much as they do in France and appear the next year on leaves of host trees from the end of May to the beginning of June. There are four or five generations a year in Hokkaido and an extra one at Kuroishi, Honshu, Japan.

Description: FEMALE - This is a typical tetranychid mite, with the following exceptions. It is unique in having the distal ends of the peritreme anastomosing. Also, the dorsal striations are transverse on the posterior portion of the body as in *Tetranychus pacificus*. MALE - Aedeagus is bent sharply dorsad, and the distal knob is modified as a small anterior angulation near the base of the bent portion, with the caudal angulation very attenuated and tapering. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.)



Figures of *Tetranychus viennensis* Zacher: 1, Dorsal View of Female; 2, Aedeagus; 3 Peritreme.

Major references: 1. Ehara, S. 1956. J. Facul. Sci. Hokkaido Univ. Ser. VI. Zool. 12(3):252-254. 2. Pritchard, A. E. and Baker, E. W. 1955. A revision of the spider mite family Tetranychidae, pp. 384-385, San Francisco. 3. Rambier, A. 1954. Acad. d'Agr. de France Compt. Rend. 40(8):340-343. 4. Zacher, F. 1920. Z. f. Angewandte Ent. 7(1):186-187.

Figures: Female from Ehara; peritreme and aedeagus from Zacher.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPERS abundant in areas of Illinois, Missouri, Iowa, Wisconsin, Minnesota, Nebraska and other States. Damage reported on alfalfa, corn, pastures and rangeland. Some light to severe boll clipping observed on flax in North Dakota. (pp. 901-903). Second-brood EUROPEAN CORN BORER active in Minnesota and Wisconsin; first-generation survey in Illinois showed populations in northwest and west districts to be about twice as high as in 1962 or the highest since 1958. (p. 903). SOUTHWESTERN CORN BORER very heavy on corn locally in Pinal County, Arizona, but only trace populations found in south central Kansas. FALL ARMYWORM active in Delaware, Maryland, Illinois and Kansas; and LESSER CORNSTALK BORER heavily damaged sorghum in Maricopa County, Arizona. (p. 904). Populations and damage by WESTERN CORN ROOTWORM to corn in panhandle of Nebraska higher than previous years, and high populations observed in areas of Missouri and South Dakota. Distribution map of western corn rootworm in Iowa shows considerable spread. (p. 905). NORTHERN CORN ROOTWORM lodged corn evident in many parts of Illinois and damage reported in Iowa and Wisconsin. (pp. 905-906). CORN LEAF APHID plentiful on corn and/or related crops in number of States. Increase rather general past two weeks. RICE DELPHACID (*Sogatia orizicola*) found at Belle Glade, Palm Beach County, Florida. (p. 907). TWO-SPOTTED SPIDER MITE heavy and damaging corn in Colorado and building up in Idaho and Utah. Undetermined SPIDER MITES increasing rapidly on corn in North Platte Valley of Nebraska. (pp. 907-908).

SPOTTED ALFALFA APHID building up in northern Kansas and in areas of Colorado. (p. 908). PEA APHID increasing on alfalfa in several States across country. (pp. 908-909). LYGUS BUGS becoming abundant on alfalfa seed crops in several Western States, and POTATO LEAFHOPPER yellowing alfalfa in Vermont and Maryland. (p. 909). THREE-CORNERED ALFALFA HOPPER adults abundant in areas of New Mexico and Arizona on alfalfa. (p. 909-910). A BERMUDA GRASS MITE (*Aceria neocynodonis*) reported damaging lawns in New Mexico and Arizona. (p. 911).

ORCHARD MITES, principally EUROPEAN RED MITE and TWO-SPOTTED SPIDER MITE, continue to increase on fruit trees in Eastern and Midwestern States; controls necessary. (p. 913). POTATO LEAFHOPPER damaging variety of truck crops in Eastern States (p. 915), and PEA APHID very abundant on peas on Nezperce area of Idaho (p. 916). GREEN PEACH APHID increasing on tobacco in Virginia and Maryland; controls necessary. (p. 917-918).

BOLL WEEVIL populations continue relatively light compared with previous years in Southeast and Mississippi Valley, but increases reported. Third-generation adults appearing and migration occurring in several areas. (p. 918). BOLLWORMS continue major pest of cotton from Texas to Tennessee; protection of crop will be necessary in Southeast and Mississippi Valley for remainder of season. (pp. 918-919). BOLLWORM increase reported in California, Arizona and New Mexico. PINK BOLLWORM caused significant economic damage in Matagorda and Calhoun Counties, Texas; and SALT-MARSH CATERPILLAR outbreak reported in Fresno and Kings Counties, California (pp. 919-920). Damaging numbers of LYGUS BUGS present in Arizona and California cotton fields. (p. 920). SPIDER MITES continue a problem in California, and spot infestations reported in several other States. (p. 921).

MOSQUITOES heaviest in several years in Nevada, especially in northern areas, and annoying in areas of Utah, New Mexico, North Dakota, Texas and other States; but dry weather conditions reduced numbers in Ohio and Maine. (pp. 927-928). FACE FLY continues to increase in several States (p. 928), and HORN FLY populations varied light to heavy on cattle rather generally (p. 929). STABLE FLY also annoying to cattle in several States. (p. 929).

JAPANESE BEETLE adults continue numerous in Battle Creek area of Michigan, and considerable activity reported in various areas of Ohio. Populations in Eastern States appear to be greatly reduced from previous years. (pp. 925, 932). STRAWBERRY ROOT WEEVIL adults annoying to homeowners in Pennsylvania, Ohio, Michigan, Wisconsin and Oregon. (p. 930).

DETECTION

New State records reported were MEXICAN FRUIT FLY in Arizona (p. 914), MIMOSA WEBWORM in Tulsa County, Oklahoma (p. 924) and a BIG-EYED BUG (*Hypogeocoris imperialis*) in Arkansas (p. 932). New county records of significance were WESTERN CORN ROOTWORM in Hancock, Story, Dallas, Madison, Union and Adams Counties, Iowa (p. 905); CEREAL LEAF BEETLE in Lucas County, Ohio (p. 906); ELM LEAF BEETLE in Chase County, Kansas (p. 923); MIMOSA WEBWORM in Columbiana County, Ohio, and Johnson County, Kansas (p. 924), and WHITE-FRINGED BEETLES in Lee County, Alabama (p. 933).

CORRECTIONS

See page 933

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 927).
Hessian Fly survey in Illinois (map). (p. 906).

Reports in this issue are for week ending August 2, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

AUGUST 1963

The Weather Bureau's 30-day outlook for August calls for temperatures to average below seasonal normals in the Northwest and the Southeast. In the remainder of the Nation above normal averages are predicted, with greatest departures over northeastern and southwestern sections. Rainfall is expected to be greater than normal in the Southeast and the Northern Plains. Subnormal amounts are indicated for the Northeast, the Southern Plains, and the Great Basin. In areas not specified, near normal precipitation is in prospect.

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

WEATHER OF THE WEEK ENDING AUGUST 5

Daily temperatures exhibited mostly only slight variations and weekly averages departed very little from normal over a major part of the Nation. One 24-hour change of note occurred in New England where the 29th was the final day of a 6-day heat wave. On the 29th, Burlington, Vermont, heated to 97°, but only to 70° the following day. Red Bluff, California, with 7° below normal, had the (continued on page 912)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OHIO - Melanoplus differentialis increasing in south central and southeastern areas; averaged 4-7 per square yard week ending July 26. Building up in northwest area week ending August 2; one-half to three-fourths grown in Hardin and Hancock Counties. (Lyon). ILLINOIS - Melanoplus spp. abundant in clover and alfalfa in northern area; up to 50-60 per square yard found in some fields. Populations in grassy roadsides generally under 10 per square yard, with occasional spot as high as 40 per square yard. (Ill. Ins. Rpt.). MISSOURI - Damage by Melanoplus spp. evident in pastures and legumes in dry spots in northwest areas. Counts in these areas ranged 5-31 per square yard in field. Marginal feeding also evident on row crops in these areas. (Munson, Thomas, Wood; July 27). IOWA - Grasshoppers eating silks from corn in first 5-6 rows and ragging soybeans adjacent to fencerows and roadsides; M. differentialis, third instar to adult, dominant. Populations range 15-30 per square yard in roadsides. (Iowa Ins. Inf., July 29). WISCONSIN - Nymphs of M. differentialis maturing in more advanced areas of State. Populations, approximately 50 percent M. differentialis and 50 percent M. femurrubrum, completely defoliated soil bank alfalfafield in western Dane County. Corn also being damaged in area. Populations little changed in Rock, Green, Dane, Columbia, Marquette, Waushara, Portage, Waupaca, Green Lake, Fond du Lac, Grant or Trempealeau Counties, and damage generally negligible. Some damage evident in Pepin County where populations of late stage M. femurrubrum and M. differentialis nymphs range up to 40 per square yard in some alfalfa fields. Populations, principally M. femurrubrum, light to moderate in Juneau, Eau Claire, Chippewa and Dunn Counties, with less than 15 per square yard in most alfalfa. Some damage noted in parts of La Crosse and Trempealeau Counties. (Wis. Ins. Sur., July 26). Little change noted in populations to August 2. Adults of both M. femurrubrum and M. differentialis appearing more commonly in southern areas. M. differentialis 30 percent of grasshopper population in Iowa County alfalfa, 25 percent in Lafayette, 40 percent in Grant and 50 percent in Green. M. femurrubrum nearly entire population in Rock, Walworth, Crawford and portions of Dane County. Noticeable feeding evident on sorghum in Rock County in which populations of M. differentialis, about 40 per yard, made up greater share. (Wis. Ins. Sur.).

MINNESOTA - Grasshopper populations in southeast, south central, southwest and central districts higher than anticipated. Warm, dry weather permitted excellent egg hatch and survival. Economic populations, over 10 per square yard, found where only light infestations expected. Infestations quite scattered and localized. M. femurrubrum and M. differentialis ranged 5-54 per square yard in alfalfa and grassland in Sherburne, Isanti, Mille Lacs and Anoka Counties. Adults appearing and movement into corn occurring. Severe margin damage to corn seen in high count fields, especially where M. differentialis dominant. In northwest district, Kittson and Marshall Counties have few fields with economic numbers; infestations primarily along roadsides and ditch banks. Very little movement into crops occurred. In west central district in Douglas County, roadside infestation of M. bivittatus noted south of Alexandria and moving into adjacent corn fields. In southwest district, populations average 13 per square yard. Few fields in Cottonwood, Murray, Lyon and Rock Counties had economic populations. Most infestations along roadsides in southeast and south central districts. Few fields in Rice and Olmsted Counties had 20-60 per square yard. (Minn. Ins. Rpt.). NORTH DAKOTA - Survey conducted in McLean, Sheridan and Burleigh Counties (July 19-26) showed marginal counts of less than 1 to 25 per square yard. Field counts ranged from less than 1 to 9 per square yard. Higher counts in flax, late oats and alfalfa. Some light to severe boll clipping observed in flax. Light leaf striping seen on late small grain fields. Dominant species M. bivittatus and M. packardii (approximately 40 percent adults). (Brandvik). Cropland survey (July 19-26) in McKenzie, Mountrail, Williams and Divide Counties showed 3-15 per square yard in roadsides and 1-5 in fields. Dominant species M. bivittatus and M. sanguinipes. (Olson). Survey in Pierce, McHenry, Ward and Bottineau Counties (July 19-26) gave average counts 5 per square yard in fields and 7 per square yard in margins. Species involved were M. bivittatus, M. sanguinipes, M. packardii, M. femurrubrum and Camnula pellucida. Most in fifth instar. Adults

ranged from 0 for M. femurrubrum to 35 percent for M. bivittatus. Twenty-five percent of M. sanguinipes and C. pellucida adults. (N. D. Ins. Sur.). Adult survey conducted on rangeland in McKenzie and Dunn Counties July 27-August 2. Lightly infested rangeland in McKenzie County averaged 4-5 per square yard. Areas with threatening infestations averaged 8 per square yard. Lightly infested areas comprised 237,000 acres, and threatening areas covered 10,880 acres. Infestations in Dunn County (Ft. Berthold) noneconomic. Average less than one. Ageneotettix deorum, Aulocara elliotti, M. sanguinipes and C. pellucida dominant species. (Brandvik). SOUTH DAKOTA - Range survey completed in Custer and Fall River Counties. Custer County has approximately 65,000 acres of infestation (threatening or higher); approximately 75 percent private or State owned land, and 25 percent U.S. Forest Service land. Light infestation present on 35,000 acres in Custer County and 20,000 acres in Fall River County. Latter area about 50 percent private and State owned and 50 percent Forest Service land. M. occidentalis, Aulocara elliotti, Trachyrhachys kiowa and Ageneotettix deorum species involved. (Burge, Zimmerman; July 24). Situation unchanged from previous surveys except for an area in Shannon County which has 20,000 to 30,000 acres of threatening infested rangeland. Threatening area surrounded by large area of light infestation. (Burge, Zimmerman; August 1).

NEBRASKA - Grasshopper populations up to 24 per square yard in Dawes and Sioux Counties week ending July 26. Ageneotettix deorum, Amphitornus coloradus, M. sanguinipes, T. kiowa and Cordillacris occipitalis species present. (Hagen). Formal survey indicates infestations range from noneconomic to a conservative 150 per square yard in crops and conservation reserve land or idle land. New light infestation appeared in south central area. Extremely high populations present in Frontier, Dawson and Lincoln Counties. Light to moderate infestations occurring in Platte River Valley in Garden and Morrill Counties. North central and northeast areas have light to moderate infestations, chiefly in legumes, conservation reserves or idle land. Some damage can be expected in these areas. Dominant species M. femurrubrum, M. differentialis and M. bivittatus. Rangeland infestations high in South Hills and Wildcat Hills in Banner, Morrill and Scotts Bluff Counties. Populations of 30 per square yard common. Dominant species Aulocara elliotti, Ageneotettix deorum, Trachyrhachys kiowa and Phliobostroma quadrimaculatum. Pine Ridge area of Dawes, Sheridan and Sioux Counties carries severe to very severe populations (15-28 and above per square yard). Dominant species same as above plus Amphitornus coloradus and M. sanguinipes. Other very abundant local populations scattered throughout State. (Bell). Populations locally very abundant and injurious at North Platte, Lincoln County, on rangeland. Phoetaliotes nebrascensis most abundant species (approximately 30-50 per square yard) in western wheat grass. M. femurrubrum dominant species in field margins at North Platte Experiment Station. (Pruess). KANSAS - Counts in northeast and east central areas July 20-26 ranged from less than one to 2 per square yard in alfalfa and corn fields, while margin counts in same areas ranged 1-15 per square yard. Counties with higher counts were Nemaha, Jackson, Leavenworth and Osage. Species predominantly M. femurrubrum, M. differentialis and M. bivittatus. (Peters). Severely damaged first 2-3 rows of cornfield in Riley County, northeast. (Kaufmann, Brooks; August 2).

OKLAHOMA - Several species of grasshoppers moderate to heavy along roadsides and field margins in localized southwest areas; apparent feeding damage light, but could increase if dry weather persists. Moderate to heavy in Murray, Lincoln, Muskogee and Mayes Counties. (Okla. Coop. Sur., July 27). Light to threatening populations of adults in crop margins in Canadian, Cleveland and Oklahoma Counties. Moderate to heavy populations in alfalfa and field margins in sections of McClain County. Heaviest counts averaged 25-40 per square yard with M. sanguinipes, M. bivittatus, M. differentialis and M. packardii dominant. Rangeland counts in the 4 counties low. Reports from Bryan County show some severe but very spotted infestations. Moderate to heavy rangeland infestations reported from Murray County. (Okla. Coop. Sur.). WYOMING - Adults and nymphs of several species numerous on alfalfa and small grains in Natrona, Johnson and Sheridan Counties; counts 8-12 per square yard. (Marks, July 26). UTAH - Baiting of 3,000 acres for control of Melanoplus borealis at 10,300 feet elevation in Beaver Mountains

reported; outbreak of grasshoppers in the large west Howell, Rozell Flats to Promintory Point area of Box Elder County covers at least 100,000 acres. (Knowlton, Thornley). Moderate to severe in several areas of Sanpete County. Of 50,000 acres infested, only 200 treated. (Knowlton, Funk). A very heavy movement of winged grasshoppers occurred on the highway north of Cedar City, Iron County, night of July 26-27 between 12:30 a.m. and 4:30 a.m., then moved out. (Knowlton). NEVADA - Various species heavy on northern outskirts of Reno and Sparks, and in Sun Valley, Washoe County, migrating from drying range areas into yards, etc. and causing considerable damage. (Coop. Rpt., July 26). *Idiostatus* sp. heavy along highway and lighter populations present in 10-12 mile area from Sod House to junction of highways 8A and 95 in Humboldt County. (Lauderdale). CALIFORNIA - Medium populations of *M. devastator* on rangeland grass in Grass Valley, Nevada County. *Dissosteira carolina* medium on grass and blackberry thickets in Cedar Flats, Trinity County. (Cal. Coop. Rpt.). OREGON - Two species attacking forage crops and cutover pastureland in economic numbers in Douglas County. (Vertrees, July 27).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - CONNECTICUT - Populations apparently light on sweet corn. (Johnson, Minnum; July 30). NEW YORK - Relatively light on sweet corn in Hudson Valley; second-brood hatching expected by July 31. (N. Y. Wkly. Rpt., July 29). PENNSYLVANIA - Three percent of sweet corn stalks infested in Erie County; some as high as 5 percent. (Adams, July 23). MARYLAND - Generally light in field and sweet corn in all sections. Moths increased sharply in light trap collections at Centreville. (U. Md., Ent. Dept.). DELAWARE - Adults increased sharply July 24 accompanied by increase in egg masses on corn July 24-25 (Burbutis, Evans). OHIO - Populations slightly higher than at same time in 1962 in Van Wert County, northwest area. (Wells, Schurr). MICHIGAN - Heavy first-brood injury in Wayne County; 3 adults collected July 26 in Monroe County; more females than males being taken now at a Livingston County blacklight trap; 14 taken recently. (Kidd, Laser, Janes, Newman). ILLINOIS - First-generation survey conducted July 22-29. Populations in northeast, east, central and west-southwest districts approximately the same as in 1962, but northwest and west districts populations about twice as high as in 1962 or the highest since 1958. (See table below.) Thirty-two percent of larvae and pupae collected in a random survey July 22-25 in west and northwest districts infested with *Nosema* (*Perezia*) *pyraustae*. Larvae 0-70 percent infected. Borer development now 4 percent fifth instar, 32 percent pupae and 64 percent empty cases in northwest; 11.1 percent fourth instar, 33.3 percent fifth instar, 33.3 percent pupae and 22.2 percent empty cases in northeast. Eggs being laid in all districts. (Ill. Ins. Rpt.).

EUROPEAN CORN BORER POPULATION (FIRST GENERATION) IN ILLINOIS - 1963

| County | Average Number of Borers Per 100 Plants | County | Average Number of Borers Per 100 Plants |
|-----------|--|------------|--|
| Boone | 1.2 | Livingston | 1.6 |
| Bureau | 24.4 | Logan | 1.2 |
| Champaign | 0 | Macoupin | 0.4 |
| Christian | 0 | McDonough | 28.8 |
| De Kalb | 7.0 | McLean | 3.2 |
| Greene | 0 | Mercer | 4.72 |
| Iroquois | 6.4 | Ogle | 21.4 |
| Kankakee | 4.6 | Sangamon | 0 |
| Knox | 20.4 | Whiteside | 11.8 |
| La Salle | 7.2 | | |

MISSOURI - Percent emergence 24, 41 and 29 in 3 fields checked in extreme north-west area; several adults observed at lights, but no egg masses or small larvae found. (Munson, Thomas, Wood; July 27). IOWA - Second-brood continues active. Development more advanced south of U.S. Highway 30 than in northeast quarter of State. (Iowa Ins. Inf., July 29). WISCONSIN - Second-brood flight well underway and egg laying increasing. Treatment of some commercial acreage of sweet corn commenced in southern counties. (Wis. Ins. Sur.). MINNESOTA - Pupation, moth

emergence and egg laying underway in southern half of State. Borers per 100 plants 17 in southwest, 10 in south central, 6 in southeast and 102 in west central. (Minn. Ins. Rpt.). SOUTH DAKOTA - Development in northern region third to fifth instar, with no pupation noted. Infestations averaged 20 percent with average of 44 borers per 100 plants. Sweet corn in northeast did not have noticeably higher count than field corn in same area. (Hintz). NEBRASKA - First-brood infestation survey in Cuming and Hall Counties completed. Cuming County contained 44.1 percent infestation with approximately 37.8 borers per 100 plants. Hall County contained 19.1 percent infestation with approximately 11.1 borers per 100 plants. (Hill, Kindler). KANSAS - Thirty percent of corn plants reported infested in Seward County, southwest. (Burkhardt). ARKANSAS - Larvae of second generation nearing pupation in central and west central areas. (Ark. Ins. Sur., July 27).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ARIZONA - Infestations very heavy in corn in Stanfield area, Pinal County. Hatching of second generation occurring. (Ariz. Coop. Sur.). KANSAS - Examinations of corn in Edwards County, south central, infested in 1962 showed only trace populations this year. Evidently severe winter conditions caused high mortality of larvae. (DePew).

FALL ARMYWORM (*Laphygma frugiperda*) - MARYLAND - First larval infestations of season found in field corn July 27 at Thurmont, Frederick County. Light infestations now occurring in late corn in 2 areas of Frederick County. (U. Md., Ent. Dept.). DELAWARE - Large planting of late corn in Sussex County being rather severely injured; larvae from three-eighths of an inch to nearly full grown. (Bray, MacCreary). ILLINOIS - Reported in late corn in southwest. (Ill. Ins. Rpt.). KANSAS - This species and *Heliothis zea* causing "ragging" of field corn in Finney and Hodgeman Counties, southwest; 5-20 percent of plants infested. Twenty-three percent of plants in late-planted corn plot in Riley County infested with *L. frugiperda*. (DePew, Sifuentes; July 26). ALABAMA - Caused heavy damage to millets near Grand Bay and St. Elmo in Mobile County. (Seibels, Moore; July 26). One to four larvae, in conjunction with light infestation of *Heliothis zea*, destroyed 5-acre late cornfield in Mobile County. Localized infestation also noted in Elmore County. (Deakle, Morris).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Apparently absent in Hudson Valley as of July 22, but expected to appear by latter part of month; treatments of silks recommended. (N. Y. Wkly. Rpt., July 29). MARYLAND - Infestations in commercial sweet corn generally light in all sections. (U. Md., Ent. Dept.). WISCONSIN - Moths reported from Fond du Lac and Rock Counties week ending July 26. (Wis. Ins. Sur.). ALABAMA - Numerous moths noted laying eggs in soybean fields in Baldwin County. (Fairley, Smallwood). ARKANSAS - Larvae averaged 12-15 per 100 sorghum heads in central and southwest areas; 16 larvae per 100 sweeps in alfalfa in Conway County. (Ark. Ins. Sur., July 27). OKLAHOMA - Low in alfalfa in southwest and southeast; infestations in grain sorghum 16 per 100 heads in Grady County and to 68 per 100 heads in Kiowa County. (Okla. Coop. Sur., July 27). Light to moderate, scattered populations noted in grain sorghum in Kay, Grant, Garfield and Noble Counties, with highest count 104 larvae per 100 heads. Some terminal feeding observed in late plantings with a report of 30-40 percent of terminals infested locally in Grant County. Light counts reported in south central and southwest counties checked. (Okla. Coop. Sur.). TEXAS - Heavy, local infestations occurring on peanuts in Lee County. (Spivey, July 26).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ARIZONA - Sorghum heavily damaged in Maricopa County; largest populations found in sorghum that followed alfalfa. Some replanting necessary. (Ariz. Coop. Sur.). ALABAMA - Causing some damage to peanuts in Houston County. (Roney).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Light, 10 per 100 heads, on sorghum in Marshall County; 8 per 100 heads in Noble County with some evidence of earlier pupation. (Okla. Coop. Sur.).

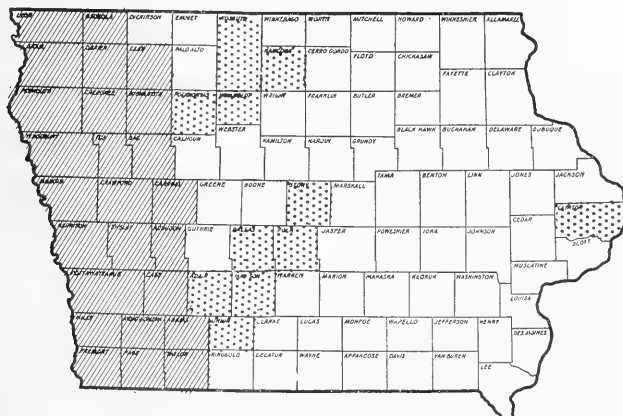
ARMYWORM (*Pseudaletia unipuncta*) - ILLINOIS - Light feeding on grass and corn in grassy cornfields observed in northern area. Most larvae nearly full grown or parasitized. (Ill. Ins. Rpt.).



BLACK CUTWORM (*Agrotis ipsilon*) - OREGON - Economic damage reported on corn in Marion and Washington Counties. (Hanna, July 27).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Populations in Dundy County at very low level; approximately one egg mass per 500 corn plants. Many fields had no egg masses. (Hagen).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - IOWA - Collected on Ankeny, Polk County, farm on July 22. New county records include Hancock, Story, Dallas, Madison, Union and Adams Counties. Map below gives known distribution of species in State. (Iowa Ins. Inf., July 29).

WESTERN CORN ROOTWORM IN IOWA - 1963



 - Present
 - Problem

MISSOURI - High populations observed in fields scattered over extreme northwest; ranged 4-38 per plant in infested fields. (Munson, Thomas, Wood; July 27). SOUTH DAKOTA - Adults observed in McCook and Hanson Counties on corn and alfalfa. High population, 40-50 adults per stalk, observed in Tabor area of Bon Homme County, with counts 25-30 adults in surrounding area. High counts also observed in Charles Mix and Hutchinson Counties. (Kantack, Hintz; July 24). NEBRASKA - Adults continued to emerge and feed on leaves, silks and tassels of corn; populations and damage to corn in panhandle in both treated and untreated fields higher than previous years. (Bergman, July 26). KANSAS - This species and *D. longicornis* causing alarm by damaging silks of corn in Wyandotte County, northeast. (Burkhardt).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - IOWA - Caused severe damage to corn fields in Marshall, Jones and Iowa Counties treated with one of two chlorinated hydrocarbons. Lodging as high as 80 percent, with 5-10 adults per silk in

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW YORK - Conspicuous on tassels and ear tips of Gold Cup sweet corn at Lamontville, Hudson Valley, on July 22. (N. Y. Wkly. Rpt.). MARYLAND - Heaviest in recent years on field corn in all sections. Several fields in Queen Annes and Talbot Counties show heavy infestations on 10-50 percent of plants. (U. Md., Ent. Dept.). DELAWARE - Infestations in field corn in Kent County being markedly reduced by lady beetles (MacCreary). VIRGINIA - Severely infesting several fields of corn in Charles City County. (Tarpley, Settle; July 22). NORTH CAROLINA - Heavily infesting most of corn tassels in 100-acre field in Washington County. Infestations heavy enough to require treatment on field corn in Currituck County. Heavy on corn in Perquimans County. Medium to heavy on milo in lower part of Davidson County. (Whitford, Floyd, Reid, Mulder; July 26). OHIO - Light infestations observed in most northwest area corn fields. (Lyon). ILLINOIS - Light on 2.9 percent of corn plants in west-southwest district. (Ill. Ins. Rpt., July 25). IOWA - Extremely abundant on tassels of most corn. (Iowa Ins. Inf., July 29). WISCONSIN - Populations increased to point where some growers considered treatment. (Wis. Ins. Sur.). MINNESOTA - Infestations ranged 8-56 percent in southern half of State; colonies increased in size. (Minn. Ins. Rpt., July 26). NORTH DAKOTA - Populations on individual corn plants in southeast remain high, 100-2,000 per plant, but lady beetles and lacewings appear to be building up and should help bring numbers down. (N. D. Ins. Sur.). SOUTH DAKOTA - Population generally low, 25-100 per plant. (Hintz). NEBRASKA - Infestations heavier than normal in corn and milo. Light and spotted damage present on corn tassels and milo heads. (Bergman, July 26). OKLAHOMA - Light and spotty on grain sorghum in southwest and light in Major County, northwest. Heavy on Johnson grass in Choctaw County, southeast. (Okla. Coop. Sur., July 27). Light to locally heavy on late grain sorghum in north central area. (Okla. Coop. Sur.). COLORADO - Percent of sorghum and milo plants infested in Prowers, Bent, Otero, Crowley, Pueblo and Yuma Counties varies light to heavy. (Schweissing, LaQuey). WYOMING - Heavy on corn in Goshen County; approximately 85 percent of fields surveyed infested. Light damage noted to tassels. (Marks). NEVADA - Light on wheat in Diamond Valley, Eureka County. (Earnist). Varied 10-25 per sweep on barley in Preston-Lund, White Pine County, and 3-150 per sweep in Lamoille, Elko County. (Cooney). Medium on barley in Smith Valley, Lyon County. (Martinelli, July 26). IDAHO - Abundant on watergrass in some sweet corn seed fields and occasionally found on corn plants in southwestern area. (Manis).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - NEVADA - Varied 75-200 per sweep on grain in Preston-Lund, White Pine County. (Cooney). Infestations in several grain fields in Lovelock, Pershing County, greatly reduced by predators. (Lauderdale).

RICE DELPHACID (*Sogata orizicola*) - FLORIDA - Infestations found at Belle Glade, Palm Beach County, on rice; 5 collections on July 19, one on July 18 and one on July 26. (Young).

RICE STINK BUG (*Oebalus pugnax pugnax*) - ARKANSAS - Counts per 100 sweeps 23 adults and 23 nymphs in 18 rice fields in Lonoke County week ending July 27; counts in same fields week ending August 3 were 20 adults and 24 nymphs per 100 sweeps. (Ark. Ins. Sur.).

CHINCH BUG (*Blissus leucopterus*) - ALABAMA - Caused serious damage to late corn on farm in Mobile County. (Deakle). OHIO - Infesting field corn near Washington Court House, Fayette County, July 19, and migrating to a meadow in Wyandot County on July 23. (Grover, Holdsworth, Courtright).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Populations heavy, 9th and 10th leaves infested, on early corn in Otero, Crowley and Pueblo Counties. On late-planted corn, populations light with mites on 2nd to 6th leaves. In Prowers and Bent Counties, populations on corn light and scattered on lower leaves. In Larimer and Weld Counties, numbers quite variable, with some fields having high economic populations and others with low to moderate numbers. In Delta County, mites on 3rd and 4th leaves, with light injury to foliage. (Schweissing, Jenkins, Bulla). Populations increasing week of July 19-26 on corn in Bent, Otero, Weld, Adams and Larimer Counties. Heavy infestations present on mid-leaves and in some

fields mites found on top leaves. Infestations month early and controls underway. (Schweissing, Jenkins). UTAH - Infestations on corn building up in several Weber, Davis and Utah County fields. (Knowlton, July 25). IDAHO - Building up in some sweet corn seed fields in southwestern area. Corn just commencing to tassel. Also found generally on alfalfa and clovers in south central and southwestern areas, with population counts generally moderate. (Manis, Scott, Portman).

SPIDER MITES - NEBRASKA - Increasing rapidly in corn in North Platte Valley; controls underway in some areas. (Hagen). NEW MEXICO - Heavy on corn being cut for ensilage in Dexter-Hagerman area, Chaves County. Most lower leaves in several fields completely dead from feeding. (N. M. Coop. Rpt., July 26). NEVADA - Appeared on lower leaves of corn in Panaca and Pahranagat Valleys, Lincoln County. (Bechtel, July 26).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - SOUTH DAKOTA - Ranged 1-5 per 10 sweeps in Sanborn, Hanson and McCook Counties July 19-24, and 2-30 per 50 sweeps in Beadle, Hand and Sanborn Counties July 25-August 1. (Hintz). KANSAS - Counts in alfalfa in north central and northwest area range 10-25 per sweep. (Peters). Counts 25-50 per sweep in Ellis County alfalfa. (Harvey). OKLAHOMA - Fewer than 50 per 10 sweeps in southwest, northwest and southeast week ending July 27; ranged 25-50 per 10 sweeps in north central area alfalfa week ending August 3. (Okla. Coop. Sur.). COLORADO - Counts 1,000-2,000 per 100 sweeps on alfalfa in Bent County and 200-600 per 100 sweeps in Otero County; none found in Weld, Adams, Boulder or Larimer Counties. (Schweissing, Jenkins; July 26). Counts 20-2,000 per 100 sweeps in southeast Prowers, Bent, Otero, Crowley and Pueblo Counties. Populations expected to increase under present prevailing weather conditions. In Mesa County, numbers 20-50 per 100 sweeps; none found in Delta County. (Schweissing, Bulla). NEW MEXICO - Moderate to heavy in several fields near Clovis, Eddy County. Honeydew a problem in most of these fields. (N. M. Coop. Rpt.). ARIZONA - Light to medium in most alfalfa in Graham and Maricopa Counties. (Ariz. Coop. Sur.). NEVADA - None found in Elko, Esmeralda, Humboldt, Pershing or White Pine County alfalfa. (Coop. Rpt.). Averaged 1-2 per sweep in most maturing alfalfa fields in Panaca and only occasional specimens found in Pahranagat Valley, Lincoln County. (Bechtel, July 26).

PEA APHID (*Acyrtosiphon pisum*) - MARYLAND - Increasing on alfalfa in all sections, with some fields in Baltimore and Frederick Counties showing from 20 to over 200 per sweep. (U. Md., Ent. Dept.). ILLINOIS - Relatively light, 1-40 per sweep, in clover and alfalfa in northern area. (Ill. Ins. Rpt.). WISCONSIN - Although populations generally low, increase noted in most alfalfa. (Wis. Ins. Sur., July 26). COLORADO - Increasing on alfalfa in Larimer, Boulder, Weld and Adams Counties, with counts 500-1,000 per 100 sweeps. (Jenkins, July 26). Low numbers present on alfalfa in southeast; 40-150 per 100 sweeps. In Saguaque, Rio Grande, Alamosa and Costilla Counties, populations low to moderate, 300-1,000 per 100 sweeps. In Mesa, Montrose and Delta Counties, populations light to moderate, 500-2,000 per 100 sweeps. (Schweissing, Jenkins, Bulla). WYOMING - Counts 400-600 per 100 sweeps in Goshen County alfalfa; second cutting about 90 percent complete. Counts previous week in Natrona, Johnson and Sheridan Counties averaged 180 per 100 sweeps in alfalfa. (Marks). UTAH - Populations became high in number of second-crop alfalfa fields in east Millard County this summer. (Knowlton, Rickenbach). Moderate to severe on second-crop alfalfa in Sanpete County. (Knowlton, Funk). NEW MEXICO - Occasional heavy infestations still being found in Eddy and Chaves County alfalfa. (N. M. Coop. Rpt.). NEVADA - Many alfalfa hay fields in Fish Lake Valley, Esmeralda County, heavily damaged and plants stunted and deformed. In areas of some fields, counts 150-300 per sweep, but in remaining areas of fields, predators reduced populations below 25-75 per sweep. (Bechtel, Martinelli). Increasing on alfalfa in Lovelock, Pershing County. (Lauderdale). Varied 5-40 per sweep in alfalfa hay fields in Preston-Lund areas and 50-200 per sweep in Baker, White Pine County. Averaged 12 per sweep in Lamaille, Elko County, and varied 1-15 per sweep in Douglas County. (Cooney). Only occasional specimens found in Moapa Valley, Clark County, hay fields. (Bechtel). Light, heaviest counts averaged 2-5 per sweep, in Panaca and Pahranagat Valley, Lincoln County, alfalfa hay fields. (Bechtel, July 26).

IDAHO - Building up rapidly on alfalfa in Lewis and Nez Perce Counties. In Nez Perce County, population counts extremely high, particularly in Lewiston area, with alfalfa stands suffering retardation of growth. (Kambitsch, Dailey; July 26). Populations extremely low in alfalfa throughout southern area; marked contrast to populations encountered during past several years. (Manis).

AN APHID (probably Anuraphis bakeri) - IDAHO - Abundant on approximately 3,000 acres of clover in Nezperce area of Lewis County. Actual estimates of loss not made. (Dailey, July 26).

LYGUS BUGS (Lygus spp.) - COLORADO - High, 300-500 per 100 sweeps, on seed alfalfa in Mesa County; controls taken. (Bulla). WYOMING - Adults averaged 82 and nymphs 44 per 100 sweeps in Goshen County alfalfa; counts previous week in Natrona, Johnson and Sheridan Counties 42 adults and 22 nymphs per 100 sweeps. (Marks). UTAH - Numerous to very high populations in east Millard County alfalfa seed fields. (Knowlton, Rickenbach). NEW MEXICO - Abundant in Eddy and Chaves County alfalfa; averaged as high as 2-5 per sweep in some fields. Also heavy in Curry and Roosevelt County alfalfa checked. (N. M. Coop. Rpt.). ARIZONA - Adults and nymphs still numerous in all alfalfa-growing areas. Counts ranged 30-300 per 100 sweeps. Pest remains dangerous to alfalfa seed crop. (Ariz. Coop. Sur.). NEVADA - Averaged 9 per sweep in alfalfa seed field and 10-35 per sweep in alfalfa hay fields in Fish Lake Valley, Esmeralda County. (Bechtel, Martinelli). Averaged 5 per sweep in hay fields in Preston-Lund and Baker, White Pine County, and Lamoille, Elko County. Varied 20-40 per sweep in Douglas County. (Cooney). Generally light on alfalfa seed in Orovada, Humboldt County, and adults averaged 3-4 per sweep in Haulapi Valley, Washoe County, seed fields. (Lauderdale). Varied 3-27 per sweep in alfalfa hay fields in Moapa Valley, Clark County. (Bechtel). Heavy, averaged 40-60 per sweep, in most maturing alfalfa hay fields in Panaca and Pahranagat Valley, Lincoln County. (Bechtel, July 26). MARYLAND - Adults of L. lineolaris 1-2 per sweep in alfalfa and clover in Frederick, Howard and Queen Annes Counties. (U. Md., Ent. Dept.; July 26).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - OHIO - Moderate populations observed in most northwest area alfalfa, 75-100 nymphs and adults per 50 sweeps in Wyandot County, north central area. Increasing in several areas. (Lyon). ILLINOIS - Adults vary 20-140 and nymphs 20-120 per 100 sweeps in northern area alfalfa. (Ill. Ins. Rpt.). NORTH DAKOTA - Averaged 3 per sweep on alfalfa in Linton area, Emmons County. (N. D. Ins. Sur.). WYOMING - Adults averaged 50 per 100 sweeps in Goshen County alfalfa; adults 42 per 100 sweeps in Johnson and Sheridan Counties previous week. (Marks).

SUPERB PLANT BUG (Adelphocoris superbus) - UTAH - Moderately numerous in some Sevier and Juab County alfalfa seed fields. (Knowlton, July 25).

POTATO LEAFHOPPER (Empoasca fabae) - VERMONT - Causing severe yellowing and stunting of alfalfa and other legume forage in all areas. Hot, dry weather has intensified injury and 2-5 adults per sweep found in Addison County July 24. (MacCollom, July 29). MARYLAND - Adults and nymphs continue to cause conspicuous injury to untreated alfalfa in all sections. Infestations generally higher than a year ago. (U. Md., Ent. Dept.). OHIO - Averaged 1.5 per sweep on second-cutting alfalfa at Wooster, Wayne County, on July 23; averaged 2 per sweep on alfalfa at Apple Creek, Wayne County, on July 31. (Williams, Miller). ILLINOIS - Adults 300-1,000, nymphs 180-1,800 per 100 sweeps in northern area alfalfa. (Ins. Rpt.). WISCONSIN - Counts average about 1 adult and 1 nymph per sweep in most fields of alfalfa in Iowa, Lafayette and Grant Counties. Populations vary in fields in south central area, with numbers as high as 60 per sweep in yellowed areas of individual fields. (Wis. Ins. Sur.). SOUTH DAKOTA - Present on alfalfa throughout north central and northeastern regions of State; ranged 1-15 per 50 sweeps. (Hintz).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Counts in Burleson County alfalfa averaged 50 adults and 25 nymphs per 5 sweeps. (Teats, July 26). NEW MEXICO - Adults abundant in Eddy and Chaves County alfalfa; 8-36

per 100 sweeps in fields checked. (N. M. Coop. Rpt.). ARIZONA - Adults still numerous in alfalfa in Yuma, Maricopa, Pinal and Graham Counties. Counts averaged 60-150 per 100 sweeps in most areas. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - MARYLAND - Larvae building up on alfalfa in several central area fields; counts 2-10 per sweep common. (U. Md., Ent. Dept.). NEBRASKA - Second-growth alfalfa destroyed in Sioux County field; adults averaged 4 per crown. Adjacent fields had areas 30-40 feet around hay stacks severely damaged. (Hagen, July 26). KANSAS - Surveys in northwest negative. (Peters). COLORADO - Larvae increased in Arkansas Valley and in northern area; counts 50-1,000 per 100 sweeps in some fields. (Schweissing, Jenkins; July 26). WYOMING - Larvae causing considerable damage to second-cutting alfalfa in Natrona, Johnson and Sheridan Counties; counts 8-12 per square yard. (Marks, July 26). UTAH - Continues to hold back alfalfa growth in untreated fields in Sanpete County. (Knowlton, Funk).

CLOVER SEED WEEVIL (*Miccotrogus picrostris*) - IDAHO - Adults noted moving into blossoms in clover seed fields throughout much of south central and southwestern areas. (Portman).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Numerous calls received from peanut growers in Conecuh County each week seeking controls for adults of this species feeding on peanuts. (Huggins).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ARKANSAS - Adults and eggs present on soybeans in Mississippi County; infestations light. (Ark. Ins. Sur., July 27). VIRGINIA - Infestations in soybeans ranged from none in most fields checked in several counties to medium in some fields in Middlesex County. (Tarpley). Controls applied recently in some areas of Gloucester County. (Birdsall).

LEAF BEETLES (*Colaspis* spp.) - MARYLAND - Adults caused moderate injury to soybeans in Queen Annes County. (U. Md., Ent. Dept.). ALABAMA - Continue to feed on soybeans in Baldwin County. Present but apparently not damaging to legumes and other plants in pastures and roadsides in Lee and Tallapoosa Counties. (Fairley, Smallwood, Barwood, Davis, Yates).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Adults causing conspicuous foliage injury to soybeans in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). VIRGINIA - Adults most serious pest of soybeans at present. Infestations ranged from very light in Brunswick, Southampton, Isle of Wight, Nansemond, Gloucester, Essex, Middlesex and King William Counties to light in King and Queen, Isle of Wight, Nansemond and Norfolk (city of Chesapeake) Counties. Adults encountered in practically every field examined. (Tarpley). ARKANSAS - Ranged 11-30 in 30 row feet in 5 fields of soybeans checked in Lonoke County compared with range of 6-40 previous week. (Ark. Ins. Sur.). NEBRASKA - Adults caused minor damage to soybeans in east central area. (Bergman, July 26).

GARDEN WEBWORM (*Loxostege similalis*) - KANSAS - Abundant in alfalfa and soybeans and causing damage in Marion County, central area. Controls taken. Also abundant and controls necessary on alfalfa and sorghum in Riley County, northeast. (Burkhardt). MISSOURI - Heavy moth flights still evident in extreme northern areas. Counts of small larvae in these areas ranged 0-8 per sweep on alfalfa. (Munson, Thomas, Wood; July 27). ARKANSAS - Averaged 24 per 100 sweeps in Conway County alfalfa. (Ark. Ins. Sur., July 27). OKLAHOMA - Scattered, locally heavy infestations noted in various locations throughout State. Heavy on alfalfa in Covington area of Garfield County; 90-95 percent of terminals infested. Locally heavy in Washita, Kiowa and Marshall Counties. Considerable defoliation occurred in soybean plantings in Wagoner County. (Okla. Coop. Sur.).

ALFALFA WEBWORM (*Loxostege commixtalis*) - KANSAS - Larvae ranged 10-50 per 100 sweeps in alfalfa in north central and northwest areas. Very little webbing noted. However, moths abundant in most alfalfa; higher larval populations expected. (Peters). Reported in central area fields; alfalfa 50 percent or more webbed in some Ellis County fields. (Harvey).

ALFALFA CATERPILLAR (Colias eurytheme) - MARYLAND - Larvae light in Frederick and Howard County alfalfa. (U. Md., Ent. Dept.). NORTH DAKOTA - Adults and larvae observed on alfalfa in La Moure area; 3-10 larvae per 10 sweeps. (N. D. Ins. Sur.). COLORADO - Found in all alfalfa checked in Prowers, Bent, Otero, Crowley and Pueblo Counties at light to moderate levels; 0-50 per 100 sweeps. (Schweissing). WYOMING - Larvae 14 per 100 sweeps in Goshen County alfalfa. (Marks). NEW MEXICO - Adults extremely numerous in alfalfa in Lakewood-Artesia area, Eddy County. (N. M. Coop. Rpt.). ARIZONA - Large flights of adults still being found in Yuma, Maricopa and Graham Counties. Larval counts in alfalfa averaged 20-40 per 100 sweeps in Graham County and 35-40 in Maricopa County. (Ariz. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Larvae of all sizes ranged 1-3 per sweep on alfalfa in Baltimore County; light to moderate on soybeans in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). ILLINOIS - Varies 4-10 per 100 sweeps in clover and alfalfa in northern area. (Ill. Ins. Rpt.). ARKANSAS - Ranged 4-11 per 30 row feet in soybeans compared with 1-10 previous week. (Ark. Ins. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - GEORGIA - Light to heavy infestations on peanuts in Miller, Calhoun and Randolph Counties. (Jordan, July 25). ALABAMA - Few larvae noted in Mobile County millet planting. (Deakle). TEXAS - Averaged 40 larvae per 5 sweeps in Burleson County alfalfa. (Teats, July 26).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Locally heavy infestation noted on peanuts in Marshall County; 30 per 100 terminals. (Okla. Coop. Sur.).

ALFALFA LOOPER (Autographa californica) - NEW MEXICO - Larvae 2-5 per 100 sweeps in alfalfa near Artesia, Eddy County. (N. M. Coop. Rpt.).

AN ALFALFA SEED CHALCID (Bruchophagus roddi) - OKLAHOMA - Considerable damage to alfalfa seed noted in Major County. Lighter damage also observed in Noble County. (Okla. Coop. Sur.). UTAH - Adult populations extremely low to July 25 in northern area alfalfa. (Knowlton). ARIZONA - Adults being found in some seed alfalfa fields in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

THRIPS (undetermined) - MARYLAND - Continue to cause noticeable foliage injury to corn and soybeans in all sections. (U. Md., Ent. Dept.). SOUTH DAKOTA - Counts about 500-600 per 10 sweeps in Miner County alfalfa. (Hintz). COLORADO - Causing considerable damage to oats in Garfield County. (Dickens).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - NEVADA - Caused heavy damage to Artemisia tridentata in Lamaille area, Elko County. (Cooney).

RANGE CATERPILLAR (Hemileuca oliveae) - NEW MEXICO - Larvae damaging rangeland grasses in Farley-Gladstone area, Colfax and Union Counties. (N. M. Coop. Rpt.).

A BURROWING WEBWORM (Acrolophus sp.) - NORTH CAROLINA - Infesting fescue lawn in Stanly County. (Koontz, Robertson; July 26).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OREGON - Noted feeding in pasture and hay fields in Douglas County. (Vertrees, July 27).

SOD WEBWORMS - FLORIDA - Pachyzancla phaeopteralis heavily infested grass at Miami, Dade County, July 15. (Roberson). NEBRASKA - Adult and larval activity of Crambus sp. reported present and causing damage to lawns in Lancaster County. (Bergman, July 26).

SAY STINK BUG (Chlorochroa sayi) - NEVADA - Medium to heavy on rangeland in Orovada area, Humboldt County. (Lauderdale).

A BERMUDA GRASS MITE (Aceria neocynodonis) - NEW MEXICO - Heavy on Bermuda grass lawns in Carlsbad area, Eddy County. Moderately heavy and damaging lawns at Hobbs, Lea County. (N. M. Coop Rpt.). ARIZONA - Causing severe damage to lawns in Maricopa and Pima Counties. (Ariz. Coop. Sur., July 26).

RHODES GRASS SCALE (*Antonina graminis*) - FLORIDA - Infesting Bermuda grass at Winter Haven, Polk County, July 8. (Simanton).

A WHITE GRUB (*Phyllophaga* sp., probably *hirticula*) - VIRGINIA - Heavily infesting a bluegrass pasture on dairy farm in Page County. (Tarpley, et al., July 22).

CHINCH BUGS - NEW YORK - Activity increasing on turf in Nassau County. (N. Y. Wkly. Rpt., July 29). ALABAMA - Caused serious damage to numerous St. Augustine grass lawns in Conecuh County. (Huggins). TEXAS - Light to moderate populations causing light damage to few St. Augustine grass lawns in College Station. (Tex. Coop. Rpt.).

BANKS GRASS MITE (*Oligonychus pratensis*) - IDAHO - Infestations general in Gooding, Camas, Lincoln and Blaine Counties on native grasses and stands of brome, intermediate wheatgrass and crested wheatgrass. (Portman).

Weather of the week ending August 5 (continued from page 900)

greatest deviation, while the Pacific Northwest completed its seventh successive week of mostly below normal temperatures. A consistently cool spot, Bondurant, Wyoming, reported a 23° for the coolest, while 111° was the warmest, being reported from several spots of the Southwest deserts. Maxima exceeded 100° into Wyoming and South Dakota. St. Louis, Missouri, recorded 100° or better on 2 days; 102° on the 3d.

Precipitation was quite sparse or non-existent from western Montana through Oregon, and south over California and much of Nevada. No measurable precipitation was reported from Oregon, the first such week this year. Much of Texas, including the Panhandle, went without measurable rainfall. Fairly extensive showers deposited significant rain over the mountains of Arizona, Colorado, southern Utah, and western New Mexico. Flagstaff, Arizona, received one of the larger totals with 2.11 inches. Grants, New Mexico, had rainfall amounting to 1.51 inches by noon on the 3d. From the Great Plains eastward, precipitation was quite general, but totals were variable. The stations at Wichita, Kansas, and Springfield, Illinois, measured no rainfall, as did most of Texas. However, a thundershower dropped 2 inches in 45 minutes on Athens, Georgia. Local totals to 8 inches were reported from North Carolina and western North Dakota. On the opening day, local flooding was one result of heavy rain showers amounting to 3.38 inches at Buffalo, New York.

Severe storms were quite frequent during the period and hail caused crop damage in Idaho, most of the Plains States, Great Lakes States, North Carolina, and other scattered areas. Stones to golf-ball size hit Waco, Nebraska, during a bad storm on the 30th. On the 31st, a tornado just north of Cadillac, Michigan, damaged roofs and trees. Twisters also struck near Chicago, Illinois, on the 2d. A violent nighttime storm on the 3d at Glassport, Pennsylvania, with 90 m.p.h. winds, was responsible for 2 deaths, injuries to 70 others, and extensive property damage. Golf-ball size hail and 85 m.p.h. winds had hit Cleveland, Ohio, that same day. (Summary supplied by U.S. Weather Bureau).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - NEW YORK - Second-brood adults emerging steadily from cages in Niagara County since July 24. (N.Y. Wkly. Rpt.). PENNSYLVANIA - Heavy in partially sprayed apple orchard in Centre County. (Adams, July 22). MICHIGAN - Emergence continues heavy; 20 specimens taken at blacklight trap in Livingston County July 27 and total of 67 during week ending July 29. Cage in Kent County yielded 11 adults same period. Eggs noted in Berrien County July 26; hatched in East Lansing on August 1. (Newman, Gilmore, Wooley). MISSOURI - Heavily damaged poorly treated block of apples in peach orchard in southeastern area; larvae 75 percent to full grown indicating end of brood. Fresh "stings" on summer apples reported at St. Joseph. (Wkly. Rpt. Fr. Grs., July 31). NEW MEXICO - Heavy on fruit in untreated orchards in Bernalillo and Sandoval Counties; good control when correct timing and proper coverage obtained. (N.M. Coop. Rpt., July 26). OREGON - Second generation emerging in western area week of July 14. (Goeden).

ORCHARD MITES - MAINE - Panonychus ulmi and Tetranychus telarius continue increase on untreated check trees in Monmouth area indicating more trouble. (Boulanger, July 27). NEW YORK - Epitrimeris pyri severe in orchard in Niagara County. P. ulmi very heavy in Monroe County. (N.Y. Wkly. Rpt., July 29). CONNECTICUT - P. ulmi increasing at Litchfield, Niantic and New Haven; T. telarius increasing locally. August usually important for buildup. (Savos, July 30). DELAWARE - P. ulmi increased rapidly statewide on apples. Two-spotted mites numerous on peach leaves in some areas of Sussex County. (MacCreary). OHIO - Untreated apple tree plots averaged 160 crawlers and adults of P. ulmi per leaf at Wooster, Wayne County. (Frazier). MICHIGAN - Various species heavy on apples, plums and in some pear orchards in southwestern area; moderate in northwest. Some control difficulty noted. (Wooley, Howitt, Carpenter, Tatter, Mullett). WISCONSIN - Panonychus ulmi reached damaging levels in Door County where earlier controls inadequate; Tetranychus telarius increased in same county. (Wis. Ins. Sur.). MISSOURI - All areas of State report mites present but usually under control. Heavy in west central area with some webbing of leaves and fruit of apples noted. Attacked peach foliage in southeast area; some graying of leaves noted. Mostly T. telarius in southeastern area with some P. ulmi. Some bronzing of foliage noted in Kansas City area from previous mite infestations. (Wkly. Rpt. Fr. Grs., July 31). CALIFORNIA - Eriophyes pyri heavy on pear trees in Scott Bar, Siskiyou County. (Cal. Coop. Rpt.).

APPLE MAGGOT (*Rhagoletis pomonella*) - MAINE - Emergence continues heavy in experimental cages in Monmouth area; moderate to heavy at Orono. (Boulanger, July 27). NEW YORK - Emergence evidently reached peak July 25 in Niagara County; apparently peaked July 23-24 in Monroe County. (N.Y. Wkly. Rpt.). CONNECTICUT - Large numbers emerging; maximum protection urged on apples. (Savos, Aug. 3). MINNESOTA - Adult activity very high in Minnetonka area; ranged 13-15 per trap. (Minn. Ins. Rpt.). WISCONSIN - First entry observed at Gays Mills July 25. Populations considerably lower in Door, Rock and Crawford Counties where dry conditions restrain emergence. Numbers fairly high in Madison area where more rainfall occurred. (Wis. Ins. Sur.).

PEAR-SLUG (*Caliroa cerasi*) - CALIFORNIA - Larvae heavy on cherry trees in Weaver-ville, Trinity County, and heavy on plums in Oceanside, San Diego County. (July 26). Heavy on pear trees in Salinas, Monterey County. (Cal. Coop. Rpt.). OREGON - Second-generation adults appeared on cherries week of July 14 in Polk County. (Goeden). WISCONSIN - Second-generation larvae feeding on cherry leaves in Dane County. (Wis. Ins. Sur., July 26).

SHOT-HOLE BORER (*Scolytus rugulosus*) - CALIFORNIA - Locally heavy on apple trees in Tehachapi, Kern County. (Cal. Coop. Rpt., July 26).

A SCARAB (*Cotinis texana*) - ARIZONA - Damage heavy to home planting of peaches and other soft fruits in Nogales, Santa Cruz County. (Ariz. Coop. Sur.).

A STINK BUG (Euschistus conspersus) - CALIFORNIA - Adults heavy on peach in Sacramento, Sacramento County. (Cal. Coop. Rpt., July 26).

WHITE APPLE LEAFHOPPER (Typhlocyba pomaria) - CONNECTICUT - Heavy on untreated trees at New Haven. (Savos, July 30).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Difficult to control on Red Delicious apple trees in Lee County; caused serious damage to fruit and trees. (Bagby, July 26).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - TEXAS - Very heavy on peach trees in Montgomery County. (McCoy, July 26).

A CHERRY LEAF MINER - MICHIGAN - Larvae of undetermined species generally widespread and caused injury in 3 Van Buren County sour cherry orchards. (Wooley, Carpenter, July 26).

FALL WEBWORM (Hyphantria cunea) - GEORGIA - Ranged light to heavy on pecans, mostly light to moderate. (Johnson). PENNSYLVANIA - Increasing on untreated apples in Snyder County; heavier than for several years. (Gesell, July 30). CALIFORNIA - Heavy locally on walnut trees in Yreka, Siskiyou County. (Cal. Coop. Rpt.).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Caused considerable nut drop to isolated pecans in Lee County; early instars involved. (Bagby).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Heavy on walnut trees in Arroya Grande; San Luis Obispo County; becoming more common each year. (Cal. Coop. Rpt.).

PECAN SPITTLEBUG (Clastoptera achatina) - ALABAMA - Serious in pecan orchard in Mobile County; controls necessary. (Deakle).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Second generation appearing in many areas of Maricopa County. (Ariz. Coop. Sur., July 27).

GRAPE BERRY MOTH (Paralobesia viteana) - MISSOURI - Next brood expected about August 7; inspections urged, controls may be necessary. (Wkly. Rpt. Fr. Grs., July 31).

GRAPE LEAF FOLDER (Desmia funeralis) - FLORIDA - Severe on Vitis sp. at Apopka, Orange County. (Musgrove, July 22).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Generally heavy infestation in grape vineyards in Tuolumne area, Tuolumne County, and medium in Plymouth, Amador County. (Cal. Coop. Rpt., July 26).

A DARKLING BEETLE (Blapstinus sp.) - CALIFORNIA - Adults heavy in soil and on foliage of grape planting in Escondido, San Diego County. (Cal Coop. Rpt.).

BLUEBERRY MAGGOT (Rhagoletis pomonella) - MAINE - Emergence completed week of July 22 in Jonesboro area. (Boulanger).

A CHALCID (Hemadas nubilipennis) - MAINE - Occasionally found in most blueberry fields in Hancock and Washington Counties; injury negligible. (Boulanger, July 27).

PUTNAM SCALE (Aspidiotus ancylus) - CONNECTICUT - Problem on blueberries in Wethersfield. (Savos, Aug. 1).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MICHIGAN - Moderate to heavy in southwestern area; heavy on several cranberry plantings. (Carpenter, July 26).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Collected for first time in State; female recovered from McPhail trap at Nogales, Santa Cruz County, July 9. Conditions surrounding recovery indicate that this is not established infestation; trap 65 miles from nearest citrus-producing area. (Ariz. Coop. Sur.).

FLORIDA RED SCALE (Chrysomphalus aonidum) - FLORIDA - Moderate to severe on lemon at Holly Hill, Volusia County. (Pott, July 23).

PURPLE SCALE (Lepidosaphes beckii) - TEXAS - Scattered, heavy infestations on citrus trees in and around Brownsville; parasitism is apparently very light. (Texas Coop. Rpt., Day, July 26).

A WEEVIL (Brachyrhinus cribricollis) - CALIFORNIA - Adults heavy and damaging young citrus trees in Bardsdale, Ventura County. (Cal. Coop. Rpt., July 26).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Damaged terminal growth of citrus locally in Yuma County; controls not effective. (Ariz. Coop. Sur.).

TRUCK CROP INSECTS

POTATO LEAFHOPPER (Empoasca fabae) - VERMONT - Prevalent on beans and potatoes. (MacCollom). RHODE ISLAND - This species especially, and other leafhoppers, building up on potatoes in Kingston, Washington County. (Kerr). PENNSYLVANIA - Damaging potatoes in Cambria and Mercer Counties. (Udine, Adams, July 24). MARYLAND - Moderate to heavy infestations common on beans and peppers in all sections. (U. Md., Ent. Dept.). MICHIGAN - General buildup underway on untreated potatoes throughout Lower Peninsula. (Guyer). WISCONSIN - Yellowing of snap beans and severe "hopperburn" to potatoes noted in many home gardens in southern part of State; potato stalks killed in few instances. (Wis. Ins. Sur., July 26).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Few adults on potatoes in Goshen County; averaged less than 1 per 200 sweeps. Most fields had 1-2 control applications. (Marks).

POTATO APHID (Macrosiphum euphorbiae) - MARYLAND - Heavy on 25 acres of potatoes at Nassawange, Worcester County. (U. Md., Ent. Dept., July 26). IDAHO - Higher than average numbers present in seed potato fields in Caribou and Fremont Counties. (Bishop).

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Colonies increasing rapidly on peppers in East Troy area. (Wis. Ins. Sur.)

Potato Aphids in Maine - Although still small, number of aphids continued to increase rapidly on untreated potato foliage at Aroostook Farm near Presque Isle, Aroostook County. Numbers on 3 leaves per plant (top, middle and bottom) now average 13.8 of all species compared with 2.7 of previous week. Percent of plants infested, using this method, increased from 59 to 95. BUCKTHORN APHID (Aphis nasturtii) predominates followed by POTATO APHID (Macrosiphum euphorbiae). GREEN PEACH APHID (Myzus persicae) scarce and only trace infestations of FOXGLOVE APHID (Acyrtosiphon solani). Number of aphids killed by parasites and fungus diseases small but increasing. Insect predators of aphids generally scarce. Surveys of potato fields in central and southern Aroostook County August 1-2 indicated aphid populations varied from practically none, in fields where planting furrow applications of systemic insecticides made, to very large numbers in fields where no or limited insecticides used. In infested fields largest numbers of aphids were in early planted fields and smallest numbers in late fields. Relative abundance of the 4 above aphid species and 3 natural agents of control corresponded closely to that of Aroostook Farm. Very small numbers of summer-generation adults noted in 3 fields in central and southern Aroostook County. (Shands et al.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Heavy and causing severe injury to potatoes in Saco; infestations and damage light in Jonesboro. (Boulanger, July 27). KANSAS - Severely damaged potatoes; moving to eggplants on truck farm in Cloud County. (Charlton, Thompson, July 26). IDAHO - New adults appearing in potato fields in Power and Bingham Counties. (Bishop).

TUBER FLEA BEETLE (Epitrix tuberis) - WYOMING - Adults averaged 22 per 100 sweeps in potato fields of Goshen County. (Marks).

POTATO FLEA BEETLE (Epitrix cucumeris) - PENNSYLVANIA - Second generation started July 15; quite heavy (10 per sweep) on potatoes in Erie County. (Adams, July 24). Quite heavy on potatoes where not controlled in Cambria County. (Udine, July 24).

EUROPEAN CORN BORER (Ostrinia nubilalis) - WISCONSIN - Ovipositing on peppers; second brood flight well underway. (Wis. Ins. Sur.).

A LEPIDOPTEROUS LEAF MINER - MICHIGAN - Late instar of undetermined species causing considerable injury in 80-acre field of Aranac potatoes in Monroe County; injury less evident on Datahdin variety. (Clanahan, Laser, Janes).

GARDEN SYMPHYLAN (Scutigereella immaculata) - PENNSYLVANIA - Damaged peppers in Snyder County; 25 percent of roots eastern. Injury appearing on tomato plants in Lackawanna County. (Gesell, July 24).

MEXICAN BEAN BEETLE (Epilachna varivestis) - IDAHO - All stages noted on beans in garden in northwest Boise; infestation within limits of previous infestation. Eradication underway on this property and surrounding properties July 22. (File). MICHIGAN - Heavy in Ottawa County. (Van Klompenberg). OHIO - Caused heavy damage to lima beans in Belmont County; plants 80 percent skeletonized with 4-5 insects per leaf in many areas of garden. Most in adult stage. (Lyon, Polivka, July 23). MARYLAND - Heavy in several large garden plantings of lima beans at Salisbury, Wilcomico County. (July 26). Increasing on snap and lima beans in central and eastern sections; eggs heavy on garden lima beans at Centreville, Queen Annes County. (U. Md., Ent. Dept.). ALABAMA - Extremely heavy in home garden in Covington County; heavy infestations of several weeks ago almost disappeared in maturing beans in Mobile County. (Deakle et al.).

PEA APHID (Acyrtosiphum pisum) - IDAHO - Very abundant in pea fields in Lewis County. Approximately 10,000 acres of peas severely infested; damage heavy. (Kambitsch, Dailey, July 26).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Causing considerable to beans in Weld County. (Dickens).

BEEF LEAFHOPPER (Circulifer tenellus) - COLORADO - Numerous on sugar beets and tomatoes in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Schweissing). IDAHO - Abundant and causing considerable damage to tomatoes in home gardens at Hammett. (Warren).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 32 per 100 sweeps in sugar beet and bean fields of Goshen County. (Marks).

A BLISTER BEETLE (Epicauta normalis) - IDAHO - Very abundant and causing extensive damage on margins of sugar beet field at Aberdeen. Associated with relatively heavy infestation of grasshoppers, mostly Melanopus sanguinipes. (Manis, Bishop).

BEEF WEBWORM (Loxostege sticticalis) - UTAH - Moths extremely numerous in blacklight trap at Ogden night of July 19-20. (Knowlton).

CABBAGE LOOPER (Trichoplusia ni) - NEW YORK - Heavy on Long Island; eggs and first and second instars numerous. (N.Y. Wkly. Rpt., July 29). MARYLAND - Adults appearing steadily in blacklight traps at Snow Hill, Worcester County; infestations expected to increase on tomatoes, spinach and cole crops. (U. Md., Ent. Dept.). MICHIGAN - All instars evident on cabbage in South Haven area, Allegan County; first adults of season trapped in eastern area taken in Macomb County. (Guyer, Newman, Snow).

DIAMONDBACK MOTH (Plutella maculipennis) - MICHIGAN - Last instars and pupae evident on cole crops in Allegan County. (Guyer).

CABBAGE APHID (Brevicoryne brassicae) - OREGON - Large numbers appearing on brussels sprouts week of July 22 in Marion County. (Hanna). MICHIGAN - Colonies increasing rapidly in untreated cabbage planting in Allegan County. (Guyer).

STRIPED FLEA BEETLE (Phyllotreta striolata) - OHIO - Caused severe feeding damage to cabbage plants in Belmont County. (Polivka, Lyon, July 23).

CUCUMBER BEETLES - WISCONSIN - Acalymma vittata and Diabrotica undecimpunctata howardi continue heavy feeding on some cucurbit plantings; bacterial wilt appearing in Oconto County. (Wis. Ins. Sur.).

PICKLEWORM (Diaphania nitidalis) - GEORGIA - Late, light infestation on squash in home garden in Spalding County. (Dupree).

SQUASH BUG (Anasa tristis) - NEVADA - Adults and nymphs heavy on squash in Moapa Valley, Clark County. (Bechtel).

ONION THRIPS (Thrips tabaci) - COLORADO - Appears reduced by controls in Montrose, Otero, Prowers, Bent, Crowley, Pueblo, Weld and Larimer Counties. Untreated fields show considerable damage. (Bulla, Schweissing, Jenkins). CALIFORNIA - This species and Frankliniella occidentalis heavy in tomato flowers in Woodland, Yolo County. (Cal. Coop. Rpt., July 26).

TOBACCO THRIPS (Frankliniella fusca) - MICHIGAN - Heavy on untreated onions in Lansing area, Ingham County. (Guyer).

ONION MAGGOT (Hylemya antiqua) - COLORADO - Found for first time this season in diseased onion plants in Montrose County. (Bulla). CALIFORNIA - Larvae and pupae heavy on onion bulbs in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt., July 26).

ASPARAGUS BEETLE (Crioceris asparagi) - MARYLAND - Adults moderate to heavy on asparagus foliage at Fairland, Montgomery County. (U. Md., Ent. Dept.). CALIFORNIA - Adults heavy on asparagus plantings in Roseville area, Placer County. (Cal. Coop. Rpt., July 26).

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) - NORTH DAKOTA - Heavy and feeding on asparagus foliage at Hankinson. (N.D. Ins. Sur.).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - MAINE - Moderate and causing severe damage to head lettuce in Scarborough. (Boulanger, July 27).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Averaged 5 per 10 sweeps in large carrot field in Sussex County. (MacCreary, Evans).

CARROT WEEVIL (Listronotus oregonensis) - MICHIGAN - Adults emerging from infested celery field in Kalamazoo County. (Wells).

A MINT FLEA BEETLE (Longitarsus waterhousei) - OREGON - Adults appearing in Columbia County mint fields; economic damage noted in some fields. (Larson, July 27).

CYCLAMEN MITE (Steneotarsonemus pallidus) - WISCONSIN - Caused considerable damage to strawberries in Bayfield County. (Wis. Ins. Sur., July 26).

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Causing economic damage to many vegetable crops and gardens in Willamette Valley. (Beglan, Crowell, July 27).

TARNISHED PLANT BUG (Lygus lineolaris) - MAINE - Heavy and causing moderate damage to garden crops in North Pownal and Scarborough areas. (Boulanger, July 27).

TOBACCO INSECTS

GREEN PEACH APHID (Myzus persicae) - VIRGINIA - On tobacco in irrigated fields; controls necessary in Pittsylvania County. (Dominick, July 24). MARYLAND - Increase continues on tobacco in Calvert, Charles and St. Marys Counties; many

farmers treated or plan to treat. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - VIRGINIA - Some damage appearing on late tobacco in Pittsylvania County. (Dominick, July 24). MARYLAND - Infestations continue considerably below normal on tobacco in all areas. (U. Md., Ent. Dept.).

HORNWORMS (Protoparce spp.) - MARYLAND - Larvae light on tobacco at Prince Frederick, Calvert County. (U. Md., Ent. Dept.).

A NOCTUID MOTH (Trichoplusia sp.) - NORTH CAROLINA - Caused moderate damage to tobacco field in Pamlico County. (Jones, Mount, July 26).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - MARYLAND - Several adults collected from soil surface near disked tobacco bed near Prince Frederick, Calvert County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Light to moderate on tobacco in southern area. (Johnson). MARYLAND - Numbers reduced somewhat on tobacco in all sections. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Population generally low, but rather high in untreated fields. (Cott. News Ltr., July 30). SOUTH CAROLINA - Migration began July 24 in southern area. Average percent punctured squares 6.5 in treated fields and 28 in untreated fields same date. Controls generally good. (Cott. Ltr., July 29). Increasing rapidly in Florence area in untreated or inadequately treated fields. (Taft et al., July 31). GEORGIA - Square counts made in 24 middle and southern area cotton fields. Percent punctured squares ranged 15-70 (averaged 34). (Johnson). ALABAMA - Much higher numbers noted week ending July 26 in southern and central counties. Infestations expected to increase rapidly in untreated fields. Activity not appreciably increased week ending August 2 except in few isolated fields where second "hatch out" provided 1-5 weevils per bloom in southern counties and large numbers of feeding and egg laying punctures. Controls initiated in many fields where infestation counts high which probably accounts for lower counts this week. (McQueen). TENNESSEE - Increasing in southern counties of western area; few adults found for first time this season. Percent punctured squares averaged 7 compared with 41 at same time in 1962. Infestations rather spotty. No migration noted. (Locke). ARKANSAS - Activity continues to increase. Of 6,194 fields scouted during week ending July 26, 312 needed treatments. Increased activity expected for next two weeks. (Wkly. Cott. Ins. Rpt.). LOUISIANA - Third-generation weevils common in Tallulah area. Infestations climbing rapidly. Controls difficult due to frequent showers past two weeks. (Smith et al.). MISSISSIPPI - Light to medium throughout State; controls applied. (Ouzts). In delta counties, punctured squares found in 19 of 36 fields checked. Percent punctured squares in infested fields ranged 0.25-62.5 percent (averaged 6.75). Third-generation weevils emerging in many fields. Although general migration not likely, local movement expected in more heavily infested fields in area. (Pfrimmer et al.). TEXAS - Statewide, situation remains very favorable with only few locally heavy infestations reported. Light infestations present above Caprock in eastern portions of Floyd and Crosby Counties. Considerable field to field movement noted previous week in southern area. (Tex. Coop. Rpt.). OKLAHOMA - Continues noneconomic throughout State. Counts ranged from 2-18 percent in south central area, 2-17 percent in southwest, 1 percent in Wagoner County and 1-3 percent in Major County. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Populations increasing; cotton attractive. (Cott. Ltr., July 29). GEORGIA - Eggs ranged 3-19 per 100 terminals (average 10) in 24 middle and southern area fields. Larvae ranged 1-21 (average 5) per 100 terminals. (Johnson). ALABAMA - Considerable increase

noted in isolated areas week ending July 26. (McQueen). TENNESSEE - Continue damaging in western area; heavier in those counties south of Jackson. Counts ranged 1-12 larvae or eggs per 100 terminals with average being 6 larvae or eggs. Eggs more prevalent than larvae at present. Some boll injury occurring where larvae are large, and especially if fields beginning to "cut out". (Locke). MISSOURI - Total of 952 fields scouted. Larvae 0-4 per 100 plants in 108 fields and eggs found in 128 fields. (French). ARKANSAS - Activity increased; moth emergence and egg deposition heavy. Larval counts considerably higher in southeast than previous week, but egg counts show slight decline. Activity increased in central and northeast areas, but remained static in upper Arkansas River Valley and southwest. Percentage of fields infested 64.8 compared with 48.3 previous week and 55.5 at same time in 1962. Controls urged. (Wkly. Cott. Ins. Rpt., July 26). Percentage of *H. virescens* in cotton in southwest decreased in some cases. Larvae collected in Lafayette County July 16 were 41 *H. zea* and 19 *H. virescens*. Another group of larvae collected in Lafayette County July 17 were 78 *H. zea* and 3 *H. virescens*. Larvae determined in Lincoln County July 23 were 34 *H. zea* and 8 *H. virescens*. (Ark. Ins. Sur.). LOUISIANA - Infestations general in Tallulah area but only few severe infestations reported. Rigid control measures may be necessary for remainder of season. (Smith et al.). MISSISSIPPI - Light to medium throughout State; controls applied. (Ouzts). Injured squares found in 34 of 36 fields checked in delta counties. Percent injured squares ranged 0.25-5.75 and averaged 1.27 percent. Very few eggs found in terminals. Most egg deposition on square bracts and dried blooms down in plant. Moth flight continuing. Threat expected to continue for remainder of growing season. Larvae collected on research station July 22-26 identified as 62 percent *H. zea* and 38 percent *H. virescens*. (Pfrimmer et al.). TEXAS - Infestations in central and southern area decreasing as cotton nears maturity. In north central and northeast, economic populations continue to cause considerable damage. Light, noneconomic populations fairly general over much of west and panhandle areas. (Tex. Coop. Rpt., July 26). Heavy infestations in Dickens and Culberson Counties (west), with other counties in area reporting light to moderate infestations. (Tex. Coop. Rpt.). OKLAHOMA - Infestation counts ranged 5-12 percent, with highest counts continuing in irrigated fields. Infestations recorded ranged 5-9 percent within south central area, with one count of 21 percent in Marshall County; in southwest, 5-12 percent with counts 8-9 percent in Kiowa County, 7-12 percent in Tillman County, 11-12 percent in Greer County, and 5-11 percent in Caddo County; 4-5 percent in Major County, northwest. Moth flights in Chickasha area at a 20:1 ratio, *H. zea* over *H. virescens*, with about 10 percent of larval infestation in cotton. (Okla. Coop. Sur.).

BOLLWORM (*Heliothis zea*) - ARIZONA - Rapid increase found in Maricopa, Pima and Pinal Counties. No increase reported from Yuma and Graham Counties. During previous week, larvae increased in most cotton-growing areas. Yuma, Maricopa and Pinal Counties reported only very small populations. Surveys in Graham and Cochise Counties showed 4-7 larvae per 100 plants and numerous eggs on terminals. (Ariz. Coop. Sur.). NEW MEXICO - Majority of cotton fields checked in Eddy County had light to heavy infestations. Some control difficulties noted in southern part of county. Many growers treating. Predators sufficiently numerous in southern Dona Ana County cotton to keep larvae at noneconomic level. (N.M. Coop. Rpt., July 26). CALIFORNIA - Evident in some Kern County fields; however, damage continues to be restricted to squares and populations below treatment level. Close checks recommended for rest of season. (Leigh, July 24). Counts generally low in Fresno County. (Ferris, July 23).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Larvae appearing in cotton in Graham, Maricopa and Pinal Counties. Populations too light for accurate counts. (Ariz. Coop. Sur.). CALIFORNIA - Severe outbreaks found in Fresno and Kings Counties; some fairly large areas defoliated. (Leigh, July 24).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Caused significant economic damage in Matagorda and Calhoun Counties. Percent damage very difficult to evaluate because of drought and other insect damage. (Tex. Coop. Rpt.). ARIZONA - Emergence slowed down during week ending July 26 at experiment station at Safford. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - TEXAS - Locally heavy infestations in southern area and light infestations appearing in San Angelo area. (Thomas, July 26). Few fields in Matagorda County up to 75 percent defoliated. Only an occasional larva found; most pupated and emerged. (Tex. Coop. Rpt.).

GARDEN WEBWORM (Loxostege similalis) - TEXAS - Light to heavy in areas of north-west. Severe damage reported in Bailey County. (Tex. Coop. Rpt.). OKLAHOMA - Heavy on cotton in Dewey County, west central area. (Okla. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - ALABAMA - Noted in border of cottonfield in Autauga County; also feeding on several native plants along border of fields. (McQueen).

CUTWORMS - ALABAMA - Feeding on upper leaves, buds and parts of squares of cotton in 5 or more large cotton farms in Elmore County; controls difficult. (Morris, Methaney).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light to moderate infestations on cotton in 24 middle and southern area fields. Those infected by virus checked in all areas. (Johnson). ALABAMA - No general increase noted. Controls necessary locally in Monroe County. (McQueen). ARIZONA - Some damage found in Graham, Cochise, Pima and Pinal Counties; larvae averaged 3-10 per 100 sweeps. (Ariz. Coop. Sur., July 26). CALIFORNIA - Low numbers evident in Kern County fields; not serious at present. (Burton, July 29).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Continued increases found in Yuma, Maricopa, Pinal and Pima County cotton; few fields treated in Yuma County. Counts averaged 15-20 per 100 sweeps previous week in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Building in to Roosevelt County cotton. (N.M. Coop. Rpt.). ARIZONA - Populations remain constant in most cotton-growing areas; however, damage still being found in all areas. During previous week, adults and nymphs increased in Maricopa, Pinal and Yuma Counties. Also, light but potentially dangerous populations reported in Graham, Cochise and Pima Counties. (Ariz. Coop. Sur.). NEVADA - Adults varied 0-6 per 50 sweeps in all but one field in Moapa Valley, Clark County, where adults varied 6-28 per 50 sweeps. No nymphs found. (Bechtel). Built up in fields in Pahrump Valley 2-3 weeks later than normal and still below economic levels, except along borders of some fields. Nymphs beginning to appear. (Slater). CALIFORNIA - Damaging numbers evident in many Kern County fields; close checks and controls urged where necessary. (Leigh, July 24). Appears less severe than during previous weeks. (Black, July 27).

LEAFHOPPERS (Empoasca spp.) - ARIZONA - Slight increase noted in Yuma, Maricopa and Pinal County cotton fields. (Ariz. Coop. Sur.). NEVADA - Light populations present in several fields in Moapa Valley, Clark County. (Bechtel).

A STINK BUG (Euschistus impictiventris) - ARIZONA - Adults found feeding on cotton in all cotton-growing areas; counts ranged from only an occasional adult in Yuma County to 12-15 per 100 sweeps in Cochise County. (Ariz. Coop. Sur., July 26).

BLACK FLEAHOPPERS - ARIZONA - Slight decline noted in most cotton-growing areas. Damage to small squares still noticeable. During previous week, counts averaged 20-50 per 100 sweeps in Yuma and Maricopa Counties and 8-25 per 100 sweeps in Graham, Cochise and Pima Counties. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - ALABAMA - Damaging younger cotton in Madison County; controls applied on isolated farms. (McQueen). TEXAS - Continues to cause light to heavy damage in plains areas where cotton is fruiting heavily. (Tex. Coop. Rpt.). OKLAHOMA - Locally heavy in Marshall County; light in Beckham County. (Okla. Coop. Sur.).

APHIDS - ALABAMA - General and extremely heavy in many Conecuh County fields; controls applied. Considerable numbers also reported from Dallas County, but very light in most areas of State. (McQueen).

SPIDER MITES - SOUTH CAROLINA - Scattered infestation reported in Florence area. Species reported difficult to control in at least one part of State identified as Tetranychus cinnabarinus. (Taft et al., July 31). ALABAMA - Several species increased in Tallapoosa, Madison, Montgomery, Henry and Cherokee Counties, although serious only on isolated farms. Difficult to control in Autauga, Macon and Lee Counties. (McQueen). TENNESSEE - Continue to increase and cause considerable damage where no controls applied in western area. Some infestations severe following controls for boll weevil and bollworms. Further buildup to continue unless control measures taken. (Locke). MISSOURI - Marginal and spot infestations found in 264 of 952 fields scouted. (French). ARKANSAS - Activity increased. (Wkly. Cott. Ins. Rpt., July 26). LOUISIANA - Some light infestations reported in Tallulah area; controls used in some instances. (Cuth et al.). MISSISSIPPI - Light to heavy isolated infestations throughout State. (Ouzts). CALIFORNIA - Excessive defoliation evident in some Kern County fields as a result of Tetranychus atlanticus feeding. Some increase in T. telarius and T. pacificus also noted. (Leigh, July 24). Many of serious spider mite problems involve T. atlanticus which in many cases has been overlooked due to rapid plant growth. (Black, July 27). Some problems encountered next to safflower in Huron area of Fresno County. (Ferris, July 23).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

DOUGLAS-FIR TUSSOCK MOTH (*Hemerocampa pseudotsugata*) - IDAHO - New, localized infestations continue to be found throughout city of Moscow. Moderately severe infestation appeared in forested area approximately 5 miles northeast of Moscow; tops of some trees show severe defoliation. This is first forest infestation observed in area since widespread outbreak in 1944-1946. Some larvae still active; however, pupation almost complete. (Manis, Deters, Pitkins).

PINE TUSSOCK MOTH (*Dasychira plagiata*) - MINNESOTA - Adults active in northern Crow Wing and Pine Counties; few egg masses present. About 10 percent of pupae emerged; high percentage of remaining pupae parasitized. (Minn. Ins. Rpt.). WISCONSIN - First adults observed in northwest area July 12; pupation completed in area week of July 19; oviposition noted July 15 and first hatch occurred July 26. (Wis. Ins. Sur.).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - ALABAMA - Causing considerable damage to 100 acres of 5-year-old loblolly pine plantation in southern Escambia County, where most other plantings slash pine and unaffected. First generation caused serious damage in this planting earlier in spring when infestation was heavier than present generation. (McQueen). OKLAHOMA - First and second-stage larvae of third generation present in Stillwater area, Payne County, with 90-100 percent of tips infested. (Okla. Coop. Sur.).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - IDAHO - Spottedly abundant on ornamental spruce in Idaho Falls. (Kohl, July 26). Over 50 percent of larvae pupated in Lemhi Pass area. Extent of damage appears less severe than that observed in 1962. (Manis).

A NEEDLE MINER ("*Recurvaria*" *piceaella*) - KANSAS - Caused moderate to severe injury to Colorado blue spruce in Ellis and Thomas Counties. (Thompson, Harvey, July 26).

WHITE-PINE WEEVIL (*Pissodes strobi*) - VIRGINIA - Appears to be on increase in Piedmont and northern valley areas. Damage to white pine ranged light to heavy on individual and groups of young pines in Henry, Campbell, Craig and Roanoke Counties; moderate damage evident over much of Abingdon district. (For. Pest Surv. Rpt., June Sum.). MICHIGAN - Larvae severely damaged Mugho pine in a Chippewa County nursery; larvae and pupae present, but no adults have emerged. Adults emerging in Ottawa County. (Pangborn, Carlson).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - ALABAMA - Killing group of 15 pines previously injured by fire in Lee County. (McQueen, July 26).

COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) - IDAHO - Infestation general on spruce in Idaho Falls; now emerging from galls. (Kohl, July 26). PENNSYLVANIA - Medium to heavy on 3 acres of Colorado blue spruce in Monroe County. (Andreychik, July 18).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - FLORIDA - Severe on slash pine (*Pinus elliottii*) at Perry, Taylor County. Most scales parasitized by an unspecified wasp. (Beers, July 15). KANSAS - Ranged 10-12 per needle on Colorado blue spruce in Ellis County. (Thompson, July 26). WYOMING - Becoming numerous on pines throughout State. (Robb, July 26).

LARCH SAWFLY (*Pristiphora erichsonii*) - WISCONSIN - Second-stage larvae observed at one location in Price County. Stand in Washburn County showed heavy defoliation; other injury generally light and scattered. (Wis. Ins. Sur., July 26). MINNESOTA - Although middle and late stage larvae still feeding, most have spun up. (Minn. Ins. Rpt.).

SPRUCE SPIDER MITE (*Oligonychus ununguis*) - KANSAS - Moderate to severe on most spruce trees in northeast Johnson County. (Thompson, July 26).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - ARIZONA - Numerous on elms in Apache County; some trees in St. Johns almost defoliated, week ending July 27. Adults and larvae damaging trees in Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Light to moderately heavy on Chinese elms in Albuquerque, Bernalillo County. (N. M. Coop. Rpt., July 26). TEXAS - Many elms in Garza County almost completely defoliated. (Conner). OKLAHOMA - Defoliation continues, with new generation active in most areas. (Okla. Coop. Sur.). KANSAS - Light (1 per 25 leaves) on Siberian elm in Chase County. This is a new county record. (Guldner). ALABAMA - Continues to cause heavy damage to winged elms in Lee County. Noted for first time on Augustine ascending elm in Auburn area this year. These ornamentals, similar to American elm heavily attacked each year. No reports of infestations on native American elms in these areas. (McQueen, July 26). NEW YORK - Pupation at peak in Ithaca; no adult emergence to July 29; some larvae still feeding. Populations lower than previous 3-4 years. (N. Y. Wkly. Rpt.). RHODE ISLAND - Pupating in Peace Dale area, Washington County; defoliation reported in Slatersville, Providence County. (Mathewson, July 26). VERMONT - Very active throughout Connecticut River Valley. (MacCollom, July 29).

LARGER ELM LEAF BEETLE (*Monocesta coryli*) - ALABAMA - Caused 80 percent defoliation of 3 American elms in forest area at Gold Hill, Chambers County. (McQueen, July 26). Feeding heavily on American elms in forest areas in isolated sections of Tallapoosa and Lee Counties. No adults noted in above mentioned area of Chambers County. (McQueen).

LOCUST LEAF MINER (*Xenochalepus dorsalis*) - MARYLAND - Heavy on black locust in central and southern areas. (U. Md., Ent. Dept.).

COTTONWOOD LEAF BEETLES (*Chrysomela scripta* complex) - NORTH DAKOTA - Moderate numbers of adults and larvae feeding on poplar foliage at Oakes. (N. D. Ins. Sur.).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - WISCONSIN - Larvae taken in Dane County week ending July 19 had not pupated July 26. High temperatures may accelerate development, especially in southeast. Dutch elm disease, transmitted by this species, more pronounced this season than in 1962, with cases confirmed in 6 new counties since last year. (Wis. Ins. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - RHODE ISLAND - Webs apparent statewide to degree typical for time of year. (Mathewson). PENNSYLVANIA - Second-generation infestation medium and noticeable on hawthorn and crab apple in State College. (Gesell, July 24). MARYLAND - Conspicuous on oak, beech and other trees along roadsides in Baltimore County. (U. Md., Ent. Dept.). ALABAMA - Very light on pecan, persimmon and sweetgum in Lee, Macon, Montgomery and Dallas Counties. (McQueen, July 26). Continues active on pecan and sweetgum in Mobile, Conecuh, Escambia and Baldwin Counties. (Deakle, Fairley, Huggins, et al.). ARKANSAS - Infestations heavy in northwest. (Ark. Ins. Sur.). WISCONSIN - Third-stage larvae present in Rock, Columbia and Door Counties; populations relatively low in most sections of State. (Wis. Ins. Sur.).

OAK WEBWORM (*Archips fervidanus*) - PENNSYLVANIA - Very heavy on scrub oak in Monroe County; defoliation ranged 80-90 percent. (Andreychik, July 18).

GREGARIOUS OAK LEAF MINER (*Cameraria cincinnatiella*) - PENNSYLVANIA - Larvae moderately numerous on swamp oak in Adams County. (Negley, July 19).

YELLOW-STRIPED OAKWORM (*Anisota senatoria*) - OHIO - Severely damaged several oak trees in Cuyahoga County; 9 larvae taken from one leaf. (Luckwitz, July 22).

GYPSY MOTH (*Porthetria dispar*) - VERMONT - Very active throughout Connecticut River Valley. (MacCollom, July 29).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - VERMONT - Very active throughout Connecticut River Valley. (MacCollom, July 29).

CARPENTERWORM (Prionoxystus robiniae) - CALIFORNIA - Larvae heavy on trunks of live oaks in San Martin, Santa Clara County. (Cal. Coop. Rpt.).

CATALPA SPHINX (Ceratonia catalpae) - IOWA - Larvae active in central and southern areas. (Iowa Ins. Inf., July 29).

SYCAMORE LACE BUG (Corythucha ciliata) - MARYLAND - Heavy on many large sycamores along streets in College Park and Riverdale, Prince Georges County. (U. Md., Ent. Dept., July 26).

A LACE BUG (Leptocypha mutica) - FLORIDA - Causing pale discoloration of leaves of ash at Crescent City, Putnam County. (Graham, July 24). These are first specimens for Florida State Collection of Arthropods. Blatchley (1926) listed only one Florida record. (Fla. Coop. Sur.).

AN ELM LEAFHOPPER (Scaphoideus luteolus) - WISCONSIN - Few taken in Madison blacklight trap; this species principal vector of phloem necrosis. Norvellina chenopodii, species resembling this vector, also appearing somewhat more commonly. (Wis. Ins. Sur., July 26).

WALKINGSTICK (Diaperomera femorata) - WISCONSIN - Nymphs in late instar in Menomonee County; considerable defoliation of scrub oak occurring in area. (Wis. Ins. Sur., July 26). ARKANSAS - Appearing in higher elevations of Ouachita Mountains, southwest. (Warren).

MIMOSA WEBWORM (Homadaula albizziae) - ALABAMA - Heavy on few mimosas in Montgomery and Lee Counties. (McQueen, July 26). Heavy on isolated mimosas in Lowndes County and continues damaging same host in Lee County. (McQueen). OKLAHOMA - Damaging mimosa and honeylocust in Tulsa area, Tulsa County. This is a new State record. (Okla. Coop. Sur.). KANSAS - Severe on honeylocust in Fairway, Johnson County. This is a new county record. Delimiting survey in progress. Presently in pupal stage; another generation should begin within 1-2 weeks. (Thompson, July 26). NEBRASKA - Continues to damage honeylocust in Lincoln, Lancaster County. (Peterson, Bergman, July 26). ILLINOIS - Damaged some honeylocusts in Streator area. Most larvae pupated; some emergence occurred. (Ill. Ins. Rpt.). OHIO - Infestation noted in Columbiana County July 23, for new county record. (Reigelman). Late stage larvae and new pupae noted on honeylocust at Newark, Licking County, July 25. (Polivka, Lyon). Moderate to heavy on wild honeylocust in Union, Hardin and Logan Counties; one tree in Union County had 85 nests. Late-stage larvae present (Lyon). MARYLAND - General on mimosa and honeylocust in central and southern areas. (U. Md., Ent. Dept., July 26).

BAGWORM (Thyridopteryx ephemeriformis) - MARYLAND - Larvae causing heavy injury to evergreens on several properties in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). OHIO - Moderate on arborvitae at Columbus, Franklin County; light economic damage present. (Lyon). MINNESOTA - Heavy infestation on newly planted arborvitae reported in St. Paul. (Minn. Ins. Rpt.). KANSAS - Light on bald cypress in Riley County. Heavy on tamarisk in Sedgwick County with severe defoliation; infestation several years old with many dead plants in planting. (Thompson, July 26). OKLAHOMA - Damage to evergreens continues in several areas. (Okla. Coop. Sur.). ARKANSAS - Feeding nearing completion except on spruce. (Warren). MISSISSIPPI - Ranged light to heavy on juniper and cedar in Forrest and Oktibbeha Counties. (Ouzts, July 26).

A BAGWORM - NEW MEXICO - Heavy infestation of undetermined species occurring on arborvitae at Clovis, Curry County. (N. M. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Infesting 800 chrysanthemum plants at Punta Gorda, Charlotte County. (Walsh, July 15).

VARIGEATED CUTWORM (Peridroma saucia) - OREGON - Causing economic damage to home flowerbeds in Willamette Valley. (Beglan, Crowell, July 27).

AZALEA LEAF MINER (Gracilaria azaleella) - DELAWARE - Active in Newark area, New Castle County. (Bray, July 26).

A LEAF ROLLER MOTH (Fascista cercerisella) - OKLAHOMA - Caused considerable damage to redbud in Stillwater area, Payne County. (Okla. Coop. Sur.).

A CHRYSAUGID MOTH (Galasa nigrinodis) - NORTH CAROLINA - Larvae caused considerable webbing of leaves of English boxwoods in nurseries in Davie County July 11. Det. by D. L. Wray. (Greene).

A NYMPHALID BUTTERFLY (Vanessa carye) - OREGON - Second-generation adults ovipositing on hollyhock in Salem area. Infestations general; appear to be increasing. (Goeden, July 27).

JAPANESE BEETLE (Popillia japonica) - MAINE - Feeding on many host plants in Auburn-Lewiston area; infestations and damage range light to moderate. (Boulanger, July 27). VERMONT - Very active throughout Connecticut River Valley. (MacCollom, July 29). RHODE ISLAND - Population remains extremely low for time of year. (Mathewson, Hannah, King, Cartier, Peabody). CONNECTICUT - Feeding on ornamentals, but in greatly reduced numbers. (Savos, Aug. 1). NEW YORK - Appears at much lower level of abundance this year in Ithaca area. Presently not a problem in Nassau County. Appeared extremely late in Suffolk County; July 19 at Riverhead and July 23 at Smithtown. (N. Y. Wkly. Rpt., July 27). DELAWARE - Adults abundant on roses and other blossoms in areas of New Castle County. (Burbutis, Evans, July 26). MARYLAND - Adult numbers on ornamentals generally lower than for corresponding period in 1962. (U. Md., Ent. Dept., July 26). OHIO - Severely damaged Virginia-creeper at Toledo intersection of Secor and Alex Roads; 10 adults noted on one leaf. Defoliation estimated at 75-98 percent. (Lyon, Aug. 31).

APHIDS - PENNSYLVANIA - Cinara tujafilina heavy on nursery stock of Thuja orientalis in Luzerne County. (Callacot, July 18). Essigella pini very abundant on Scotch pine plantation, probably causing premature drop of old needles. Has been present for several years; grower concerned as trees nearing harvest age. (Udine, July 24). Determinations made by J. O. Pepper. Pterocomma smithiae heavy on willow in a Luzerne County nursery. (Callacot). MICHIGAN - Various species, including Aphis pini, Myzus persicae, Chermes abietis and Rhopalosiphum maidis, damaging respective hosts in many areas. (Wooley, Tatter, Carpenter, Guyer, Pangborn, Van Klompenberg).

AZALEA LACE BUG (Stephanitis pyrioides) - DELAWARE - Abundant on many azaleas in areas of New Castle County. (MacCreary, July 26).

RHODODENDRON LACE BUG (Stephanitis rhododendri) - PENNSYLVANIA - Heavy on one acre of rhododendrons in nursery in Wayne County. (Andreychik, July 9).

YUCCA PLANT BUG (Halticotoma valida) - MARYLAND - Heavy on large yucca planting at College Park, Prince Georges County, July 26. (U. Md., Ent. Dept.).

COCCIDS - OREGON - Asterolecanium arabisidis infesting privet hedges in Medford. (Berry, July 27). CALIFORNIA - Lecanium corni complex heavy on native California holly in Pine Grove, Amador County, and locally heavy in Fresno, Fresno County. Gossyparia spuria moderate on elms in Fresno. Icerya purchasi heavy on nandina nursery stock, and light on other hosts in Encinitas, San Diego County. Predators have held this pest under control this season in most localities. (Cal. Coop. Rpt., July 26). ARIZONA - I. purchasi severely damaged ornamentals in Globe area. (Ariz. Coop. Sur.). WYOMING - Lepidosaphes ulmi becoming numerous on green ash, lilac, cotoneaster and willows in all areas. (Robb, July 26). WISCONSIN - Pulvinaria innumerabilis sufficiently numerous on maples in Elkhorn, Walworth County, to kill several trees. Treatment of other trees underway. (Wis. Ins. Sur.). RHODE ISLAND - Live female Unaspis euonymi noted June 12; oviposition occurred June 18-20, apparently completed June 25. First hatch noted June 28; hatch complete July 26. (Cartier). CONNECTICUT - L. ulmi

a problem on ash in Watertown. (Savos, Aug. 1). NEW JERSEY - Second-generation U. euonymi crawlers observed on pachysandra; also found on bittersweet and euonymus. (Ins.-Dis. Newsltr., July 30). PENNSYLVANIA - Lecanium fletcheri 10 percent hatched on Taxus spp. in Erie County. Populations below those of 1962. (Wolff). ALABAMA - Fiorinia theae increasing on camellia and Burford holly where spring controls omitted in Mobile County. Appeared much lighter this spring than usual. (Seibels).

Coccids in Florida - Aonidiella citrina light on Buxus sp. at Sanford, Seminole County (Youtsey, July 17) and severe on Citrus sp. at Lutz, Hillsborough County (Fuller, July 15). Aonidiella taxus moderate on Podocarpus spp. at Naples, Collier County. (Walsh, Shirah, July 10). Ceroplastes cirripediformis severe on 50 euonymus plants and Dizygotheca elegantissima at Leesburg, Lake County. (Bentley, Brown, July 22). Diaspis boisduvallii moderate on Arecastrum romanzoffianum at Tampa, Hillsborough County (Simmons, July 9), and on Schomburgkia thompsonii at Pinellas Park, Pinellas County (Bingaman, July 12). Aspidiotus cyanophylli moderate on Yucca aloifolia at Coral Gables, Dade County. (Swanson, June 6). Icerya purchasi light on Calliandra sp. at West Palm Beach, Palm Beach County (Long, July 10), and severe on Citrus paradisa at Jacksonville, Duval County (King, July 15). Pinnaspis aspidistrae moderate on Liriope sp. at Holly Hill, Volusia County. (Pott, July 15). Pseudococcus citri moderate on Acalypha wilkesiana at Ormond Beach, Volusia County. (Pott, July 16). Phenacoccus gossypii moderate on Jatropha sp. at Avon Park, Highlands County (English, McAulay, July 11), and on Acalypha sp. and Hibiscus sp. at Winter Park, Orange County (Mrs. R. B. Cade, July 21). Saissetia nigra light to severe on Dizygotheca elegantissima at Ft. Lauderdale, Broward County. Det. by R. F. Wilkey. (McLean, July 9).

PSYLLIDS - CALIFORNIA - All stages of Psylla uncatoides heavy on acacia trees in Encinitas, San Diego County, and medium in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt., July 26). ALABAMA - Large numbers of galls caused by Pachypsylla venusta appearing on ornamental, shade and forest trees in Autauga, Montgomery and Macon Counties. (McQueen, July 26).

SPIDER MITES - VERMONT - Causing bronzing of oak throughout Connecticut River Valley. (MacCollom, July 29). PENNSYLVANIA - Tetranychus telarius moderate to heavy on chrysanthemums in Venango County. (Adams). DELAWARE - Tetranychus schoenei very numerous on many elms in New Castle County; causing some heavy leaf drop and noticeable chlorosis. (Mellott, July 26). MARYLAND - Unspecified species heavy on boxwood at Trappe, Talbot County. (U. Md., Ent. Dept.). IOWA - Unspecified species abundant on blue spruce and juniper in Story City. (Iowa Ins. Inf., July 29). OKLAHOMA - Spider mites heavy on ornamentals in Kay, Noble and Pawnee Counties; also reported in Cleveland County. (Okla. Coop. Sur.). WYOMING - T. telarius numerous on shrubs and trees in all areas. (Robb, July 26). IDAHO - Unspecified species severely damaging evergreen shrubs in vicinity of Aberdeen. (Bishop). CALIFORNIA - Eotetranychus lewisi heavy on castorbean plants in Santa Ana, Orange County. All stages of Oligonychus punicae heavy on pyracantha at same locations. (Cal. Coop. Rpt.).

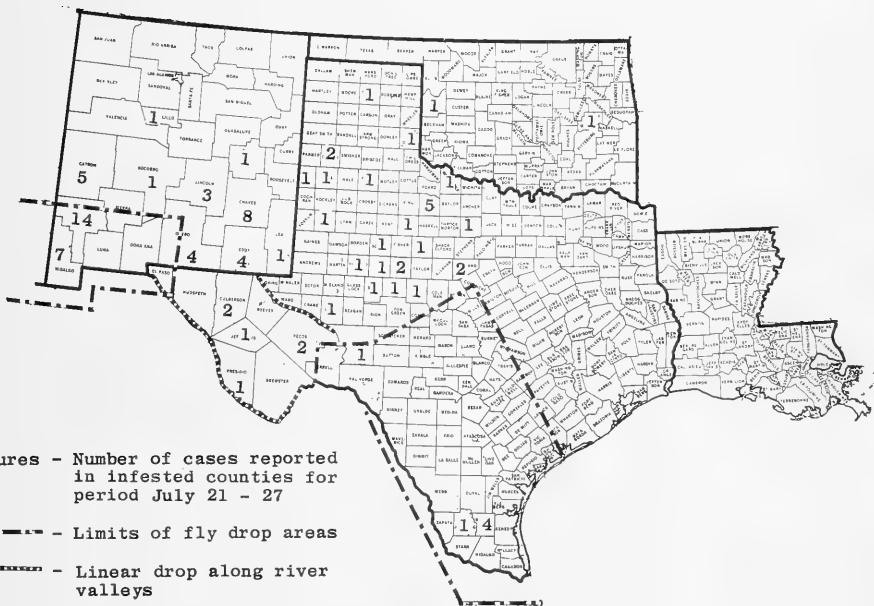
PRIVET MITE (Brevipalpus obovatus) - CONNECTICUT - Prevalent and infestations very heavy. (Johnson, July 30).

MITES - NEW YORK - Damage by an unspecified species severe on thornless honeylocust in Ithaca area; infested foliage turned bright yellow and heavy leaf drop expected. Unspecified mites quite numerous on maples and other trees in Niagara County; likely to build up with continued 90° daytime situation. (N. Y. Wkly. Rpt., July 29). MINNESOTA - Populations increasing on various ornamentals, particularly evergreens. (Minn. Ins. Rpt.). COLORADO - An unspecified eriophyid species damaging foliage of elm, maple and lilac in Larimer and Boulder Counties. (Jenkins).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period July 21 - 27, a total of 40 infestations was reported from TEXAS, 49 from NEW MEXICO and 2 from OKLAHOMA. Specimens were reported from 28 counties in Texas, 11 counties in New Mexico and 2 counties in Oklahoma. Screw-worm was reported for the first time this year from Hutchinson, Collingsworth and Castro Counties, Texas; Bernalillo County, New Mexico; and McIntosh County, Oklahoma. A total of 126,421,050 sterile flies was released during the period July 21 - 27. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period July 21 - 27

- - - - Limits of fly drop areas

..... Linear drop along river valleys

MOSQUITOES - NEVADA - Populations of various species statewide, especially in northern areas, heaviest in several years and troublesome to humans and livestock. (Coop. Rpt., July 26). UTAH - Troublesome about some meadows and fields in Kanosh and Flowell areas, Millard County, and at Castle Dale and other communities in Emery County. (Knowlton). Outbreak in Randolph-Woodruff area, Rich County, later than normal, due to cold weather; problem very serious in Laketown area. (Knowlton, Hanson). Largely *Aedes dorsalis*, extremely troublesome in Locomotive Springs area, Box Elder County; similar annoyance reported north of Skull Valley,

Tooele County. (Knowlton). NEW MEXICO - Troublesome to residents in several areas of Dona Ana County. Aedes sollicitans principal species along rivers; Culex tarsalis main species in Monte Vista area of Las Cruces. Good control being obtained with pre-flood applications of insecticides in swamp areas and treatment of drains containing larvae. (N. M. Coop. Rpt., July 26). TEXAS - Moderate, widespread populations causing annoyance to residents of Lubbock County. Population 79 percent Culex tarsalis, 1 percent Culex pipiens quinquefasciatus, 12 percent Aedes vexans, 8 percent Psorophora signipennis. (Tex. Coop. Rpt.). OKLAHOMA - Psorophora spp. present in annoying numbers in Stillwater area. (Okla. Coop. Sur.). MISSISSIPPI - Psorophora spp. numbers medium on livestock in delta counties; controls applied. (Ouzts). ALABAMA - Aedes sollicitans again annoying to residents along coastal area of Mobile County. (Seibels, July 26). NEBRASKA - Aedes vexans dominant species in all areas except panhandle, where Aedes dorsalis, Aedes nigromaculis and Aedes vexans approximately equal in numbers and comprise nearly 90 percent of all catches. Mansonia perturbans present in unusual numbers in Bassett area, Rock County. (Rapp, July 26). NORTH DAKOTA - Heavy numbers causing considerable annoyance in northwest, especially in Williston area. Aedes vexans comprises 60 percent, Aedes nigromaculis 20 percent, Aedes dorsalis 10 percent and others 10 percent of populations. (Noetzel, July 26). MINNESOTA - During period July 21-27, total of 488 larval collections made in Metropolitan Mosquito Control District; 30 percent contained Aedes vexans. During same period, 1,000 adults taken in 16 light traps; 30 percent were Aedes vexans females, 18 percent Mansonia perturbans. In 33 evening bite collections, 266 mosquitoes taken, of which 154 were Aedes vexans and 83 Mansonia perturbans. Because of light brood produced as result of rains on July 27 and flooding of Minnesota River, adult numbers should increase somewhat during week beginning August 5. Towns along Minnesota River between Mankota and Shakopee can expect heavy populations. (Minn. Ins. Rpt.). WISCONSIN - Some increase of Culex spp. noted in Dane County. Aedes vexans continues at about normal level. (Wis. Ins. Sur., July 26). OHIO - Overall populations lighter this year than any previous year, probably due to dry weather and control program. (Brockway). MAINE - Numbers decreased greatly during July; probably due to severe dry conditions. (Boulanger, July 27).

FACE FLY (Musca autumnalis) - RHODE ISLAND - Averaged 8-10 around faces and eyes of cows on pasture in Kingston, Washington County. (Mathewson, Sorensen). MARYLAND - Ranged 10-30 per head in 8 dairy herds in Frederick and Howard Counties. (U. Md., Ent. Dept.). VIRGINIA - Averaged 5 per head on 2 dairy herds in Page County. (Tarpley, July 24). Heavy on several cattle herds in Dickenson County. (Dinwiddie, July 5). OHIO - Averaged 26.5 per face on beef animals at Apple Creek, Wayne County, July 23). Averaged 14 per face on dairy animals at Wooster, Wayne County, Aug. 2. (Williams, Miller). ILLINOIS - Varied 3-35 (average 15) per face on cattle in northeast. Flies also present on necks and backs of animals in some herds. (Ill. Ins. Rpt.). MICHIGAN - A problem in Ogemaw, Ottawa and Ingham Counties. (Parker, Tatter, Ferris, Van Klompenberg). WISCONSIN - Increased in Shawano and Bayfield Counties; continues troublesome in Grant and Calumet Counties; varying numbers present in Washburn, Rock, Pepin, Monroe, Waukesha, Waupaca, Waushara, Trempealeau, Lafayette, Iowa, Walworth, Racine and Richland Counties; population somewhat less in latter county than in 1962. (Wis. Ins. Sur., July 26). Activity increased in certain areas, particularly Shawano and Grant Counties; troublesome in Sauk, Adams and Juneau County area, annoying in Rock, Walworth and Calumet Counties. First case of pinkeye reported from Walworth County. (Wis. Ins. Sur.). NORTH DAKOTA - Up to 60 per animal observed July 19-26. Ranged 5-60 per head on cattle in sand hill area, July 27-August 2. (Noetzel). SOUTH DAKOTA - Ranged 3-10 per face in north central and northeast parts of State. (Hintz). NEBRASKA - Ranged 5-8 per animal in Lancaster County. (Medley, July 26). KANSAS - Averaged less than one per animal on cattle in north central and northwest areas. (Peters). WYOMING - Averaged 6-8 per head on cows at Laramie, Albany County, July 18. Several adults found on beef cattle at feed lot west of Torrington, Goshen County. (Marks).

HOUSE FLY (Musca domestica) - ALABAMA - Infestation in connection with beef cattle feeding program in Lowndes County, one of heaviest ever noted. (Ledbetter). NORTH CAROLINA - Larvae abundant in untreated droppings from caged layers at several locations in Durham County. (Mount, Jones, July 26). OKLAHOMA - Populations continue at about same levels as previously reported, with annoying numbers present in public buildings and sheltered areas. (Okla. Coop. Sur.). MICHIGAN - Annoying in many sections of Lower Peninsula. (Parker, Tatter, Ferris, Van Klompenberg). NORTH DAKOTA - Counts increased to 10 and above per square yard. (Noetzel). UTAH - Becoming more conspicuous in many parts of State. (Knowlton).

FLIES - NEW MEXICO - Very bothersome in and around homes in Curry and Bernalillo Counties. Populations heavy around stockyards in Curry County. (N. M. Coop. Rpt., July 26).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Heavy in Choctaw, Pike and delta counties; controls applied. (Ouzts). VIRGINIA - Averaged approximately 100 per cow in 2 dairy herds in Page County. (Tarpley, July 24). MARYLAND - Averaged over 100 per head on 20 dairy cattle at Emmitsburg, Frederick County. (U. Md., Ent. Dept.). OHIO - Ranged 150-175 per beef animal in several southeastern counties. (Lyon, July 24). ILLINOIS - Varied 10-100 (average 44) per animal on cattle in northeast. (Ill. Ins. Rpt.). NORTH DAKOTA - Up to 2,000 per head on cattle observed in sand hill region of Ransom County. (Noetzel). SOUTH DAKOTA - Causing considerable irritation to cattle in Faulk County; ranged 30-200 per side per animal. (Hintz). NEBRASKA - Population very low throughout eastern area. (Bergman, July 26). KANSAS - Ranged 50-300 per animal on cattle in north central and northwest areas. (Peters). OKLAHOMA - Counts per head averaged 1,500 on mature cows, 2,500 on bulls and 600 on heifers in Kay County. Lower counts of 200 per head on cows and 500 per head on bulls noted in Payne County, with range of 300-2,000 per head on bulls and 150-600 on cows and calves in Marshall County. Counts moderate to heavy in other areas. (Okla. Coop. Sur.). WYOMING - Continued annoying to livestock in Goshen County; estimated at 150-200 per head. (Marks). UTAH - Moderate in most Millard County herds. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - MARYLAND - Ranged 3-12 per head in 6 dairy herds in Frederick County. (U. Md., Ent. Dept., July 26). ILLINOIS - Varied 0-16 (average 4.8) per animal in northeast. (Ill. Ins. Rpt.). MICHIGAN - Annoying in many sections of Lower Peninsula. (Parker, Tatter, Ferris, Van Klompenberg). NORTH DAKOTA - Ranged 63-350 per animal on cattle in Richland, Ransom, Cass and Traill Counties, July 19-26. Up to 100 per animal (average 25) common on cattle in Cass County, July 27-Aug. 2. (Noetzel). NEBRASKA - Ranged 20-30 per leg on animals in Lancaster County. (Medley, July 26). KANSAS - Ranged 0-25 per animal on cattle in north central and northwest areas. (Peters). OKLAHOMA - Populations down somewhat from previous reports. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta counties; controls applied. (Ouzts).

TABANIDS - IDAHO - Hybomitra rhombica abundant in Gibbsonville-Lemhi Pass area. (Manis). NEVADA - Heavy populations of Chrysops sp. annoying humans and livestock in Preston-Lund area, White County, and Hybomitra sp. numerous in Lamolille, Elko County. (Cooney). UTAH - Deer flies becoming more troublesome in Garden City area, Rich County. (Knowlton, July 25). OKLAHOMA - Tabanus spp. reported heavy on cattle in southeast area. (Okla. Coop. Sur.). MISSISSIPPI - Tabanus spp. medium on livestock in delta counties; controls applied. (Ouzts.). WISCONSIN - Deer fly activity still noticeable, particularly in Vilas County. (Wis. Ins. Sur.). MICHIGAN - Deer flies extremely annoying to man and animals in Livingston and Berrien Counties. Horse flies annoying in many sections of Lower Peninsula. (Parker, Tatter, Ferris, Van Klompenberg). ILLINOIS - Horse flies light; 0-1 (average 0.4) per animal in northeast. (Ill. Ins. Rpt.).

BLACK FLIES (Simulium spp.) - MAINE - A problem in many areas, although numbers well below those of late June and early July. (Boulanger, July 27).

A CALLIPHORID FLY (Lucilia illustris) - CONNECTICUT - Six larvae removed from abscessed external ear of child in Manchester. (Savos, Aug. 1).

SHEEP BITING LOUSE (Bovicola ovis) - WISCONSIN - Infested sheep in Dane County. (Wis. Ins. Sur.).

FLEAS - CALIFORNIA - Ctenocephalides felis medium in residence at Ramona, San Diego County, and several incidences reported in Sacramento, Sacramento County, July 21-26. C. felis heavy in community hall in Hilt, Siskiyou County. Flea infestations have increased in many locations in State. (Cal. Coop. Rpt.).

OKLAHOMA - Ctenocephalides spp. causing considerable concern around homes and on dogs in Stillwater area, Payne County. (Okla. Coop. Sur., July 27).

MARYLAND - Unspecified species causing considerable nuisance to humans in homes in Prince Georges and Queen Annes Counties. (U. Md., Ent. Dept.). RHODE ISLAND - Stubborn house infestation of Ctenocephalides sp. reported in Scituate, Providence County. (Cartier).

HORNETS AND WASPS - CONNECTICUT - Various species causing concern to homeowners A problem in Danbury and Storrs. (Savos, Aug. 1).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - WISCONSIN - Heavy infestation found in Dane County; at least one chicken died. Ornithonyssus sp. found at another location in county. (Wis. Ins. Sur., July 26).

CHICKEN MITE (Dermanyssus gallinae) - WISCONSIN - Very troublesome on chickens in Portage County. (Wis. Ins. Sur.).

CHIGGERS - ALABAMA - Heavy and considerable nuisance throughout central counties. (Barwood, Davis). PENNSYLVANIA - Heavy on bellies of swine turned into weedy lot in Snyder County. (Gesell). WISCONSIN - Populations high in areas of Dane County. (Wis. Ins. Sur.).

AMERICAN DOG TICK (Dermacentor variabilis) - MARYLAND - Numbers reported on dogs and humans considerably more than usual in central and southern areas. (U. Md., Ent. Dept., July 26).

BROWN DOG TICK (Rhipicephalus sanguineus) - CONNECTICUT - Reported from many parts of State. (Savos, Aug. 1).

A BROWN SPIDER (Loxosceles reclusa) - OKLAHOMA - Continues to be found in homes in Stillwater area, Payne County. (Okla. Coop. Sur., July 27).

HOUSEHOLD AND STRUCTURAL INSECTS

WEEVILS (Brachyrhinus spp.) - OREGON - B. rugosotriatus entering homes in Willamette Valley. (Goeden, July 27). WISCONSIN - B. ovatus continues entering homes, principally in sandy soiled areas. (Wis. Ins. Sur.). MICHIGAN - B. ovatus adults continue annoying in homes statewide. (Sieting, Lincoln, Mullett, Pangborn et al.). OHIO - Adult B. ovatus entering many homes in north central and northeastern areas. (Blair, Triplehorn, Rings, July 24). PENNSYLVANIA - B. ovatus nuisance in homes in Clarion and Lawrence Counties. (Adams).

RICE WEEVIL (Sitophilus oryzae) - NEBRASKA - Infested stored food products in home in Lincoln, Lancaster County. (Bergman, July 26).

GROUND BEETLES - NEBRASKA - Extremely abundant in Buffalo, Dawson and Lincoln Counties; severe nuisance in homes, motels and stores. (Bergman). NEW JERSEY - Invading homes; controls recommended. (Ins.-Dis. Newsltr., July 30).

EUROPEAN EARWIG (*Forficula auricularia*) - MAINE - Problem to homeowners throughout York and Cumberland Counties. This is first ARS record for Cumberland County. (Boulanger, July 27). CONNECTICUT - Problem in home at Taftville. (Savos, Aug. 3). PENNSYLVANIA - Causing trouble in home in Elk County. (Adams, July 25).

CRICKETS - WISCONSIN - Increasing in sections of Marquette County and entering homes, also reported in Dane, Walworth and Burnett Counties. (Wis. Ins. Sur., July 26). NORTH DAKOTA - *Gryllus* spp numerous in garages and basements of homes in Fargo area. (N. D. Ins. Sur.).

BLACK CARPENTER ANT (*Camponotus pennsylvanicus*) - CONNECTICUT - Very abundant; confirmed reports expected to surpass those of past seasons. (Johnson).

A SUBTERRANEAN TERMITE (*Reticulitermes* sp.) - MARYLAND - Reproductives found on floor of home in Harford County. (U. Md., Ent. Dept.).

MILLIPEDS - NEW JERSEY - Invading homes; controls recommended. (Ins.-Dis. Newsltr., July 30). ALABAMA - Numerous in isolated lawns and entering homes in Lee County. (McQueen).

SOLPUGIDS - NEVADA - Invaded numerous homes in Reno-Sparks area, Washoe County. (Lauderdale, July 26).

STORED-PRODUCT INSECTS

DERMESTIDS - COLORADO - Infested stored wheat in Sedgwick County. (Pfau, July 26). SOUTH DAKOTA - Infestation of *Trogoderma glabrum* found in stored wheat in Lyman County. (Kantack).

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) - COLORADO - Infested stored oats in Grand County. (Teagarden, July 26).

BENEFICIAL INSECTS

LADY BEETLES - NEW MEXICO - Adults and immatures abundant in alfalfa infested with aphids in Eddy and Chaves Counties. (N. M. Coop. Rpt.). ARIZONA - *Rodolia cardinalis* present in several areas of Salt River Valley. (Ariz. Coop. Sur.). NEVADA - Unspecified species generally abundant in alfalfa, cotton and grain statewide. (Coop. Rpt.). WYOMING - Unspecified adults per 100 sweeps averaged 42 in alfalfa, 10 in sugar beets, and 26 in small grain fields in Natrona, Johnson and Sheridan Counties week ending July 26. Populations high in all crops surveyed in Goshen County week ending August 2; adults per 100 sweeps averaged 80 in alfalfa, 22 in sugar beets, 32 in potatoes and 20 in beans and 64 per 100 corn plants. (Marks). ALABAMA - *Hippodamia convergens*, *Coleomegilla maculata fuscilabris* and *Coccinella novemnotata* common in cotton where no controls applied in central and southern areas. *Chilocoris stigma* feeding on aphids in Macon County cotton. (McQueen, July 26).

PUNCTUREVINE WEEVILS (*Microlarinus* spp.) - NEVADA - *M. lareynii* and *M. lypriformis* heavy on puncturevine in Moapa Valley, Clark County. Both species released in Caliente, Lincoln County, and Fallon, Churchill County, 6 weeks ago, and have completed one generation. Release of 325 specimens made July 28 at Alamo, Lincoln County, and 200 specimens released at Hawthorne, Mineral County, and at Single Bench, Churchill County, August 1. (Bechtel, Martinelli).

A MELYRID BEETLE (*Collops vittatus*) - ARIZONA - Adults ranged 20-25 per 100 sweeps in cotton and 25-40 in alfalfa in Graham and Cochise Counties. (Ariz. Coop. Sur., July 27).

GREEM LACEWINGS - NEW MEXICO - Adults and larvae abundant in southern Dona Ana County cotton fields. (N. M. Coop. Rpt., July 26). Adults and larvae abundant in alfalfa in Curry and Roosevelt Counties; ranged 6-24 adults per 100 sweeps. (N. M. Coop. Rpt.). ALABAMA - Chrysopa oculata common in central and southern area cotton. (McQueen, July 26).

DAMSEL BUGS (Nabis spp.) - ALABAMA - Common in cotton in southern and central areas. (McQueen, July 26). NEW MEXICO - Adults and immatures abundant in alfalfa fields infested with aphids in Eddy and Chaves Counties. (N. M. Coop Rpt.). NEVADA - Generally abundant in alfalfa, cotton and grain statewide. (Coop. Rpt.). WYOMING - Adults per 100 sweeps in alfalfa averaged 88 in Sheridan County and 52 in Natrona and Johnson Counties, week ending July 26. During week ending August 2, adults per 100 sweeps averaged 78 in alfalfa and 46 in potatoes, and averaged 42 per 100 corn plants in Goshen County. (Marks).

BIG-EYED BUGS - ARIZONA - Geocoris spp. moderate in cotton in Graham and Cochise Counties. (Ariz. Coop. Sur., July 27). NEVADA - Geocoris spp. generally abundant in alfalfa, cotton and grain over State. (Coop. Rpt.). COLORADO - Geocoris sp. abundant on alfalfa in Routt County. (Hamil). WYOMING - Geocoris sp. adults ranged 35-40 per 100 sweeps in Goshen County alfalfa. (Marks). ARKANSAS - Single specimen of Hypogeocoris imperialis collected on soybeans July 15, 1963, in Conway County is a new State record. (Ark. Ins. Sur.). ALABAMA - G. punctipes common in southern and central area cotton. (McQueen, July 26).

A FLOWER BUG (Orius insidiosus) - ALABAMA - Common in cotton fields in southern and central areas. (McQueen, July 26).

A PREDACEOUS STINK BUG (Brochymena sp.) - ALABAMA - Feeding on elm leaf beetle larvae on elms in Auburn, Lee County; ranged 1-5 per 15-25 foot tree. (McQueen).

CICADA KILLER (Sphecius speciosus) - MICHIGAN - Reported in increasing numbers from yards in Ingham and Wayne Counties. (Guyer, Kidd). IOWA - Active all over State. (Iowa Ins. Inf., July 29). VIRGINIA - Active at Hopewell, Prince George County (Amos, July 29), and at Smithfield, Isle of Wight County (Tarpley, Gizzard, July 31).

AN APID BEE (Peponapis pruinosa) - RHODE ISLAND - Males and females active on flowers of squash and pumpkin in Exeter, Kingston and Peace Dale, Washington County. (Mathewson, Sorensen, July 26).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Although adults continue numerous in Battle Creek area, peak activity apparently occurred about July 22; numbers taken in traps in area tapering off slightly since that date. Foliage treatment applied in area of heaviest infestation on southeast side of city; treatment expected to continue through August 7. Damage recently heaviest on sassafras and various weeds and wild shrubs. Few additional beetles taken in Monroe and Lenawee Counties near periphery of area treated in 1962. (Carlson, Turner). OHIO - Two adults collected in Mt. Gilead State Park, Morrow County; this is a new county record. Adults taken for first time in Salem Township, Meigs County, and in Wilksville Township, Vinton County. (Polivka, July 24). Found from north to south in eastern half of State, namely in Wayne, Stark, Holmes, Coshocton, Belmont, Noble, Washington, Athens, Meigs, Gallia, Lawrence and Vinton Counties. Heaviest in southern Athens and northern Meigs Counties on sassafras trees; trees ranged 10-85 percent skeletonized. More damage in this area along Route 33 than in past years. (Polivka, Lyon, July 23). Adults on corn apparently serious enough to justify controls near Millersburg, Holmes County. (Holdsworth, July 19). Considerable feeding damage noted on peach and raspberry plants in Mahoning County. (Cibula, July 21). Adults feeding on English ivy and apple fruits and foliage in Wayne County. (Rings, July 26). Heaviest adult trappings in State occurred at New Lexington, Perry County, and

Marion, Marion County. (Wolfe, July 26). Heavy adult numbers trapped outside regulated area, by county, as follows: Logan 1,036; Perry 873; Marion 867; Preble 55. (Wolfe). Adults noted feeding on smartweed near Bladensburg, Knox County, August 1. (Davidson). VIRGINIA - Only occasional specimens noted in Southampton, Nansemond, Princess Anne and King William Counties and in Chesapeake city. (Tarpley).

ASIATIC GARDEN BEETLE (Maladera castanea) - OHIO - Total of 22 adults taken in trap at Marietta, Washington County; largest number ever taken in area. (Polivka, July 23).

EUROPEAN CHAFER (Amphimallon majalis) - PENNSYLVANIA - Infested small area in city of Erie, Erie County, July 3. (Nixon).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - A new and previously unreported infestation noted at Opelika Mills, Lee County. This is a new county record. (Barwood, Davis).

A GROUND BEETLE (Harpalus sp.) - NORTH DAKOTA - Very large numbers appeared; found in and on various buildings, sidewalks, streets and elsewhere. (N. D. Ins. Sur., July 26).

SPINED SOLDIER BUG (Podisus maculiventris) - ALABAMA - Destroying considerable numbers of larvae of catalpa sphinx reserved in orchard for commercial fish bait in Geneva County. (Reynolds, July 26).

A FALSE CHINCH BUG (Nysius sp.) - NEVADA - Heavy populations reported in Silver Springs area, Lyon County. (Lauderdale, July 26).

A PLATYSTOMATID FLY (Rivellia quadrifasciata) - VIRGINIA - Adults collected on sticky board trap on peach tree in Churchland area, Chesapeake city. Det. by G. Steyskal. (Morris, July 3).

CORRECTIONS

CEIR 13(29) :832 - COOLEY SPRUCE GALL APHID (Chermes cooleyi) - IDAHO - Should read: "Galls abundant on spruces ..."

CEIR 13(30) :848 - JAPANESE BEETLE (Popillia japonica) - OHIO - Adults on corn at Circleville, Pickaway County, in error. Note should read: "One adult collected from rose bush in Circleville near a treated area".

CEIR 13(31) : 879 (SPECIAL REPORTS) - Insects Now Known to Occur in the United States should read: Insects Not Known...

LIGHT TRAP COLLECTIONS

| | Theresa- TYPE | Insect- FALLON | Type of LTP* | Males | | Females | | Males | | Females | | Males | | Females | | Misc. |
|------------------------|------------------|-------------------|-----------------|--------|------|---------|------|--------|------|---------|------|--------|------|---------|--|-------|
| | | | | FLIGHT | TRAP | FLIGHT | TRAP | FLIGHT | TRAP | FLIGHT | TRAP | FLIGHT | TRAP | | | |
| ARKANSAS | | | | | | | | | | | | | | | | |
| Hope 7/18-24 | | | | | | | | | | | | | | | | |
| Hope 7/25-31 | | | | | | | | | | | | | | | | |
| Morrilton 7/11-24 | | | | | | | | | | | | | | | | |
| Morrilton 7/25-31 | | | | | | | | | | | | | | | | |
| Keiso 7/18-24 | | | | | | | | | | | | | | | | |
| Keiso 7/25-31 | | | | | | | | | | | | | | | | |
| Fayetteville 7/18-31 | | | | | | | | | | | | | | | | |
| CALIFORNIA | | | | | | | | | | | | | | | | |
| Davis 7/27-8/2 | | | | | | | | | | | | | | | | |
| FLORIDA | | | | | | | | | | | | | | | | |
| Gainesville 7/23 | | | BL | | | | | | | | | | | | | |
| Gainesville 7/30 | | | BL | | | | | | | | | | | | | |
| GEORGIA | | | | | | | | | | | | | | | | |
| Tifton 7/11-17 | | | | | | | | | | | | | | | | |
| Tifton 7/18-24 | | | | | | | | | | | | | | | | |
| Tifton 7/25-31 | | | | | | | | | | | | | | | | |
| ILLINOIS (County) | | | | | | | | | | | | | | | | |
| Champaign 7/19-25 | | 63-88 | 1,14 | | | | | | | | | | | | | |
| Champaign 7/26-8/1 | | 64-83 | 0,09 | | | | | | | | | | | | | |
| INDIANA (Counties) | | | | | | | | | | | | | | | | |
| La Porte 7/16-23 | | | | | | | | | | | | | | | | |
| La Porte 7/24-29 | | | | | | | | | | | | | | | | |
| Lawrence 7/15-21 | | | | | | | | | | | | | | | | |
| Lawrence 7/22-25 | | | | | | | | | | | | | | | | |
| Tippecanoe 7/15-20 | | | | | | | | | | | | | | | | |
| Tippecanoe 7/21-30 | | | | | | | | | | | | | | | | |
| Vanderburgh 7/16-23 | | | | | | | | | | | | | | | | |
| Vanderburgh 7/24-29 | | | | | | | | | | | | | | | | |
| Jasper 7/16-22 | | | | | | | | | | | | | | | | |
| Jasper 7/23-27 | | | | | | | | | | | | | | | | |
| Stuben 7/25-31 | | | | | | | | | | | | | | | | |
| Marshall 7/18-24 | | | | | | | | | | | | | | | | |
| Marshall 7/25-31 | | | | | | | | | | | | | | | | |
| KANSAS | | | | | | | | | | | | | | | | |
| Garden City 7/15,17,19 | | | | | | | | | | | | | | | | |
| Garden City 7/18,20,24 | | | | | | | | | | | | | | | | |
| Marshall 7/21-26 | | | | | | | | | | | | | | | | |
| Mound Valley 7/15,18 | | | | | | | | | | | | | | | | |
| Garden City 7/24,26,29 | | | | | | | | | | | | | | | | |

(Continued on page 935)

* BL = blacklight; I = incandescent; MV = mercury vapor; 0 = other
 ** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn;
 grain = small grains; leg. = legume (unspecified); lett. = lettuce; pean. = peanut; pep. = pepper; pot. = potatoes;
 SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified to above);
 tob. = tobacco; tom. = tomato.

LIGHT TRAP COLLECTIONS

| | Tempera- ture | Precep- sation | Type of trap | *Species (black lines) | *Species (pink lines) | *Species (red lines) | *Species (blue lines) | *Species (yellow lines) | *Species (green lines) | *Species (orange lines) | *Species (purple lines) | *Species (brown lines) | *Species (grey lines) | *Species (pink lines) | *Species (red lines) | *Species (blue lines) | *Species (yellow lines) | *Species (green lines) | *Species (orange lines) | *Species (purple lines) | *Species (brown lines) | |
|---------------------------------|------------------|-------------------|-----------------|---------------------------|--------------------------|-------------------------|--------------------------|----------------------------|---------------------------|----------------------------|----------------------------|---------------------------|--------------------------|--------------------------|-------------------------|--------------------------|----------------------------|---------------------------|----------------------------|----------------------------|---------------------------|--|
| NEBRASKA | | | | | | | | | | | | | | | | | | | | | | |
| Kearney 7/9-15 | | | | | | | | | | | | | | | | | | | | | | |
| Lincoln 7/10-17 | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska 7/10-16 | | | | | | | | | | | | | | | | | | | | | | |
| North Platte 7/10-16 | | | | | | | | | | | | | | | | | | | | | | |
| Parks 6/26-7/2 | | | | | | | | | | | | | | | | | | | | | | |
| Parks 7/3-9 | | | | | | | | | | | | | | | | | | | | | | |
| Scotts Bluff Expt. Sta. 7/10-16 | | | | | | | | | | | | | | | | | | | | | | |
| NORTH DAKOTA | | | | | | | | | | | | | | | | | | | | | | |
| Fargo 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Bismark 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Emrick 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Parrick 7/21-27 | | | | | | | | | | | | | | | | | | | | | | |
| Parrick 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Valley City 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Valley City 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Linton 7/19-26 | | | | | | | | | | | | | | | | | | | | | | |
| Linton 7/27-8/2 | | | | | | | | | | | | | | | | | | | | | | |
| Bowman 7/27-8/2 | | | | | | | | | | | | | | | | | | | | | | |
| OHIO | | | | | | | | | | | | | | | | | | | | | | |
| Wooster 7/20-26 | | | | | | | | | | | | | | | | | | | | | | |
| Wooster 7/27-31 | | | | | | | | | | | | | | | | | | | | | | |
| Ripley 7/20-26 | | | | | | | | | | | | | | | | | | | | | | |
| Ripley 7/27-31 | | | | | | | | | | | | | | | | | | | | | | |
| Piquetta 7/20-26 | | | | | | | | | | | | | | | | | | | | | | |
| Piquetta 7/27-31 | | | | | | | | | | | | | | | | | | | | | | |
| Columbus 7/20-26 | | | | | | | | | | | | | | | | | | | | | | |
| Columbus 7/27-31 | | | | | | | | | | | | | | | | | | | | | | |
| Royleville 7/26-31 | | | | | | | | | | | | | | | | | | | | | | |
| Fairborn 7/27-31 | | | | | | | | | | | | | | | | | | | | | | |
| SOUTH CAROLINA | | | | | | | | | | | | | | | | | | | | | | |
| Clemson 7/20-26 | | | | | | | | | | | | | | | | | | | | | | |
| Charleston 7/20-28 | | | | | | | | | | | | | | | | | | | | | | |
| Charleston 7/23-8/4 | | | | | | | | | | | | | | | | | | | | | | |
| TEXAS | | | | | | | | | | | | | | | | | | | | | | |
| Waco 7/29-8/2 | | | | | | | | | | | | | | | | | | | | | | |
| Brownsville 7/24-31 | | | | | | | | | | | | | | | | | | | | | | |
| WISCONSIN | | | | | | | | | | | | | | | | | | | | | | |
| Guys Mills 7/16-22 | | | | | | | | | | | | | | | | | | | | | | |
| Guys Mills 7/23-29 | | | | | | | | | | | | | | | | | | | | | | |

(Continued on page 937)

* BL = blacklight; I = Incensement; NY = mercury vapor; 0 = other

** alf. = alfalfa; beet - garden beet and/or sugar beet; cole = cole crops (crucifers); cont. = cotton; TC = fish bait; corn = sweet corn; d. = dill; egg = eggplant; f. = fennel; fl. = flycatcher; ger. = geranium; h. = hibiscus; l. = lettuce; m. = melon; n. = nasturtium; o. = onion; pap. = papaya; pot. = potato; rad. = radish; sc. = scabiosa; scs. = scabiosa plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPER damage becoming more noticeable in areas of Illinois, Wisconsin and Minnesota. Adult surveys underway or completed in North Dakota, South Dakota, Kansas and Oklahoma. Migration reported in Nevada, and damage continues in Utah. (pp. 941-942). A second generation of CEREAL LEAF BEETLE developed in Indiana; some activity continues in Michigan. (p. 942). NORTHERN CORN ROOTWORM adults abundant on silks of corn in central, west central and northern Ohio, and feeding continues in Michigan, Missouri and Wisconsin. (p. 942). Egg masses of second-generation EUROPEAN CORN BORER reported from New York to South Dakota; infestations heavier than most years in Lee County, Arkansas. (p. 944). CORN LEAF APHID increasing rapidly on corn at Wooster, Ohio, and in Wisconsin; colonies also forming on small grains in latter State. (p. 945). SORGHUM MIDGE adults found in Lea County, New Mexico. (p. 945).

SPOTTED ALFALFA APHID increasing on alfalfa in southeast South Dakota, and variable in southwest Kansas; found in Larimer County, Colorado, for first time this season. (p. 945). ALFALFA WEEVIL larvae still causing damage to second-cutting of alfalfa in Washakie and Big Horn Counties, Wyoming. (p. 946). BEET ARMYWORM unusually abundant and injurious to several late soybean fields in Charleston County, South Carolina, during late July. (p. 947).

ORCHARD MITES, principally EUROPEAN RED MITE and TWO-SPOTTED SPIDER MITE, continue to warrant controls in orchards in several areas of the country. (p. 948). PEACH TREE BORER caused severe injury to sour cherries in New York; first record of such injury to this host in the State. (p. 949). First infestation of WESTERN GRAPE LEAF SKELETONIZER found in commercial vineyard for several years in Maricopa County, Arizona. (p. 949). BLUEBERRY MAGGOT continues a severe problem on blueberries in Grand Junction area of Michigan. (p. 950). Several citrus pests above average levels in Florida, including CITRUS RUST MITE, TEXAS CITRUS MITE, and several SCALE INSECTS. (p. 950).

BOLL WEEVIL continues to increase on cotton rather generally, with some migration occurring. Third-generation weevils appearing in Tennessee and numerous in some delta area fields of Mississippi. (pp. 954-955). BOLLWORMS continue to damage cotton in Southeast and Mississippi Valley areas, and increasing populations noted in the West. (pp. 955-956). LYGUS BUGS remain major pests of cotton in Arizona and California, although SPIDER MITES also important in California cotton. Spider mites increasing on cotton in several other areas of the country. (p. 957).

The 1963 GYPSY MOTH defoliation survey in Connecticut shows 32,005 acres less than 50 percent defoliated and 8,135 acres over 50 percent defoliated. (p. 959). Defoliation of white oak by WESTERN OAK LOOPER in Willamette Valley of Oregon occurring over much wider area than in 1962. (p. 959).

MOSQUITOES, HORN FLY, STABLE FLY, FACE FLY and HOUSE FLY major pests of man and animals. (pp. 963-964). STRAWBERRY ROOT WEEVIL regarded as probably biggest household problem of season in Wisconsin. (p. 964).

DETECTION

New State records were ASIATIC OAK WEEVIL in Ohio (p. 960) and a DARKLING BEETLE (*Eleodes suturalis*) in California (p. 964). New county records of significance were WESTERN CORN ROOTWORM in Emmet and Grundy Counties, Iowa; Buchanan, Clinton, Caldwell, Platte, Clay, Ray and Mercer Counties, Missouri; Jackson, Cottonwood, Mower, Waseca, and Ramsey Counties, Minnesota; and several counties in South

Dakota (p. 942); PEAR PSYLLA in Lassen County, California (p. 948); a MINT FLEA BEETLE (*Longitarsus waterhousei*) in Malheur County, Oregon (p. 953); POPULAR-AND-WILLOW BORER in Carroll County, Maryland (p. 960); and MIMOSA WEBWORM in Mahoning County, Ohio (p. 960).

CORRECTIONS

See page 966.

SPECIAL REPORTS

Wireworm Populations During 1962-63 Fall-to-Spring Season and Their Damage to Potatoes in Vicinity of Charleston, South Carolina, During Spring of 1963. (p. 951).

Status of the Screw-worm in the Southwest. (p. 962).

Interceptions of Special Interest at U.S. Ports of Entry. (p. 970).

Hawaiian Insect Notes. (p. 971).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Pasture-Rangeland, Alfalfa and Wheat in Colorado During 1962. (pp. 972-974).

Reports in this issue are for week ending August 9, unless otherwise indicated.

WEATHER OF THE WEEK ENDING AUGUST 12

Though most areas of the Nation had measurable precipitation during the week, little or none fell in much of the eastern sections of Montana and Washington, areas of the largest above normal temperature departures. Mostly only very light or trace amounts moistened the Pacific States; however, moderate rains dampened local areas of Nevada and southern California. The first sizable showers in several months fell over the irrigated areas of southern Arizona; 0.62 inch at Gila Bend was greater than for the calendar year through the end of the previous week. Elsewhere shower activity was variable, ranging from locally flooding rains in New York, Iowa, and Colorado to very light amounts in the middle Atlantic coast, South Dakota, and western Texas. A deluge at Buffalo, New York, heaviest 24-hour fall in 70 years, caused considerable damage due to flooding on the 7th. By the morning of the 6th, much of Iowa had received rainfall over 2 inches, with 5.25 inches reported locally. Thundershowers in central and southern Texas brought relief after 4 hot, dry weeks. Heavy rains over the weekend across central Minnesota into North Dakota left totals to over 4 inches.

Average temperatures were mostly above normal for the first time in 8 weeks in the Pacific Northwest, due largely to such maxima as the 104° on the 8th at The Dalles, Oregon. Miles City, Montana, heated to over 100° on 4 days and Glasgow, Montana, had the largest above normal departure with 9°. The northeast quarter of the Nation, which had very few stations recording maxima over 90° during the first 5 days, underwent even further cooling from a Canadian air mass over the weekend. Clouds and rain helped hold Asheville, North Carolina, from warming above 66° on the 10th. The largest temperature deficiency was 8° below normal at Huntington, West Virginia. Summer storms took their toll in many areas. On the 8th, trailers were overturned, utility poles downed, and hail to 1/4 inch in diameter fell during a thunderstorm at West Fargo, North Dakota. On the same day hailstones to baseball size fell at Hickson, North Dakota, damaging cars. Dubuque, Iowa, had an intense rainfall of 3/4 inch in 10 minutes and Morehead, Kentucky, had a down-
(continued on page 957)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - MICHIGAN - Light infestations of several species reported in Ogemaw and Ottawa Counties. (Ferris, Van Klompenberg). ILLINOIS - Damage to some hay fields, particularly red clover, noticeable in northern area. Melanoplus femurrubrum and M. differentialis present; some M. femurrubrum becoming adults and flying. Some migration to soybeans and corn noted. (Ill. Ins. Rpt.). IOWA - Migrating into forage, soybeans and corn fields; controls recommended. (Iowa Ins. Inf., Aug. 5). WISCONSIN - Becoming more noticeable as more growth occurs and more feeding done. About 80 percent of M. femurrubrum population matured in southern area. Considerable feeding on corn adjacent to recently cut alfalfa occurring and feeding damage apparent in many soybean fields. Populations in southern and western Dane County, portions of Rock and Green Counties, average better than 40 per square yard with ratios of better than 35 percent M. differentialis. This species more prevalent in many corn fields. Dissosteira carolina adults noticeable, but not significantly abundant, although species found more commonly feeding on tobacco than other two species. Alfalfafield in Juneau County stripped by grasshoppers and numbers plentiful in sandier areas. Populations heavy in northeastern Sauk County, southern Grant County and causing some damage in Ashland, Bayfield and Washburn Counties. Numbers high and particularly bothersome in gardens in Pepin County. Many homeowners in portions of Dane County complaining about grasshoppers in lawns. (Wis. Ins. Sur.). MINNESOTA - Development of M. differentialis and M. femurrubrum rapid in west central district. Majority of infestations along roadsides and field margins. Counts ranged 9-20 or more per square yard. Highest counts found in Chippewa, Swift and Lac qui Parle Counties. Migrating into soybeans and corn. Some controls applied in Lac qui Parle and Chippewa Counties. Few corn fields north of Dawson in Lac qui Parle County have high numbers of M. differentialis damaging margin rows; defoliation extended well into these fields. In southwest district, roadside infestation most common. Few high count fields found in Pipestone County, ranging up to 40 per square yard. In northwest district, few soil bank fields in western Marshall and Kittson Counties had margin counts of 10 per square yard and field counts of 7 per square yard. M. bivittatus dominant in these fields. In south central and southeast districts, few alfalfa fields in Fillmore, Freeborn and Rice Counties had counts of 20-50 per square yard. Roadside infestations up to 40 per square yard found in area. (Minn. Ins. Rpt.).

NORTH DAKOTA - Adult grasshopper survey conducted in La Moure, McIntosh and Dickey Counties. Habitats included small grains, alfalfa, corn and soil bank land. Infestations ranged 1-12 per square yard and averaged 3 per square yard. Slight boll clipping observed on flax. M. femurrubrum development ranged from third instar to adult and M. bivittatus, M. sanguinipes, M. dawsoni and M. packardii ranged fourth instar to adult. (Wilson). Adult rangeland survey completed in McKenzie, Dunn and Williams Counties. Infestations averaged 4 and 5 per square yard. Scattered areas in McKenzie and Dunn Counties averaged 7 per square yard. Totals for these counties included 481,960 acres with light infestations, and 10,888 acres with threatening infestations. An adult survey on cropland in McLean County showed range of 1-10 per square yard in field (average 3) and range of 4-16 (average 7) in margins. Dominant species M. bivittatus, M. packardii and M. sanguinipes. Light boll clipping in flax and light leaf stripping in late small grains evident throughout area. (Brandvik). SOUTH DAKOTA - Adult survey on cropland underway, with few of county surveys being completed. Infestations in these counties varied noneconomic to light to threatening, with heavier infestations being confined mainly to soil bank fields, alfalfa and field margins, and roadsides. Dominant species M. bivittatus, M. differentialis, M. femurrubrum, and M. sanguinipes. (Burge, Zimmerman, Hintz). KANSAS - Adult survey completed in western two-thirds of State. All stops rated noneconomic except one stop in Sumner and Barber Counties rated moderate and one stop in Seward and two stops in Phillips County rated light. (Bell). OKLAHOMA - Adult surveys completed in 23 counties, with 9 counties showing populations of 10 or more per square yard. Highest counts noted in Oklahoma County, central area, with 10-40 per square yard in field margins. Rangeland areas showed counts of 1-15 per square yard in 5 central and southwestern counties, a light infestation. Several species of

grasshoppers involved. (Okla. Coop. Sur.). WYOMING - Counts of several species averaged 10-12 per square yard on alfalfa and small grains in Washakie and Big Horn Counties. (Marks). UTAH - Grasshoppers causing economic damage in some areas of Carbon County. (Knowlton, Horne). Outbreak quite general over Juab Valley, Nephi to 6 miles south of Levan, Juab County. Spotted and generally moderate in alfalfa examined in Uintah and Duchesne Counties; 40 percent winged. (Knowlton). Control in Fish Lake National Forest east of Beaver at an elevation of 10,500 feet was very effective over 4,000 acres baited. Population extremely high, estimated in excess of 100 per square yard. Species were Melanoplus bruneri and M. borealis. Grasshoppers in area exhibit the alternating generation type of development. In 1961, a severe infestation developed in this area during late season. Very little hatching occurred in 1962; but as expected, outbreak very severe and has occurred this season. (Thornley, Knowlton). Grasshoppers moving from range and vacant lots to attack crops and gardens along Wasatch Front, from Clearfield to south Bountiful. (Knowlton, Stokes). Damaging, especially at Helper. Spring Glenn and Castle Gate, in Carbon County. (Knowlton, Horne). About 3,000 acres of small grains and pinto beans treated for grasshoppers in area east of Monticello, San Juan County. (Knowlton, Argyle). Grasshoppers infesting home grounds south of Moab, Grand County. (Knowlton). NEVADA - Heavy populations of various species migrating from drying range areas in Washoe, Pershing and Humboldt Counties. Some migration, causing damage to home yards and isolated crop lands. Moderate infestation of Idiostatus sp. on 100 acres of rangeland in Red Rock district of Washoe County. (Coop. Rpt.).

MORMON CRICKET (Anabrus simplex) - UTAH - Light occurrence over Sanpete County line, between Nephi and Fountain Green. (Knowlton). Approximately 500 acres controlled in Eastland area of San Juan County this season. (Argyle, Knowlton).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - No additional infestations reported since July 1. Most beetles in Galien area have gone into overwintering quarters such as cracks and other tight places along fence rows and woodlots, mainly in dry sites above ground. Some beetles still found in weed and border grasses, Sudan grass and corn, some of which still active. Most regulatory personnel involved with inspection and fumigation of harvesting machinery and hay, grain and straw from quarantined areas. (Ruppel, Ring). OHIO - Report in CEIR 13(32):906 should read "Six Ohio counties (Williams, Fulton, Lucas, Defiance, Allen and Henry) have recorded infestations." (Porter). INDIANA - A second-generation developed from larvae collected from a field at New Carlisle, St. Joseph County. Larvae completed development and pupated in June. Emerging adults fed continuously on oats, mated and commenced laying eggs without diapause. First hatch occurred August 7. Nondiapausing adults still actively feeding, mating and ovipositing. (Wilson, Toba).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - IOWA - Collected in two new counties, Emmet and Grundy. (Iowa Ins. Inf., Aug. 5). MISSOURI - Collected from Buchanan, Clinton, Caldwell, Platte, Clay, Ray and Mercer Counties for first time; all in northwest area. Total of 16 counties in State now infested. (Munson, Thomas, Wood). MINNESOTA - Found in following counties for first time: Jackson, Cottonwood, Mower, Waseca and Ramsey. Reports of poor control received from Nobles and Rock Counties. Caused heavy lodging in Nobles County field where species apparently resistant to specific chlorinated hydrocarbons. (Minn. Ins. Rpt.). SOUTH DAKOTA - Adults observed in just about every field surveyed south of a line of counties including Buffalo through Moody. (Hintz). NEBRASKA - Adult survey indicates species apparently dominant throughout State. (Bergman).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW YORK - First adults of season seen August 2 on silk of corn in Hudson Valley at Poughkeepsie. (N.Y. Wkly. Rpt.). OHIO - Adults abundant and feeding on silks of corn in central, west central and northern areas. Economic damage to seed corn occurring. (Blair, Holdsworth, Schurr). MICHIGAN - Adults continue to emerge in increasing numbers; larvae and pupae abundant in infested fields in Cass County. (Wells, Janes, Sparks). MISSOURI - Adults ranged 0-19 per plant on corn in central and north central areas. Counts in fields with green silks averaged 6-11 adults per plant.

(Munson, Thomas, Wood). WISCONSIN - Considerable feeding by adults on corn silks occurring in many southern area fields. Larval damage reported from Pepin, Sauk and Dane Counties, but only in fields planted corn on corn for 3 or more years. (Wis. Ins. Sur.). NEBRASKA - Few adults found this year in same area where not detected past two years. (Bergman).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpuncta howardi) - NEBRASKA - In central irrigated Platte River Valley, species more prevalent than in previous years. (Bergman).

SAP BEETLES - ALABAMA - Numerous in corn in fields following damage by Heliothis zea in Mobile, Autauga and most all counties of State. (Seibels et al.). NORTH DAKOTA - Glioschrochilus quadrisignatus observed on sweet corn ears in Fargo area; beetles taken from areas on ears where Ostrinia nubilalis had been working. (N.D. Ins. Sur.).

A BILLBUG (Sphenophorus sp.) - ARKANSAS - Larvae found feeding in stems of rice growing on levees in Lincoln County, southeast. Feeding is at or just above ground level. Feeding of similar manner reported from Jefferson County. (Ark. Ins. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - MARYLAND - Late corn in Somerset County moderately infested; larvae second instar to full grown. Some moths in traps. Also present in Frederick and Montgomery Counties. (U. Md., Ent. Dept.). NORTH CAROLINA - Larvae caused considerable damage to pasture in Pamlico County. (Rea, Rabb; Aug. 2). ALABAMA - Destroying 30 acres of pretassel corn in Chilton County; 1-3 larvae per stalk. (Wilkins, Helms, Cox). MISSISSIPPI - Medium on millet in Jackson and Walthall Counties; controls applied. (Ouzts). ARKANSAS - Light infestations observed in corn of medium planting date in Lee County. Very heavy infestations observed in young corn in Pulaski County, central area. From 70 to 80 percent of stalks show heavy feeding signs. (Ark. Ins. Sur.). TEXAS - Heavy populations stripping about 85 acres of young hegari grain sorghum and Sudan grass in Bowie County (Lynch) and heavily damaging Coastal Bermuda grass pastures in Madison County (Garrett). ILLINOIS - Moth flight continues and late fields in pretassel stages have shown some larval damage in whorls. Generally, damage minor throughout State. (Ill. Ins. Rpt.). WISCONSIN - Larvae causing some "ragging" of young corn plants in Arlington area. (Wis. Ins. Sur.).

CORN EARWORM (Heliothis zea) - NEW YORK - Fourth-stage larva found at Poughkeepsie on August 2; first of season in Hudson Valley. (N.Y. Wkly. Rpt.). MARYLAND - None reported from central area. In Worcester County, one field 29 percent infested; birds have eaten many larvae. (U. Md., Ent. Dept.). INDIANA - Ear infestations average less than 5 percent in southwestern counties. (Everly). MISSOURI - Infestations observed in heads of grain sorghum in west central and northwest areas. Counts in infested fields ranged 3-11 larvae per 100 heads. Several moths observed in most fields checked. (Munson, Thomas, Wood). WISCONSIN - Few third and fourth instars found in commercial sweet corn in northern Iowa County. Populations low and not considered economic. Sustained flights expected in most areas week ending August 16. (Wis. Ins. Sur.). ARKANSAS - Found in 3 of 8 fields of soybeans checked in Lonoke County; 3 per 30 row feet highest number of larvae found. (Sharp). OKLAHOMA - Counts in alfalfa generally light in south central area, with higher counts of 8 per 10 sweeps in Bryan County. Moderate to heavy populations on young grain sorghum heads in Lebanon area of Marshall County (4-12 per head), south central. Moderate activity reported from McCurtain County. Considerable feeding occurring on peanuts in Johnson, Marshall and Pushmataha Counties; plants appear quite "ragged". (Okla. Coop. Sur.). NEW MEXICO - Heavy on field corn in Dona Ana County and a problem on sweet corn in home and truck gardens in Bernalillo County. (N.M. Coop. Rpt.). UTAH - Populations low in central and northern area corn fields. Infestations very low in corn silks examined in Utah and Weber Counties. (Knowlton). IDAHO - Populations low in Canyon County. According to light trap records of a private seed firm, moth collections lower than for several years. (Scott).

ARMYWORM (Pseudaletia unipuncta) - MICHIGAN - Serious infestation reported from Monroe County. Started in ripening oats and moved to nearby cornfield; approximately 5 acres of corn affected and controls recommended. (Laser, Janes, Wells). NEBRASKA - Light to moderate spotted populations causing damage to lower portion of corn plants in central area. (Bergman). CALIFORNIA - Larvae of this species and Junonia coenia heavy in grass pastures in Smartsville, Yuba County. (Cal. Coop. Rpt.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Egg masses found on whorl-stage sweet corn plants at Poughkeepsie on August 2. Infestations of second brood expected to be larger than those of first brood. (N.Y. Wkly. Rpt.). DELAWARE - Three egg masses per 100 corn plants noted in southern New Castle County. (MacCreary, Evans). MARYLAND - Infestations generally light on field and sweet corn. Moths emerged from corn in Frederick County. (U. Md., Ent. Dept.). ALABAMA - This species and Heliothis zea causing severe damage to corn and grain sorghum in Autauga County. (McQueen). OHIO - First emergence of second-brood adults began on/about August 2. (Schurr). MICHIGAN - Second-brood emergence continues. (Newman, Janes). ILLINOIS - In western area, pupation 100 percent and emergence 96 percent. Egg mass counts on field corn ranged 20-500 per 100 plants, with 43 percent fresh eggs, 7 percent developing and 50 percent hatched. In northwest, pupation 91 percent and emergence 75 percent. Egg mass counts range 0-140 per 100 plants. Moths and eggs more common in early fields than in later fields as migration of moths from early fields not yet occurred. (Ill. Ins. Rpt.). IOWA - Early sweet corn on Ankeny farm had 4 percent fifth instar, 5 percent pupae and 91 percent emergence. Late fields actively silking should be treated. (Iowa Ins. Inf., Aug. 5). WISCONSIN - Peak flight of second brood expected August 10-12. Egg laying continues and masses on sweet corn approaching numbers where treatments needed in southern counties. Oviposition varies considerably and is dependent upon stage of corn and population of first generation in area. (Wis. Ins. Sur.). MINNESOTA - Borers per 100 plants 6.5 in south central, 30 in southwest, 4 in southeast, 96 in west central and 10 in central. Development fourth instar to 25 percent emergence in south central, third instar to 5 percent emergence in southwest, fourth instar to 25 percent emergence in southeast, third instar to 9 percent pupae in west central, fifth instar to trace emergence in central, and second instar to 10 percent fifth instar in northwest. Stalk breakage becoming evident in west central district. Infestation high in this area and breakage should be a problem this year. Egg mass counts of second generation low; average per 100 plants 5 in south central, 3 in southwest, 2 in southeast and zero or trace in other districts. (Minn. Ins. Rpt.). SOUTH DAKOTA - Scattered heavy infestations throughout corn-growing areas, although overall infestations lower than at same time in 1962. Development in southeast advanced to pupal and adult stages, with trace of egg masses present. (Hintz). ARKANSAS - From second instars to pupae observed in corn in Lee County, east central area. Infestations heavier than in most years. From 50 to 60 percent of stalks show some type of damage. (Ark. Ins. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Moderate to heavy infestations reported in late-planted corn in extreme southeast area. Some pupation of present brood observed. (Keaster). ARKANSAS - Egg deposition occurring in upper Arkansas River Valley which will give rise to third generation. (Ark. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Causing severe damage to small, late corn in Macon County. (McQueen). OKLAHOMA - Severe locally in Garvin County; destroyed several plantings of broomcorn. (Okla. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Light to moderate in young grain sorghum in Lebanon area of Marshall County; counts 5-17 per head. (Okla. Coop. Sur.).

BLACK CUTWORM (Agrotis ipsilon) - OREGON - Damage to sweet corn general throughout Willamette Valley; 5-10 percent of hills show damage. (Crowell, Ottoway, Beglau).

CORN LEAF APHID (Rhopalosiphum maidis) - OHIO - Increasing rapidly on corn at Wooster; 85 percent of plants infested in same plots, but buildup not apparent on individual plants. Weather conditions favorable for pest. (Schurr). INDIANA - Heavy populations occur in southwest area corn planted late May and early June. (Everly). WISCONSIN - Populations continue to increase on corn and colonies forming on grains. Populations heavy in such scattered areas as Pierce, Waukesha, Kenosha, Marquette, Bayfield, Washington, and many fields in Dane, Green, Rock and Iowa Counties. Some plants in Iowa County browning where heavy infestations occurred earlier. (Wis. Ins. Sur.). NEBRASKA - Infestations in both corn and milo present in Platte River Valley, central area. No economic problem expected. (Bergman). COLORADO - Colonies present on less than one percent of corn in Larimer and Weld Counties and, in most cases, present on plants that developed late. (Jenkins). UTAH - Damaged number of late barley fields in Summit County. (Knowlton, Moore).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Counts per 100 sweeps on rice fields sampled regularly in Lonoke County were 30 adults and 24 nymphs compared with 20 adults and 24 nymphs previous week. Rice beginning to head. Counts of bugs feeding on 100 heads were 4 adults and 2 nymphs. Populations continue more numerous in grassy fields than in clean fields. (Sharp).

CHINCH BUG (Blissus leucopterus) - ALABAMA - Feeding around base of corn and grain sorghum plants in addition to crabgrass and other grasses in Autauga County; 5-30 per plant. (McQueen).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Adults found in Lea County around Lovington. Extent of infestation not known at present; however, extensive survey in future will map spread of insect. (N.M. Coop. Rpt.).

THRIPS - COLORADO - Caused considerable leaf damage to corn and small grains in Weld and Larimer Counties. (Jenkins).

SPIDER MITES - COLORADO - Tetranychus telarius population increases appear to be slowing down, possibly due to recent rainfall and application of controls on some fields in Larimer and Weld Counties. Moderate to heavy populations present on lower leaves of ensilage corn and on upper leaves of picking corn. Populations light to moderate on lower leaves of corn in Mesa and Garfield Counties. (Bulla, Jenkins). IDAHO - T. telarius continues to build up in corn fields in southwestern area. (Scott). WISCONSIN - Tetranychus sp. causing considerable damage to leaves of sweet corn planting in Iowa County. (Wis. Ins. Sur.). NEBRASKA - Unidentified species causing moderate damage to corn in Dawson County. (Bergman).

SPOTTED ALFALFA APHID (Therioaphis maculata) - SOUTH DAKOTA - Populations increasing in southeast area; counts as high as 166 per 100 sweeps on alfalfa in Bon Homme and Charles Mix Counties. (Hintz). NEBRASKA - Counts ranged 3-15 per 10 sweeps (averaged 10) in Custer and Loup Counties. (Bergman). KANSAS - Counts in alfalfa in southern and western areas average 20-25 per sweep. Higher counts of 150 per sweep in Pawnee County and 350 per sweep in Finney County noted. (Peters). OKLAHOMA - Populations down considerably in Garvin and Murray County area from 4 weeks ago. Counts ranged 50-250 per 10 sweeps generally, with most counts from 75-125 per 10 sweeps. (Okla. Coop. Sur.). NEW MEXICO - Generally light in State at present except in isolated areas. Heavy locally in Socorro County. (N.M. Coop. Rpt.). COLORADO - Found on alfalfa in Larimer County for first time this season. Light, ranged 0-100 per 100 sweeps, in area. Also light, 50-100 per 100 sweeps, in Mesa County. (Jenkins, Bulla). UTAH - Remains unimportant in Washington and Kane Counties. (Knowlton). ARIZONA - Remains light in Maricopa County and light to medium in Graham County. (Ariz. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - MINNESOTA - Decreased on alfalfa in all districts except west central. Counts per 100 sweeps averaged 121 in south central, 468 in southwest, 55 in southeast, 54 in central and 1,800 in west central. (Minn. Ins. Rpt.). COLORADO - Light on alfalfa in Larimer and Weld

Counties, 100-200 per 100 sweeps. Remains light in Mesa and Garfield Counties, 200-500 per 100 sweeps. (Jenkins, Bulla). WYOMING - Averaged 425-800 per 100 sweeps in alfalfa in Fremont, Washakie and Big Horn Counties. (Marks). UTAH - Causing some damage in Carbon County, and damaged some second-crop alfalfa in Emery, Uintah, Duchesne and Summit Counties. (Knowlton, Olson).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Infestations heavy in alfalfa-growing areas of State. (N.M. Coop. Rpt.). WYOMING - Adults averaged 80 and nymphs 60 per 100 sweeps on alfalfa in Fremont, Washakie and Big Horn Counties. (Marks). ARIZONA - Averaged 500-1,000 per 100 sweeps in alfalfa near Wellton-Mohawk and 200 per 100 sweeps near Yuma in Yuma County. Slight decrease found in Maricopa and Graham Counties, with counts 10-100 per 100 sweeps. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Increase noted on alfalfa in some counties. Averaged 200 per 100 sweeps near Yuma, Yuma County; 220 in Maricopa County; and 185 in Graham County. (Ariz. Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults averaged 38 per 100 sweeps on alfalfa in Fremont, Washakie and Big Horn Counties. (Marks).

POTATO LEAFHOPPER (Empoasca fabae) - VERMONT - Yellowing of legume forage easily observed in all areas. Adults and nymphs 3-5 per sweep in Addison and Chittenden Counties. (MacCollom, August 5). MARYLAND - Appreciably damaged alfalfa this year; ranged 0-46 (averaged 6) per sweep this week. (U. Md., Ent. Dept.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - MARYLAND - Fifteen to 20 per sweep noted in Howard County. (U. Md., Ent. Dept.).

ALFALFA WEEVIL (Hypera postica) - WYOMING - Larvae still causing damage to second-cutting alfalfa in Washakie and Big Horn Counties. Adult counts averaged 12 per 100 sweeps and larvae 72 per 100 sweeps. (Marks). MARYLAND - Very few larvae in most fields in Frederick, Howard and Queen Annes Counties, but 10 per sweep locally in Frederick County. Few adults also present. (U. Md., Ent. Dept.).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - SOUTH DAKOTA - Adults preventing regrowth of alfalfa in Lake County field. Adults apparently migrated from nearby field of sweetclover after death of plants offered no food. Populations in alfalfa ranged 7-24 adults per square yard. (Hintz).

VETCH BRUCHID (Bruchus brachialis) - MARYLAND - Adults emerged from new crop of vetch, presumably hairy vetch, in Anne Arundel County; 10 percent of seed infested. (U. Md., Ent. Dept.).

BLISTER BEETLES (Epicauta spp.) - WISCONSIN - Adults of E. pennsylvanica plentiful in most alfalfa fields in Dane, Rock, Green and Iowa Counties. Populations of 10 per sweep not unusual. E. pestifera adults present in alfalfa in Iowa, Dane, Rock and Green Counties, but relatively uncommon compared with other species. (Wis. Ins. Sur.). MINNESOTA - E. pennsylvanica appearing in alfalfa; numerous where grasshopper populations high. (Minn. Ins. Rpt.). NORTH DAKOTA - E. pennsylvanica populations building up in margins of alfalfa fields; 1-5 per sweep in Traill and Stutsman Counties. (N.D. Ins. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae present in most alfalfa in southern area. Counts 4-15 per 100 sweeps in Curry and Roosevelt Counties and 8-16 per 100 sweeps in Dona Ana and Luna Counties. Eggs quite easily found in Luna County. (N.M. Coop. Rpt.). WYOMING - Larval counts 8-10 per 100 sweeps on alfalfa in Washakie County. (Marks). ARIZONA - Large adult flights still being seen near alfalfa fields. Larvae beginning to increase in all areas, ranging 10-150 per 100 sweeps. Largest populations reported in Graham County. (Ariz. Coop. Sur.).

WEBWORMS (Loxostege spp.) - KANSAS - Larval counts in alfalfa in southern and western areas less than one per sweep. Moths extremely numerous in most fields examined. (Peters). OKLAHOMA - L. similalis light in scattered south central localities. (Okla. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Counts 3 per 10 sweeps in alfalfa in Bryan County, south central. (Okla. Coop. Sur.).

SPIDER MITES - MARYLAND - Soybeans generally quite clean; small heavily infested spots noted in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Tetranychus atlanticus infestation of soybeans general August 2, but only 4 percent of fields had heavy infestations. (Connell). T. schoenei fairly light on soybeans at Selbyville and Milford. (Mellott). ARIZONA - Tetranychus spp. populations exist in alfalfa near Wellton-Mohawk, Yuma County. Some damage found in Maricopa County fields. (Ariz. Coop. Sur.).

JAPANESE BEETLE (Popilla japonica) - INDIANA - Adult populations in soybean fields high enough to cause economic loss in localized areas of Newton County, northwest area. Counts ranged to highs of 250 beetles per 100 linear feet of row. In adjacent corn, 15-20 percent of ears show adult feeding. (Gould).

LEAF BEETLES (Colaspis spp.) - SOUTH CAROLINA - Locally damaging to soybeans in Marion County. Potential present for serious injury to soybeans in State. (Nettles et al., July 30).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Light on soybeans in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). ARKANSAS - Adults ranged 2-21 per 30 row feet of soybeans in Lonoke County compared with 11-30 previous week. (Sharp).

BEEF ARMYWORM (Spodoptera exigua) - SOUTH CAROLINA - Unusually abundant on and injurious to several late commercial plantings of soybeans in Charleston County during last half of July. Growers reported insect not satisfactorily controlled with insecticides commonly used on that crop. Larvae determined by R.C. Fox. (Reid). FLORIDA - This species and Heliothis zea, Laphygma frugiperda and Trichoplusia ni infesting peanuts at Jay, Santa Rosa County, on July 31. (Boyd).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - This species, Graphocephala versuta and Nezara viridula infesting 10 acres of soybeans at Barrineau Park, Escambia County, on July 31. (Peacock).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Continues light to medium on peanuts in southeast and south central areas. (Okla. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Heavy and warranting control measures on peanuts in Fayette County. (Bippert).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Generally low on soybeans. (Connell). MARYLAND - Few in most alfalfa. (U. Md., Ent. Dept.). ARKANSAS - Ranged 3-30 per 30 row feet of soybeans compared to 4-11 previous week in Lonoke County. (Sharp).

CUTWORMS - SOUTH CAROLINA - Unidentified species unusually abundant in some fields in Charleston County during last half of July and caused serious injury to young soybean plants growing in fields planted to spring-crop tomatoes. (Reid).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - UTAH - Partially defoliated some sage in Roosevelt-Myton area of Uintah Basin. (Knowlton).

FALSE CHINCH BUGS (Nysius spp.) - NEW MEXICO - Heavy populations noted in desert areas on grasses and brush near Newman, Otero County, and on grass spikelets near Corona, Lincoln County. (N.M. Coop. Rpt.). NEVADA - Heavy migrations from drying range vegetation continuing in Washoe, Ormsby and Lyon Counties. (Coop. Rpt.).

IDAHO - Numerous and causing considerable damage to various weeds in some areas of Arena Valley, Canyon County. (Waters).

HAIRY CHINCH BUG (Blissus leucopterus hirtus) - OHIO - Damaging bentgrass lawns at Dalton, northeast area. (Orwick).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Numerous infestations in St. Augustine grass lawns in Chilton County. (Sellers). TEXAS - Few locally heavy infestations appearing on St. Augustine grass lawns in Bryan-College Station area. (Newton, Herwald).

TARNISHED PLANT BUG (Lygus lineolaris) - NORTH DAKOTA - Some buildup evident in flax in Griggs, Barnes and Traill Counties; ranged 1-4 per sweep. (N.D. Ins. Sur.).

FRUIT INSECTS

ORCHARD MITES - VERMONT - Tetranychus telarius populations high in many areas; continued dry weather will favor increase and possible injury. (MacCollom). NEW YORK - Panonychus ulmi sufficiently high in several pear orchards to predispose trees to "pear scorch." P. ulmi reached peak in Cayuga-Onondaga-Oswego county area week of July 29. (N.Y. Wkly. Rpt., Aug. 5). CONNECTICUT - Conditions vary considerably around State. Some growers report P. ulmi increased and T. telarius not a problem; others indicate substantial buildup of T. telarius and decrease of P. ulmi. Careful checking of all blocks urged. Mid-August to late August favorable period of T. telarius buildup. (Savos). NEW JERSEY - Mites continue troublesome on apples; controls recommended. T. telarius serious on peaches at Bridgeton. (Ins.-Dis. Newsltr., Aug. 6). OHIO - Populations of P. ulmi extremely high in some orchards; ranged 35-157 per leaf on untreated trees in Wayne County. T. telarius building up in some areas of county. (Forsythe). MICHIGAN - T. telarius building up to peak on apples in southwestern area; P. ulmi populations appear on decline. (Howitt). COLORADO - T. telarius injuring Bartlett pear foliage in Mesa County; range 1-2 per leaf in light infestations and 20-30 per leaf in heavy. (Bulla). CALIFORNIA - Bryobia rubrioculus occurring on pear trees in Susanville, Lassen County. (Cal. Coop. Rpt.). UTAH - Mites moderately numerous in apple orchards in Price-Helper area, Carbon County. (Knowlton).

APPLE MAGGOT (Rhagoletis pomonella) - VERMONT - Adults still easily found in untreated orchards; growers with known problems should continue control. (MacCollom). NEW YORK - Untreated block of apples infested in Clinton County July 29. Adults active and plentiful in untreated or poorly treated blocks in county. (N.Y. Wkly. Rpt., Aug. 5). CONNECTICUT - Past peak emergence; controls still needed. (Savos). RHODE ISLAND - Peak now past. (Mathewson, King). NEW JERSEY - Adults continue appearance in abandoned orchard at Cranbury; many ovipositing in fruit. (Ins.-Dis. Newsltr., Aug. 6). OHIO - Emergence at peak first week of August in Wayne County. (Forsythe). WISCONSIN - Few adults noted at Gays Mills although none caught in traps. Some also noted in Ashland County. Ammonia bait traps operated July 30 - August 5 yielded 3 adults at Brodhead, 12 at Milton and 42 adults from 2 traps at Madison. (Wis. Ins. Sur.). MINNESOTA - Adults continue to emerge in most areas; however, populations appear quite low. Traps will be maintained through emergence period; growers urged to continue controls on all late varieties of apples. (Minn. Ins. Rpt.).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - On pear trees in Susanville, Lassen County; new county record. (Cal. Coop. Rpt.).

MEALY PLUM APHID (Hyalopterus pruni) - IDAHO - Increasing population in young prune orchard near Parma probably this species. Only one percent of trees in orchard heavily infested with remainder very lightly infested. In second young orchard in same area, only a few trees heavily infested; but decreasing due to attack by lady beetles, green lacewings and flower flies. (Scott).

APPLE APHID (Aphis pomi) - NEW YORK - Noticeable in some mature orchards in Clinton County where sucker growth remains succulent and in young, vigorous orchards especially where some secondary growth occurs. (N.Y. Wkly. Rpt., Aug. 5).

CODLING MOTH (Carpocapsa pomonella) - NEW JERSEY - Second-brood entries appearing in abandoned orchard at Cranbury. (Ins.-Dis. Newsltr., Aug. 6). NEW YORK - Second-brood larval entries noted in treated orchard in Clinton County July 26. (N.Y. Wkly. Rpt.). OHIO - Populations quite low at Wooster, Wayne County; most commercial growers have no problem with control in county. (Forsythe). MICHIGAN - Emergence continues; 53 specimens taken from blacklight trap in Livingston County week ending August 5 and 12 adults emerged from cage with infested apples during same interval in Kent County. (Newman, Gilmore). INDIANA - Third-brood adults emerged August 5 in Vincennes area, Knox County. (Hamilton). MINNESOTA - Second-generation larvae now entering fruit in southeastern area; populations high in La Crosse area. (Minn. Ins. Rpt.). COLORADO - Injury appearing in orchards where cover sprays omitted. (Bulla).

PEACH TREE BORER (Sanninoidea exitiosa) - NEW YORK - Block of 10-year old Montmorency cherries damaged. Some trees failed to leaf out in spring; some declined quickly with mature cherries still hanging. Injury extensive but very few cases of complete girdling. Little or no healing of injury from attacks of previous years noted. Larvae present on August 2 mainly those requiring 2 years for complete development. This is first record of severe injury to sour cherries in State. Evidence indicates considerable proportion of larvae attacking cherry trees required 2 years for development and that cherry trees lack recuperative vigor of peach trees and succumb to lighter infestations. (N.Y. Wkly. Rpt., Aug. 5).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - NEW YORK - Newly hatched second-brood larvae found July 29 in Clinton County orchard. (N.Y. Wkly. Rpt.). NEW JERSEY - Light on Rambo apples in Burlington County. (Ins.-Dis. Newsltr., Aug. 6). WISCONSIN - Second-brood larvae feeding in Gays Mills area August 2. (Wis. Ins. Sur.). MINNESOTA - Larvae causing considerable damage in some orchards; inspection of stem end of fruit for feeding damage urged. (Minn. Ins. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - OHIO - Peak emergence of adults from soil occurred July 29-30; injury to apples major concern for some commercial growers this year. (Forsythe).

PERIODICAL CICADAS - INDIANA - Some eggs still hatching in Vincennes area, Knox County; peak hatch occurred August 1. (Hamilton, Aug. 6).

PEAR-SLUG (Caliroa cerasi) - CALIFORNIA - Larvae very heavy on plum trees in Alturas, Modoc County. (Cal. Coop. Rpt.). NEVADA - Medium to heavy on pear and cherry in Truckee Meadows, Washoe County. (Gallaway). UTAH - Injury increasing on pears and cherries in Salt Lake and Box Elder County home orchards. (Knowlton).

WALNUT APHID (Chromaphis juglandicola) - OREGON - Heavy on English walnuts in Douglas county. (Vertress).

FILBERTWORM (Melissopus latiferranus) - OREGON - Blacklight collections in Lane County much less than in 1962. (Jones).

FALL WEBWORM (Hyphantria cunea) - GEORGIA - Light on pecan trees in northern area. (Johnson).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - First infestation found in commercial vineyard for several years reported in Maricopa County. (Ariz. Coop. Sur.).

GRAPE BERRY MOTH (Paralobesia viteana) - OHIO - Second-brood adults emerged week of August 1 in northern area. (Still).

BLUEBERRY MAGGOT (Rhagoletis pomonella) - MICHIGAN - Adults and egg laying continue a severe problem on blueberries in Grand Junction area. (Howitt).

GRAPE SCALE (Aspidiotus uvae) - OHIO - Caused severe damage to blueberries in Ashtabula County in June. (Rings).

Citrus Insect Situation in Florida - End of July - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 81 percent of groves (norm 71 percent); 66 percent economic (norm 50 percent). Population much above average and will continue in high range through August. Cold-damaged groves have heavier infestations on leaves and fruit than undamaged groves. Highest districts are west coast, Bartow, upper east coast, Brooksville, Orlando, Ridge and Indian River. CITRUS RED MITE (Panonychus citri) infested 72 percent of groves (norm 68 percent); 40 percent economic (norm 43 percent). In cold-damaged groves, population above average and will remain moderately high. In undamaged groves, population peaked at moderate level and will decrease. Highest districts are Orlando, west coast and Brooksville, TEXAS CITRUS MITE (Eutetranychus banksi) infested 61 percent of groves (norm 54 percent); 39 percent economic (norm 31 percent). Statewide population above average. Scattered, high infestations will continue to occur in cold-damaged groves. Infestations expected to decrease in undamaged groves. Highest districts are Orlando, Bartow and Gainesville. PURPLE SCALE (Lepidosaphes beckii) infested 70 percent of groves (norm 71 percent); 14 percent economic (norm 12 percent). GLOVER SCALE (Lepidosaphes gloverii) infested 51 percent of groves (norm 22 percent); 17 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 52 percent of groves (norm 27 percent); 14 percent economic (norm 1 percent). YELLOW SCALE (Aonidiella citrina) infested 25 percent of groves (norm 11 percent); 4 percent economic (norm 1 percent). FLORIDA RED SCALE (Chrysomphalus aonidium) infested 12 percent of groves (norm 62 percent); 1 percent economic (norm 19 percent). BLACK SCALE (Saissetia oleae) infested 42 percent of groves (norm 56 percent); 23 percent economic (norm 33 percent). Statewide population of these scales will drop slightly. Decrease will occur mainly in undamaged groves. In cold defoliated groves, scales will continue to increase from current low level. WHITEFLIES infested 47 percent of groves (norm 52 percent); 16 percent economic (norm 18 percent). Population in cold-damaged groves below average but increasing. In undamaged groves, populations are above average and will remain near current level. (W.A. Simanton, (Citrus Expt. Sta., Lake Alfred)).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Small larvae and pupae remain although closer intervals of control reduced populations on fruit trees in Yuma County. (Ariz. Coop. Sur.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Light on Citrus sinensis at Keyville, Hillsborough County. (Custead).

CITRUS RUST MITE (Phyllocoptruta oleivora) - TEXAS - Moderate and damaging citrus fruits in Cameron County; controls needed. (Tex. Coop. Rpt., Day).

MITES - ARIZONA - Rains greatly reduced populations of Tetranychus spp. and Brevipalpus spp. on citrus in all areas of State. (Ariz. Coop. Sur.).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Larvae causing spotted, severe damage to potato foliage at Fort Fairfield. (Shands). NEW JERSEY - Large numbers in some potato fields in Cranbury area. (Ins.-Dis. Newsltr., Aug. 6). MARYLAND - Larvae very abundant on potatoes at Fairland; few on tomatoes at Fairland and in Queen Annes County. (U. Md., Ent. Dept.). OHIO - Light on eggplants in Avon area, Lorain County; averaged 1 larva per plant. (Slesman).

MICHIGAN - Continues problem on potatoes; medium in Ogemaw County. (Ferris).
NORTH DAKOTA - Trace numbers in potato field near Park River. (N. D. Ins. Sur.).
COLORADO - Causing considerable damage to potato foliage in some fields in Weld County. (Simpson).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Summer-generation adults unusually scarce; trace numbers on potato foliage at Presque Isle and vicinity, Aroostook County. (Shands et al.). MICHIGAN - Adults heavy on research plots at Bath. (Wells, Evans). NORTH DAKOTA - Averaged 10 per sweep on potatoes in Park River area; some treatment underway. (N. D. Ins. Sur.).

TUBER FLEA BEETLE (Epitrix tuberis) - OREGON - Continues extremely low in most potato-growing areas; absence in previously heavily infested areas unexplained. (Morrison).

Wireworm Populations During 1962-63 Fall-to-Spring Season and Their Damage to Potatoes in Vicinity of Charleston, South Carolina, During Spring of 1963:

SOUTHERN POTATO WIREWORM (Conoderus falli) was the only wireworm species in soil in cultivated fields of potatoes in vicinity of Charleston during fall-to-spring season of 1962-1963. Populations varied 0-8.5 and averaged 1.9 larvae per square foot in top 6 inches of soil in 19 untreated fields on 9 farms in Charleston County during October, November and December. At least 16 samples 6 x 6 inches from each field were screened for wireworms. Population of 3 or more larvae per square foot found in only 2 fields. The 1962-63 overwintering population only about 40 percent of the average prevailing during preceding 10 winter (late fall to early spring) seasons. Populations were not so high as usual prior to unusually severe freezes in early December, 1962, and there was a decline of about 67 percent during midwinter in one field under observation. Average of 13.4 percent of tubers grown in untreated plots in wireworm-control experiments in 2 plantings showed injury (feeding of any degree) and 3.8 percent showed "damage" as defined by U.S. Market Standards for potatoes. Proportions of injured tubers from these plots varied 9.1 to 17.7 percent and damaged tubers varied 2.9 to 4.7 percent. Injury and damage to potatoes in spring of 1963 lower than average of 10 preceding springs, but number of untreated plots harvested in 1963 not large enough for adequate comparisons. Approximately 607 coastal shipping-point inspections of commercial crop during June showed 1.1 percent of lots with damage in excess of 6 percent (current tolerance allowance for damage due to all defects for U.S. Number 1 potatoes). Damage of 3-6 percent found in 12.4 percent of lots inspected and damage of 1.5 to 2.9 in 38.7 percent of lots. Most, if not all of lots inspected, were culled at packing sheds before inspection which indicated proportion of tubers damaged in spring of 1963 approximately twice that of 1962 even though a lower wireworm population apparently present in 1963. Drought during May and first half of June possibly resulted in more feeding on tubers. (A. Day, R. G. Prochaska, W. J. Reid, Jr.).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Curly top appearing on home garden tomatoes in Garfield County. (Bulla).

TOMATO PSYLLID (Paratrioza cockerelli) - COLORADO - Not found in economic numbers on potatoes in Saguache, Rio Grande, Alamosa and Costilla Counties. (Jenkins, Aug. 2). Damaging some home plantings of tomatoes in Larimer and Weld Counties. (Jenkins). UTAH - Light to absent in tomato and potato fields. (Knowlton).

GREEN PEACH APHID (Myzus persicae) - NEW JERSEY - Present on older leaves of potatoes in all fields. (Ins.-Dis. Newsltr., Aug. 6). MICHIGAN - Increasing in pepper research plots in Macomb and Ingham Counties. (Janes, Wells). COLORADO - Populations continue decline in early potatoes in Weld County; range 0-200 per 100 leaves. Increasing slowly on late potatoes in county; range 0-16,000 per 100 leaves. (Simpson).

POTATO APHID (Macrosiphum euphorbiae) - WISCONSIN - Becoming noticeable on tomato plants in Kenosha County. (Wis. Ins. Sur.). COLORADO - Present in low numbers on potatoes in Saguache, Rio Grande, Alamosa and Costilla Counties; ranged 0-10 per 100 leaves. (Jenkins, Aug. 2).

Potato Aphids in Maine - Overall abundance on potato foliage not treated with insecticides 2 to 4 times that of previous week at Presque Isle and vicinity, Aroostook County. POTATO APHID (Macrosiphum euphorbiae) increased only slightly. BUCKTHORN APHID (Aphis nasturtii) continues to predominate. Importance of natural control agents increasing rapidly, including fungus diseases and insect parasites and predators. Summer dispersal form of especially A. nasturtii now in flight much more abundant than at this time in several years. In commercial fields, unusually heavy infestations of aphids in some potato fields reported in central Aroostook County. (Shands et al.).

TOMATO HORNWORM (Protoparce quinquemaculata) - WISCONSIN - Total of 282 larvae collected from 162 tomato plants in Sauk County. Other growers in area probably with similar problems. Adult catches higher than in recent years. (Wis. Ins. Sur.). ARIZONA - Larvae, probably this species, defoliating many tomato plants in Graham County; low numbers on tomatoes in Maricopa County. (Ariz. Coop. Sur.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Pepper growers notified to tighten control schedules; second brood continues. (Newman, Janes).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MICHIGAN - Light to medium in Sanilac, Eaton and Ogemaw Counties. (Sowerby, Johnson, Ferris). ALABAMA - Heavy on older lima beans; new infestation on late southern peas and beans in Chilton and Covington Counties. (Helms, Wilkins, Cox, Stephenson). UTAH - Infestations normal in Salt Lake County. (Knowlton).

BEAN APHID (Aphis fabae) - OREGON - Serious on lima beans and sweet corn in Umatilla County at Milton-Freewater. (Duncan).

COWPEA APHID (Aphis craccivora) - MARYLAND - Curling leaves of lima beans in Dorchester County. (U. Md., Ent. Dept.).

STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - DELAWARE - Causing leaf drop in home plantings of lima and pole beans in Sussex County; also present along margins of some commercial plantings of lima beans but generally confined to small areas. (MacCreary, Evans).

CABBAGE LOOPER (Trichoplusia ni) - NEW JERSEY - Noted on cabbage and broccoli. (Ins.-Dis. Newsltr., Aug. 6). DELAWARE - Common on small plantings in Sussex County. (MacCreary, Evans). MARYLAND - Damaging cabbage at Fairland; adults abundant in tomato field in Worcester County. (U. Md., Ent. Dept.). NEW MEXICO - Problem in Bernalillo and Sandoval Counties on cabbage and cauliflower plants. (N. M. Coop. Rpt.).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW JERSEY - Noted on cabbage and broccoli. (Ins.-Dis. Newsltr., Aug. 6). MARYLAND - Damaging cabbage at Fairland. (U. Md., Ent. Dept.). WISCONSIN - Larvae causing considerable damage to cabbages in home gardens. Many plantings nearly half striped; incidence probably statewide. (Wis. Ins. Sur.). NORTH DAKOTA - Adults, eggs and larvae present on cabbage in Fargo and Grand Forks areas; damage moderate. (N. D. Ins. Sur.). NEW MEXICO - Problem on cabbage and cauliflower plants in Bernalillo and Sandoval Counties. (N. M. Coop. Rpt.).

CABBAGE MAGGOT (Hylemya brassicae) - OHIO - Caused severe damage to turnips in truck crop planting in northeastern area; although soil treatment applied in spring of 1962, turnips averaged 3 larvae per root. (Sleesman).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Heavy on collards in home gardens in Covington County. (Stephenson).

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Adults, eggs and larvae present on sugar beets since July 27; larvae remain at low level. (N. D. Ins. Sur.). MINNESOTA - Larvae extremely rare in Red River Valley. (Minn. Ins. Rpt.). WYOMING - Larvae averaged 2 per 100 sugar beet plants in fields of Fremont, Washakie and Big Horn Counties. (Marks).

- SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Larvae found in 8 sugar beet fields of Washakie County; averaged 3 per square foot. (Marks).
- FALSE CHINCH BUG (Nysius ericae) - COLORADO - Nymphs, believed this species, very numerous on ground in sugar beet field in Montrose County. (Hantsbarger).
- MELON APHID (Aphis gossypii) - OKLAHOMA - Heavy and killing melon vines in Woods County, northwest; heavy in Rush Springs area, Grady County, south central. (Okla. Coop. Sur.).
- A SAP BEETLE (Stelidota geminata) - ALABAMA - Numerous, 10-50 per fruit, feeding under decaying melons on ground in Chilton County. (Wilkins, Cox).
- AN EARWIG (Euborellia sp.) - CALIFORNIA - Adults medium and damaging ripening cantaloups in Mendota, Fresno County. (Cal. Coop. Rpt.).
- ONION THRIPS (Thrips tabaci) - NEVADA - Light to moderate on onions in Lyon County. (Coop. Rpt.). UTAH - Discoloring onions locally in Weber County. (Knowlton).
- AN ERIOPHYID MITE (Aceria peucedani) - IDAHO - Heavy on carrot umbels during flowering season in southwestern area. High populations always associated with distorted growth of shroud and umbel; growth resembled 2,4-D damage. (Scott). This is the first ARS record for State.
- ARGUS TORTOISE BEETLE (Chelymorpha cassidea) - NORTH CAROLINA - Present on sweetpotatoes in Currituck County. (Hardesty, Robertson).
- A MINT FLEA BEETLE (Longitarsus waterhousei) - OREGON - Found on mint in Malheur County for the first time of record. (Morrison).
- CUTWORMS - ALABAMA - Undetermined species attacking tomatoes, sweetpotatoes, cantaloups, southern peas and petunia plants in home garden in Chilton County. All tomatoes touching ground on unstaked plants being destroyed; control measures failed. (Helms, Wilkins, Cox). COLORADO - Considerable tuber damage to potatoes believed caused by Agrotis ipsilon in Weld County. (Simpson). OREGON - Peridroma saucia continues increase in Willamette Valley. Economic damage to table beets and bush beans common. (Crowell).
- POTATO LEAFHOPPER (Empoasca fabae) - VERMONT - Prevalent on beans. (MacCollom). NEW JERSEY - Very damaging in one potato field and present in others. (Ins.-Dis. Newsltr., Aug. 6). MICHIGAN - Light to medium in Ogemaw and Ottawa Counties. (Ferris, Van Klompenberg). NORTH DAKOTA - Trace, 3 per sweep, noted in Park River and Cavalier areas. (N. D. Ins. Sur.).
- SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - MICHIGAN - Light to medium in Ogemaw and Ottawa Counties. (Ferris, Van Klompenberg).
- LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 32 per 100 sweeps in sugar beets and 44 per 100 sweeps in bean fields of Washakie and Big Horn Counties. (Marks).
- BLISTER BEETLES (Epicauta spp.) - OKLAHOMA - Heavy in home gardens in Pushmataha County. (Okla. Coop. Sur.). TEXAS - Completely defoliated tomatoes locally in Hays County. (Tex. Coop. Rpt.). GEORGIA - E. pennsylvanica heavy on tomatoes locally in Walton County. (Johnson). ALABAMA - E. pestifera light on tomatoes and several other plants in Macon and Lee Counties. (Barwood, Davis et al.). OHIO - E. pestifera infesting garden vegetables in Fayette and Franklin Counties. (Holdsworth).
- TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NEW JERSEY - Heavy on blackberries in Atlantic City. Troublesome in tomato fields in Burlington County; controls urged. (Ins.-Dis. Newsltr., Aug. 6). KANSAS - Destroyed 3-acre planting of watermelons in Riley County. (Hall).

TOBACCO INSECTS

HORNWORMS (*Protoparce* spp.) - MARYLAND - Very light on tobacco. (U. Md., Ent. Dept.). WISCONSIN - Larvae of *Protoparce quinquemaculata* present but not plentiful on tobacco in southern Dane County; adult catches higher than in recent years. (Wis. Ins. Sur.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Small numbers on 20 percent of tobacco plants. (U. Md., Ent. Dept.).

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - At a standstill or declining in St. Marys County; one-third of plants lightly infested on 19 tobacco farms. (U. Md., Ent. Dept.).

CAROLINA GRASSHOPPER (*Dissosteira carolina*) - WISCONSIN - Noted feeding in tobacco plantings. (Wis. Ins. Sur.).

TERMITES - NORTH CAROLINA - Undetermined species found at bases of tobacco plants in Orange County; one row involved. (Shelton, Mount).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Percent punctured squares 8 and 12 in two Bladen County fields; 6 in Robeson County field; 50 in one field in Columbus County; and 3 in Scotland County field. (Lee, Bowers, McIntyre, Read, Mount, Johnston; Aug. 2). SOUTH CAROLINA - Migration into some Piedmont areas indicated. No mass movement of weevils noted. Practically all squares punctured in fields not treated or where regular schedules not followed. (Cott. Ltr., Aug. 5). Emergence of second generation at peak in Florence area and causing rapid increase in infestation in both untreated and inadequately treated fields. (Taft et al.). GEORGIA - Percent punctured squares in 30 northeast, north and northwest area fields checked ranged 0-62 (averaged 18). (Johnson). Percent punctured squares in 19 counties (31,000 acres of cotton) ranged 1-10 in 33 percent of fields, 11-25 in 31 percent of fields, 26-50 in 23 percent of fields and over 50 in 11 percent of fields. (Jordan, Aug. 6). ALABAMA - "Hatch outs" and overlapping "hatch outs" somewhat general in areas and fields previously experiencing reasonable infestations. Fields in Dallas, Pickens, Montgomery, Lee and other counties south of Birmingham area showed considerable square infestation, especially where rains interfered with controls. Infestations north of Birmingham continue light. Considerable controls being applied in counties south of Birmingham experiencing buildups. Percent punctured squares by county 30-80 in Monroe, 1-30 in Pickens, 1-2 in Madison, 2-43 in Montgomery, 10-12 in Chilton, 13-30 in Dallas, 5-60 in Henry, 10 in Talladega, 0-20 in Cherokee, 4-45 in Lee and 3-25 in Tallapoosa. (McQueen et al.). TENNESSEE - "Hatch out" of third-generation weevils occurring in southern tier of counties in western area. Infestations vary widely from field to field, with not all fields infested. "Hot spots" common. Percent punctured squares ranged 1-31 (averaged 10) in infested fields. Average percent punctured squares 7 previous week and 63 at same time in 1962. Some grub mortality noted. Some local migration occurring. (Locke). ARKANSAS - Activity continues to increase. Of 6,342 fields scouted, 570 would warrant controls. Increased activity expected during coming weeks. (Wkly. Cott. Ins. Rpt., Aug. 2). LOUISIANA - Infestations climbing rapidly in many Tallulah area fields, especially where squares becoming scarce. Young weevils present in blooms in many fields. Some field movement of weevils occurring as squaring slackens in older fields. (Smith et al.). MISSISSIPPI - Infestation light to medium in delta area, and in Attala, Choctaw, Copiah, Monroe and Quitman Counties; controls applied. (Ouzts). Punctured squares found in 30 of 49 fields checked in delta counties. Percent punctured ranged 0.3-93.3 and averaged 18.6 in infested fields. Eleven fields had infestations over 10 percent. Third-generation weevils numerous in some fields. Local movement occurring in vicinity of heavily infested fields and fields "cutting out". (Pfrimmer et al.). TEXAS - Infestations generally light to moderate in northwest below the Caprock except in Dickens, Fisher and Culberson Counties where some heavy infestations observed. Above the Caprock, populations

appear to be static in eastern Floyd County, but increasing somewhat in eastern Crosby County. (Rummel). OKLAHOMA - Populations generally continue at low level, but high populations exist in scattered south central areas. Infestations 3-17 percent in southwest, 3-25 percent in south central (high infestations 52 percent in Bryan County, 85 percent in Johnston County and 90 percent in Garvin County) and 1-3 percent in Major County, northwest. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - NORTH CAROLINA - Not found in an examination of 50 terminals in Scotland County field. (Johnston, Aug. 2). SOUTH CAROLINA - Continue to damage cotton. (Cott. Ltr., Aug. 5). Infestation increasing slowly in Florence area. (Taft et al.). GEORGIA - Egg counts in 30 fields checked in northeast, north and northwest areas ranged 0-14 per 100 terminals (averaged 4). Larval counts ranged 3-12 per 100 terminals (averaged 6) in same areas. (Johnson, Aug. 7). Eggs per 100 terminals in 19 counties (31,000 acres of cotton) checked by scouts ranged 1-10 in 18 percent of fields, 11-25 in 40 percent of fields, 26-50 in 26 percent of fields and over 50 in 12 percent of fields. Larvae per 100 terminals in same fields ranged 1-3 in 32 percent of fields, 4-10 in 34 percent of fields, 11-25 in 15 percent of fields and over 25 in 6 percent of fields. (Jordan, Aug. 6). FLORIDA - Lightly infesting cotton at New York Community, Santa Rosa County, on July 30. (O'Farrell). ALABAMA - Infestation moved up to extreme high ratios in central area where weather prevented routine controls. Appearing heavy in young cotton in several counties, otherwise infestations not approached intensity of past 1 to 5 years. Moths of *Heliothis zea* plentiful in most areas whereas very few *H. virescens* found. (McQueen et al.). TENNESSEE - Small larvae becoming more numerous over western area; larvae averaged 4 per 100 terminals in infested fields. Many fields need controls to prevent future boll damage. (Locke). ARKANSAS - Activity continues to increase. Egg and larval counts in southeast, central and northeast increased over previous week. Number of fields with above 6 percent damaged squares higher than previous week in southeast, central and northeast, but lower in southwest and upper Arkansas River Valley areas. Percent of fields infested 77.1 compared with 64.8 previous week and 67.4 at same time in 1962. Bollworms expected to exert pressure to or past September 1. Fourth-generation moth emergence should be evident by August 9. Egg counts should increase sharply by week after next. (Wkly. Cott. Ins. Rpt., Aug. 2). Large numbers of larvae being collected and submitted for species determination. Only 41 larvae determined since last report; all *H. zea*. (Ark. Ins. Sur.). LOUISIANA - Terminal egg and larval counts remained generally light in Tallulah area, but some square damage and few larvae present in most fields. Apparently, controls will be necessary until September. (Smith et al.). MISSISSIPPI - Light to medium in delta area, and in Attala, Choctaw, Copiah, Monroe and Quitman Counties; controls applied. (Ouzts). Bollworm-injured squares found in 42 of 49 fields checked in delta counties. Percent injured squares ranged 0.3-5.3 and averaged 1.3. Very few eggs or young larvae found. Moth flight dropped off sharply. Next brood of moths should start emerging from soil within next few days, with peak expected about August 15-20. (Primmer et al.). OKLAHOMA - Populations continue static with highest counts in irrigated cotton. Counts ranged 4-20 percent (mostly 6-8 percent) in southwest; 2-30 percent (mostly 6-8 percent) in south central; and 3-4 percent in northwest. Highest reports 20 percent in Greer County (irrigated cotton), southwest, 15-21 percent in Marshall and Jefferson Counties, south central, and 30 percent in untreated experimental plots in Grady County, south central. High counts reported from Pawnee County area, north central. Considerable egg laying observed in south central area. (Okla. Coop. Sur.).

BOLLWORM (*Heliothis zea*) - TEXAS - Light to moderate populations present throughout northwest and heavy populations appearing in areas of Dickens and Fisher Counties as well as in Culberson County in west Texas. (Rummel). NEW MEXICO - Building up in Roosevelt County cotton. Many growers treating in Pecos Valley. Young larvae noted in terminal growth and eggs of all stages plentiful in Dona Ana County. (N. M. Coop. Rpt.). ARIZONA - Increases found in nearly all areas, particularly in Graham and Maricopa Counties. Counts averaged 15-20 per 100 sweeps in Maricopa County and as high as 16 per 100 sweeps in Graham County. (Ariz. Coop. Sur.). CALIFORNIA - Populations appear to be increasing in Kern County. Economic levels observed in Rosedale area, while below treatment levels

persist in Arvin. Marginal control obtained in some fields. (Black, Aug. 2). More larvae and larval damage can be found in Tulare County; however, populations continue below treatment level. Larvae less than one-half inch long. (George, Aug. 1). Few larvae found in all areas of Fresno County, but populations continue below treatment level. (Ferris, July 27).

COTTON LEAFWORM (Alabama argillacea) - ARKANSAS - Light, noneconomic infestation observed in Arkansas River Valley in north Logan County, west central area. Larvae found in untreated field. Only 1,300 acres of cotton growing in this area which is quite distant from other cotton. (Ark. Ins. Sur.). TEXAS - Low numbers reported from Lynn County. (Rummel). NEW MEXICO - One adult and one egg noted on cotton in southern Dona Ana County. (N. M. Coop. Rpt.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Populations either remained constant or decreased slightly in all areas. Controls applied to few fields in Yuma and Pinal Counties. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - ALABAMA - Considerable buildup noted on farm in Autauga County; various instars and pupae present. Larvae also feeding on smooth and spiny pigweed throughout cotton-producing areas. Newly hatched brood of larvae in groups of 50-200. (McQueen et al.). ARIZONA - Small populations found in Maricopa County. Infestations too spotty for accurate counts. (Ariz. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - TEXAS - Moderate to heavy infestations present in some Swisher County cotton fields. (Rummel).

CUTWORMS - ALABAMA - Undertermined species reported in CEIR 13(32):920 in Elmore County appearing in large numbers, 1-17 per hill of cotton, in Chilton, Elmore, Autauga, Macon and Lee Counties. Some damage to maturing bolls noted on lower limbs in extra good, skip-row cotton in Autauga County. Some boll rot expected where light feeding occurred on surface of maturing bolls. (McQueen et al.).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - No apparent serious increase noted except in irrigated cotton in Macon County. Early instars reoccurring in Autauga County cotton where older forms destroyed 2 weeks ago by diseases; however, numerous adults also reported just prior to killing of larvae by disease. Some isolated spots of disease appearing in Dallas County. (McQueen et al.). MISSISSIPPI - Very few larvae found in field in delta counties. A heavy moth flight underway at present according to light trap collections. (Pfirimmer et al.). OKLAHOMA - Beginning to "rag" cotton in Pawnee County. (Okla. Coop. Sur.). NEW MEXICO - Light traps in southern Dona Ana County yielded quite a few adults. Young larvae appearing in fields checked. (N. M. Coop. Rpt.). ARIZONA - Light infestations found in Pinal and Maricopa Counties. All specimens collected near Eloy, Pinal County, diseased. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Small larvae and "flags" reported in Wellton-Mohawk area of Yuma County. Few larvae found in Maricopa County but very spotty. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults and nymphs continue numerous enough in cotton fields to cause serious damage. Populations remained constant in Pinal and Graham Counties. Nymphal buildups reported in Wellton-Mohawk area of Yuma County. Adults and nymphs increased in Maricopa County causing 45-50 percent damaged squares. (Ariz. Coop. Sur.). CALIFORNIA - Counts ranged 10-15 per 50 sweeps in many Kern County fields. Many fields treated. (Black, Aug. 2). Many fields receiving second treatment in Tulare County. Migrations to August 1 apparently not as heavy as in recent years, even next to alfalfa hay. (George, Aug. 1). Populations much lighter in Mendota area of Fresno County than at same time in 1962 and migrations from safflower decreasing. In Tranquillity-San Joaquin area, most fields with populations above economic level being treated. In area north of Firebaugh and south of Dos Palos, economic levels common in lush fields and approaching economic level in more thrifty fields. Nymphs range

2-6 per 50 sweeps. (Ferris, July 27).

COTTON FLEAHOPPER (*Psallus seriatus*) - ALABAMA - This species and lygus bugs continue damaging to cotton in Tennessee Valley and some controls being applied. Present in south and central areas, but apparently not damaging. (McQueen et al.). **TEXAS** - Moderate to heavy populations present in northwest, but most of cotton past most susceptible stages. (Rummel). **OKLAHOMA** - Light populations reported from Harmon County, southwest. (Okla. Coop. Sur.). **ARIZONA** - Slight decrease noted in most cotton. However, some damage still being reported and controls necessary. Counts averaged 4-8 per 100 sweeps in Graham County, 6-12 in Maricopa County and 6-10 in Pinal County. (Ariz. Coop. Sur.).

BLACK FLEAHOPPERS - ARIZONA - Rains and cloudy weather responsible for decreases in Maricopa, Pinal, Yuma and Graham Counties. (Ariz. Coop. Sur.).

STINK BUGS - CALIFORNIA - Few found in most fields of cotton in west side areas of Fresno County; however, populations low and not economic at present. (Ferris, July 27). **ARIZONA** - Small populations of *Euschistus* spp. exist in Yuma and Maricopa Counties; averaged 3-4 per 100 sweeps. (Ariz. Coop. Sur.).

APHIDS - SOUTH CAROLINA - Some medium to heavy infestations present in improperly treated fields. (Cott. Ltr., Aug. 5). **GEORGIA** - Light infestations of *Aphis gossypii* in 30 northeast, north and northwest area fields checked. (Johnson). **TENNESSEE** - Present in many rank fields of cotton and heavier than usual for time of year in western area. (Locke). **ARIZONA** - Heavy infestations of *A. gossypii* still exist in Maricopa, Graham and Yuma County cotton; counts averaged 500-800 per 100 sweeps in Maricopa County and 300-500 in Yuma County. (Ariz. Coop. Sur.).

FIELD CRICKETS (*Gryllus* spp.) - ARIZONA - Numerous in many cotton fields in Maricopa, Yuma and Pinal Counties. Bloom damage running as high as 20 percent in Pinal County. (Ariz. Coop. Sur.).

SPIDER MITES - NORTH CAROLINA - *Tetranychus* sp. causing some defoliation of both ends of small field in Bladen County and fairly heavy infestation present in remainder of field. (Bowers, Aug. 2). **SOUTH CAROLINA** - New areas of infestations continue to be reported from all sections. (Cott. Ltr., Aug. 5). **GEORGIA** - Light to moderate infestations on cotton in 30 northeast, north and northwest area fields checked. (Johnson). **ALABAMA** - Increases reported in Limestone and Madison Counties; locally heavy in Lee County. (McQueen). **TENNESSEE** - More fields becoming infested in western area and sharp increases occurring in older infested fields. Some infestations very severe. Conditions remain ideal for further increases. (Locke). **MISSISSIPPI** - Light to heavy, isolated infestations of *Tetranychus* spp. in delta area and in Quitman County; controls applied. (Ouzts). **CALIFORNIA** - Continue serious in Kern County, with populations common in tops of plants. Several cases of poor control observed on large plants. (Black, Aug. 2). Many complaints involve poor spider mite control in Tulare County. Some growers allowing populations to become quite heavy before applying controls. (Black, Aug. 1). Controls necessary in 40-50 percent of fields north of Firebaugh and into Dos Palos area of Fresno County. Populations generally light in Firebaugh area, with *T. pacificus* being dominant species. (Ferris, July 27).

Weather of the week ending August 12 (continued from page 940)
pour of 4 1/2 inches in 50 minutes, both on the 9th. Also that day, Stillwater, Oklahoma, had straight winds recorded at 138 m.p.h. On the 9th and 10th, rains in New Mexico ranged to 1 inch. A severe squall on the 11th at a small airport just south of West Palm Beach, Florida, was accompanied by winds to 115 m.p.h., many planes sustained damage. Also on the final day, the Central Park station in New York City measured 4/10 inch of rain from a 5 minute downpour. (Summary supplied by U.S. Weather Bureau).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Considerable new infestation noted in 30 acres of 4 and 5-year-old loblolly pine in Macon County; 10-80 percent of tips infested. Infestation very low in a nearby planting. (McQueen).

SPRUCE BUDWORM (Choristoneura fumiferana) - MICHIGAN - Appears to be general throughout southern part of State. (Janes).

PINE TUSSOCK MOTH (Dasychira plagiata) - MINNESOTA - Moth emergence about complete in east central and central districts. Some eggs hatched; first-stage larvae on needles around egg masses. Most hatching still to occur. (Minn. Ins. Rpt.).

PINE TIP MOTHS - ARKANSAS - Few plantations damaged by second generation; most serious infestations in northwest, with few spot infestations elsewhere. Increased tree vigor, as result of ample moisture, will allow trees to tolerate heavier attack, but at same time provide more current year's growth for larvae to feed on. Moth numbers expected to decline as full-grown larvae enter diapause for winter. (Ark. For. Pest Rpt., Aug.).

A PINE NEEDLE-SHEATH MINER (Zellaria haimbachi) - OREGON - Needle browning very noticeable on many pines in Jackson County. (McLaughlin).

AN OLETHREUTID MOTH (Petrova luculentana) - COLORADO - Larvae damaging pine in Douglas County. (Hantsbarger).

WHITE-PINE WEEVIL (Pissodes strobi) - NEW YORK - Serious infestations noted on white pine Christmas tree plantings at various locations throughout State. Pupae most prevalent. (N. Y. Wkly. Rpt., Aug. 5).

PINE BARK BEETLES - ARKANSAS - Rains in southern and central areas resulted in increased tree vigor, slowing spread of bark beetle infestations; however, many residual infestations remain which will continue to cause concern until advent of cold weather. Ips spp. activity centered in area bounded by Sheridan, Pine Bluff, Hamburg, El Dorado to Malvern. Scattered and light infestations observed in southwest and in Greenwood-Mena area. Most sites ranged 1-6 trees, but in few areas up to one acre involved; 70 trees of saw log size infested near El Dorado. (Ark. For. Pest Rpt., Aug.). ALABAMA - Dendroctonus terebrans attacking several ornamental pines in Chilton and Macon Counties; mostly due to injury or stacking of lumber nearby. (Gibbons, Wilcox, Cox).

BARK WEEVILS - ARKANSAS - Hylobius pales and Pachylobius picivorus remain active, but no serious damage reported. H. pales normally dominant in numbers; however, P. picivorus dominant past few weeks in large burn near Hampton, and apparently prefers feeding on below-ground parts of trees. (Ark. For. Pest Rpt., Aug.).

A PINE LEAF APHID (Pineus pinifoliae) - NEW YORK - Outbreak in 6 to 8-foot plantation near Malone, Franklin County, will be of some concern to growers in area during 1964. Crawlers presently settled on new growth. (N. Y. Wkly. Rpt., Aug. 5).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - COLORADO - Numerous on pine in Boulder County. (Jenkins). UTAH - Moderately severe on some blue spruce at Vernal and Naples, Uintah County. (Knowlton).

BALSAM GALL MIDGE (Cecidomyia balsamicola) - MICHIGAN - Injury reported from number of areas in Upper and Lower Peninsulas. (Mattson, Butcher).

CONIFER SAWFLIES - MINNESOTA - Middle and late instars of Neodiprion lecontei feeding. Diprion similis first-generation cocoons show 80 percent adult emergence; cocoon parasitism appears low. Second-generation adults still active with early stage larvae common throughout range. (Minn. Ins. Rpt.). WISCONSIN - Neodiprion lecontei pupated in Dane County. Report from Juneau County indicates severe local infestation in few ornamental pines. (Wis. Ins. Sur.). ARKANSAS - Second larval brood of Neodiprion lecontei usually observed in light numbers. Small plantations in northwest area with up to 10 percent of trees partially or entirely defoliated by unspecified species; lighter infestations observed in Hempstead County. (Ark. For. Pest Rpt., Aug.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Light to heavy in poplars and elms, with occasional infestations found in pecan trees, in Valencia, Socorro, Bernalillo and Dona Ana Counties. (N. M. Coop. Rpt.). MINNESOTA - Lightly distributed throughout northern portion of State on birch, aspen, apple, cherry and alder. (Minn. Ins. Rpt.). INDIANA - Troublesome in Vincennes area, Knox County; easily found on trees and shrubs in southern area and eastward. (Cleveland, Aug. 6). OHIO - Nests abundant on walnut and wild cherry; larvae about half grown in northern part of State. Populations in northeast much lower than in 1962. (Rings). MISSOURI - Infestations observed on persimmon, hickory, walnut and other trees throughout central, north central and northwest areas. (Munson, Thomas, Wood). NORTH CAROLINA - Infesting pecan in Caldwell County. (Culp, Robertson; Aug. 2). ALABAMA - Very light on pecan, persimmon and sweetgum in Chilton, Autauga, Montgomery, Macon and Russell Counties. Considerable numbers again appearing in Mobile County. (Seibels et al.).

GYPSY MOTH (Porthetria dispar) - CONNECTICUT - The 1963 defoliation survey showed the following percent defoliation by county. Acreage under 50 percent defoliated: Fairfield, 40; Hartford, 2,950; Litchfield, 17,450; Middlesex, 10,745; New Haven, 820. Acreage over 50 percent defoliated: Fairfield, 0; Hartford, 970; Litchfield, 5,465; Middlesex, 480; New Haven, 1,220. Total acres defoliated 40,140; of this total, 32,005 acres less than 50 percent defoliated and 8,135 acres over 50 percent defoliated. (Johnson, July 30). MICHIGAN - No adults found in traps to August 9 in survey areas of Clinton, Eaton, Ingham, Ionia and Shiawassee Counties. (Carlson, Ring).

CATALPA SPHINX (Ceratonia catalpae) - ALABAMA - Small broods noted on 2 trees in Macon County; none noted in Chilton, Autauga, Montgomery, Elmore, Macon, Lee or Russell Counties. Reports indicate pest has been present in fewer numbers than normal this season, except first generation which appeared in April and May. (McQueen).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - RHODE ISLAND - First roadside infestations of year noted in Exeter and South Kingstown, Washington County. Larvae average centimeter in length. (Mathewson, Sorensen).

WESTERN OAK LOOPER (Lambdina fiscellaria somnaria) - OREGON - Defoliation of white oak in Willamette Valley occurring over much wider area than in 1962. (Larson).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - ARKANSAS - Infesting approximately 600 acres in Waldron area, Scott County. (Ark. For. Pest Rpt., Aug.).

NOTODONTID MOTHS (Datana spp.) - WISCONSIN - Larval feeding by either D. integerrima or D. perspicua not noticeable in areas where larvae abundant in other years. Blacklight trap catches of Datana spp. very low. (Wis. Ins. Sur.).

TIGER SWALLOWTAIL (Papilio glaucus) - COLORADO - Defoliating ash trees in Larimer County. (Hantsbarger).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OREGON - Completely defoliating many elms in Jackson and Josephine Counties; infestation heaviest in 5 years. (Berry). CALIFORNIA - All stages medium on elms in Rio Vista, Solano County. (Cal. Coop. Rpt.). NEW MEXICO - Much lighter this year in areas where Chinese elms completely defoliated other years in northern part of Albuquerque, Bernalillo County. (N. M. Coop. Rpt.). TEXAS - Scattered, heavy populations causing partial to complete defoliation of elms in areas of northwest section of State. (Newton). OKLAHOMA - Eggs continue to hatch in Stillwater area, Payne County. (Okla. Coop. Sur.). MISSISSIPPI - Heavy on elm in Oktibbeha County; controls applied. (Ouzts). ALABAMA - Damaging numerous elms in Chilton, Autauga and Elmore Counties. (Wilkins, Cox, Kirkpatrick). MARYLAND - Damaged Chinese elms in Anne Arundel County. (U. Md., Ent. Dept.).

IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) - MICHIGAN - Infesting willow windbreaks in Shiawassee and Oakland County muck fields. (Sloat, Janes).

LOCUST LEAF MINER (Xenochalepus dorsalis) - OHIO - Caused considerable damage to black locust in Montgomery County. (Adams). Damage generally severe in south central part of State. (Rings).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - OHIO - Collected on oak in Tuscarawas County, for a new State record. (Galford).

POPLAR-AND-WILLOW BORER (Sternochetus lapathi) - MARYLAND - Two adults collected in Carroll County. This is a new county record. (U. Md., Ent. Dept.). NEW JERSEY - Egg laying will begin soon. (Ins.-Dis. Newsltr., Aug. 6).

A CERAMBYCID BEETLE (Prionus sp.) - ARIZONA - Numerous around trees, especially paloverde trees, in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

PAINTED MAPLE APHID (Drepanaphis acerifoliae) - CALIFORNIA - Heavy on silver maples in Dinuba, Tulare County. (Cal. Coop. Rpt.).

WOOLLY ALDER APHID (Prociphilus tessellatus) - ALABAMA - Extremely heavy on alders in Macon and Russell Counties. (McQueen).

WALKINGSTICKS - ARKANSAS - Populations continue active along high ridges in Ouachita Mountains. (Ark. For. Pest Rpt., Aug.).

MIMOSA WEBWORM (Homadaula albizziae) - MISSISSIPPI - Heavy on mimosa in Oktibbeha County; controls applied. (Ouzts). MISSOURI - Damaging mimosa and honeylocust in central and east central areas. (Munson, Thomas, Wood). OHIO - Light infestation observed at Poland, Mahoning County. This is a new county record. (Kelly, Walker). Infesting honeylocust in Lucas County. (Jones). ALABAMA - Continues heavy on most mimosas in Chilton, Autauga, Montgomery and Elmore Counties. (Wilkins, Cox, Kirkpatrick).

BAGWORM (Thyridopteryx ephemeraeformis) - MISSISSIPPI - Medium on evergreens in Choctaw County; controls applied. (Ouzts). MARYLAND - Locally injurious on arborvitae and white pine. (U. Md., Ent. Dept.). ALABAMA - Light to medium on few arborvitae and cedar in Chilton County; infestations numerous in Autauga County. Heavy on redcedar and Arizona cypress in Dale County. (Wilkins, Cox, Kirkpatrick, West).

AILANTHUS WEBWORM (Atteva aurea) - WISCONSIN - High adult numbers currently being caught in Platteville blacklight trap, Grant County. (Wis. Ins. Sur.).

LILAC BORER (Podosesia syringae syringae) - OKLAHOMA - Killing lilac bushes in Pauls Valley area, Garvin County, (south central). (Okla. Coop. Sur.).

A SHIELD BEARER (Coptodisca arbutiella) - OREGON - This species and Marmara arbutiella more abundant than previous years on madrone trees in Jackson County. (McLaughlin).

A GEOMETRID MOTH (Coryphista meadi) - CALIFORNIA - Larvae medium on mahonia in Florin, Sacramento County. (Cal. Coop. Rpt.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - NEVADA - Infestations localized on home ornamentals in Reno area, Washoe County. (Cooney).

MARGINED BLISTER BEETLE (Epicauta pestifera) - ALABAMA - Light populations noted at several localities in Macon and Lee Counties; feeding in small groups on clematis and nightshade. (Barwood, Davis et al.).

THREE-LINED POTATO BEETLE (Lema trilineata) - CALIFORNIA - Medium on Jimsonweed in the Pala Mission, San Diego County, and heavy on Chinese-lantern plants in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

A JAPANESE WEEVIL (Pseudocnecorhinus bifasciatus) - DELAWARE - Localized feeding on chrysanthemum, firethorn, azalea and spirea noted in Newark, New Castle County. (MacCreary, Evans).

A WEEVIL (Brachyrhinus rugosostriatus) - CALIFORNIA - Heavy on cedar trees in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

APHIDS - UTAH - Thecabius populiconduplifolius folded many poplar leaves at Myton, Duchesne County. Now largely controlled by pirate bugs. Unspecified species extremely numerous on willow leaves at Park City, Summit County; associated with heavy ant populations. (Knowlton, Aug. 1). MINNESOTA - Various species present on many plants in nurseries, including junipers, fruit trees and small fruit plants. Roses in gardens developing problem where aphid controls neglected. (Minn. Ins. Rpt.).

COCCIDS - NEW JERSEY - Unaspis euonymi crawlers active on euonymus and pachysandra. (Ins.-Dis. Newsltr., Aug. 6). TEXAS - Heavy, local populations of Icerya purchasi damaging pittosporum plants in Caldwell County. (Tex. Coop. Rpt.; Massey). ARIZONA - Saissetia oleae causing some damage to oleanders in Pima County. (Ariz. Coop. Sur.).

Coccids in Florida - Aonidiella taxus infested Podocarpus sp. at Lakeland, Polk County. (Tyner, McLeod, Aug. 2). Ceroplastes ceriferus severe on Podocarpus nagi at Apopka, Orange County. (Musgrove, Aug. 2). Ceroplastes floridensis moderate on Philodendron pertusum at Altoona, Lake County. (Bentley, July 31). Chrysomphalus aonidium infested Brassaia actinophylla at Maitland, Orange County. (Youtsey, Aug. 2). Diaspis bromeliae moderate on Aechmea sp. at Gotha, Orange County. (Griffith, Aug. 1). Fiorinia theae infested Camellia sp. at Jacksonville, Duval County. (King, Aug. 2). Aspidiotus lataniae infested Brassaia actinophylla at Maitland. (Youtsey, Aug. 2). Lepidosaphes camelliae infested Camellia sp. at Jacksonville. (King, Aug. 2). Pseudococcus citri severely infested 200 citrus trees at Apopka. (Musgrove, Aug. 2). Saissetia hemisphaerica severely infested Dizygotheca elegantissima at Apopka (Musgrove, July 30), and Osmunda sp. at Tampa, Hillsborough County (Hale, July 31). Saissetia oleae severely infested D. elegantissima at Apopka. (Musgrove, July 30).

A PSYLLID (Pachypsylla celtidisinteneris) - ALABAMA - Galls heavy on twigs on ornamental and forest hackberry trees throughout Lee, Macon, Montgomery, Autauga and Elmore Counties. (McQueen).

GLADIOLUS THRIPS (Taeniothrips simplex) - NORTH DAKOTA - Heavy infestation observed in field of gladioli at Grafton, Walsh County. (N. D. Ins. Sur.).

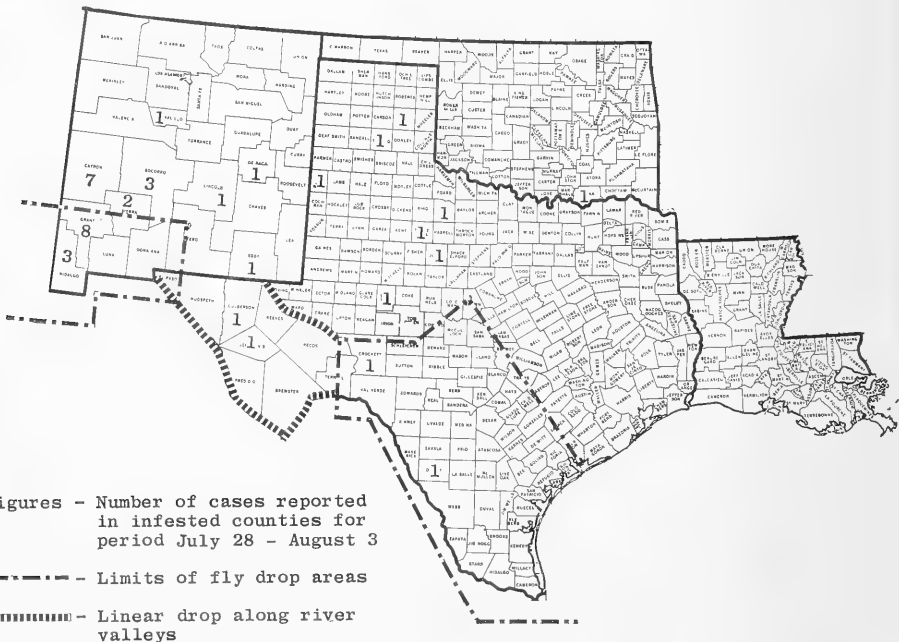
LEAFHOPPERS - COLORADO - These and leafcutting bees damaging rose foliage in Larimer County. (Jenkins). MINNESOTA - Present on many ornamentals with heavy foliage. (Minn. Ins. Rpt.).

SPIDER MITES - UTAH - Unspecified species damaging and discoloring redcedar and other evergreens at Vernal, Uintah County. (Knowlton, Aug. 2). TEXAS - Scattered, heavy infestations of several species on various shade trees in several areas of State causing concern. (Newton). OKLAHOMA - Heavy populations of unspecified species damaging ornamentals throughout State. (Okla. Coop. Sur.). MARYLAND - *Oligonychus ilicis* infesting willow and pin oaks at University Park; all stages on upper leaf surfaces. Injury increasing. (U. Md., Ent. Dept.). OHIO - *Oligonychus ununguis* heavy on arborvitae and juniper in Napoleon, Henry County. (Jones). *Tetranychus telarius* heavy on one acre of *Taxus cuspidata capitata* in Lake County; some new growth being killed. (Kohankie, Kile, Walker).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period July 28 - August 3, a total of 13 infestations was reported from TEXAS, 31 from NEW MEXICO and 1 from OKLAHOMA. Specimens were reported from 12 counties in Texas, 10 counties in New Mexico and 1 county in Oklahoma. Screw-worm was reported for the first time this year from Gray and Red River Counties, Texas, and Bryan County, Oklahoma. A total of 129,423,450 sterile flies was released during the period July 28 - August 3. (Anim. Dis. Erad. Div.).



MOSQUITOES - IDAHO - Particularly Aedes spp., common in southwest area; probably much more abundant than in past few years. (Gittins). UTAH - Extremely numerous at Bluff, San Juan County, and at Myton and Duchesne, Duchesne County; continue troublesome about Price golf course and some town and farm lands in Helper-Wellington area, Carbon County. (Knowlton). Very troublesome in several communities and meadow areas in Emery County, where populations above normal this year. (Knowlton, Olson). Mosquitoes very troublesome in Bridgeland, Myton, Arcadia and Tridell areas of Uintah Basin. (Knowlton). Mosquitoes well under control in Weber County. (Fronk, Knowlton). Controls underway at Logan, Cache County; Brigham City and Tremonton, Box Elder County; control more difficult than usual in Salt Lake County. (Knowlton). TEXAS - Light, widespread populations continue annoying residents in Lubbock County; Culex tarsalis comprises approximately 90 percent of population. (Breedlove). MISSISSIPPI - Psorophora spp. light on livestock in delta counties; controls applied. (Ouzts). IOWA - Populations increasing. Community-wide control programs recommended. (Iowa Ins. Inf., Aug. 5). MINNESOTA - Total of 6,000 female mosquitoes taken in 16 traps during period July 29 to August 3, of which 4,200 were Aedes vexans. Mansonia perturbans taken in 3 of 16 traps and composed 8 percent of total catch. Aedes vexans found in 52 percent of 1,170 larval collections during same period. Culex territans, C. pipiens and C. restuans occurred in 10-12 percent of collections. In 33 evening bite collections, 257 mosquitoes taken; 113 were Aedes vexans and 105 Mansonia perturbans; 91 of latter species taken on one collector. Light trap evidence indicates complete dispersal of brood produced in river bottoms not yet occurred. Considerable annoyance occurring in Ramsey and southern Hennepin Counties, and especially along Minnesota River. (Minn. Ins. Rpt.). VERMONT - Annoying pastured cattle. (MacCollom, Aug. 5).

HORN FLY (Haematobia irritans) - MARYLAND - Rather light; averaged 20 per head at one location. (U. Md., Ent. Dept.). MISSISSIPPI - Heavy on livestock in Hinds County and in delta counties; controls applied. (Ouzts). MICHIGAN - Reported heavy in Sanilac County. (Sowerby, Wells). OHIO - Unusually abundant on dairy cattle at Wooster, Wayne County. (Treece). NEBRASKA - Ranged 50-300 per animal on beef cattle in central area. (Bergman). OKLAHOMA - Populations increased somewhat in Stillwater area, Payne County; remained about same in Kay County (north central) and Garvin County (south central). Light to moderate in Pushmataha County; averaged 200 per head in Jefferson County. (Okla. Coop. Sur.). UTAH - Very troublesome in Emery County, especially in Green River area. (Knowlton, Olson).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Numbers still dominate in many sections; causing problems. (Wis. Ins. Sur.). MICHIGAN - Increasing in Ingham County barns. (Sowerby, Wells). ILLINOIS - Particularly serious on cattle. (Ill. Ins. Rpt.). IOWA - Populations extremely high. (Iowa Ins. Inf., Aug. 5). OKLAHOMA - Counts up somewhat in Stillwater area, Payne County; ranged 2-105 per head (average 8-9). Averaged 15 per head in Pushmataha County. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in Hinds County and in delta counties; controls applied. (Ouzts). MARYLAND - Ranged up to 50 per head in Frederick County. (U. Md., Ent. Dept.).

TABANIDS - UTAH - Unspecified species annoying humans at Oak Park, Uintah County, at elevation of 8,500 feet in Uintah Mountains. Also annoying horses in meadows near Park City, Summit County, and near Heber, Wasatch County. Four species very troublesome to livestock and deer flies extremely annoying to humans in Bridgeland area, Duchesne County. (Knowlton). Deer flies also annoying humans in Scofield Reservoir and Eccles Canyon areas, Carbon County. (Knowlton, Horne). MISSISSIPPI - Tabanus spp. medium on livestock in Hinds County and in delta counties; controls applied. (Ouzts). MARYLAND - Tabanus atratus ranged 1-6 per head on 11 beef cattle in Dorchester County. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - VERMONT - Populations high in all areas; ranged 30-45 per animal August 2. (MacCollom). MARYLAND - Serious; ranged 2-50 (average 14) per head on cattle in central section. (U. Md., Ent. Dept.). OHIO - Remains relatively low in abundance at Wooster, Wayne County, due to

cool weather. (Treece). ILLINOIS - Populations remain low. (Ill. Ins. Rpt.). MICHIGAN - Reported heavy in Sanilac County. (Sowerby, Wells). WISCONSIN - Activity increased, particularly in few areas. Several cases of pinkeye and blindness reported from Pepin and Rock Counties. (Wis. Ins. Sur.). NORTH DAKOTA - Flies suspected as being this species observed on faces of range cattle in Dunn County; up to 20 per animal noted. (Brandvik).

HOUSE FLY (Musca domestica) - CALIFORNIA - Unusually heavy populations reported from residences in many locations over State; this is first season since 1959 species has been a problem. A fungus, Entomophthora muscae, has been instrumental in degree of control in past few years; was present earlier this year, but has not been effective for past 3-4 weeks. (Cal. Coop. Rpt.). UTAH - Moderately troublesome about Price-Helper and Wellington areas, Carbon County. (Knowlton). OKLAHOMA - Populations down in barns in Stillwater area, Payne County, but up on cattle quartered outside. Continues a nuisance in some buildings. (Okla. Coop. Sur.). MICHIGAN - Numbers in barns increasing in Ingham County. (Sowerby, Wells). WISCONSIN - Populations increasing in many areas. (Wis. Ins. Sur.). OHIO - Abundant in dairy barns in Wayne County. (Treece).

BLACK FLIES - IDAHO - Common in many areas of Canyon and Owyhee Counties, but seldom abundant. Large numbers of larvae noted in streams in northwestern Owyhee County may cause concern to cattlemen shortly. (Gittins).

FLEAS (Ctenocephalides spp.) - VERMONT - Prevalent in homes with pets where owners have been on vacation. (MacCollom, Aug. 5). RHODE ISLAND - Complaints of household infestations statewide; indications are that infestations especially heavy. (Mathewson, Cartier).

BEEES, WASPS AND HORNETS - CONNECTICUT - Of concern to many homeowners. (Savos). DELAWARE - Soil-nesting Vespula sp. increasing in north. (MacCreary, Evans). MARYLAND - Vespa sp. of concern in park in Montgomery County. (U. Md., Ent. Dept.). UTAH - Yellow jackets stinging many persons on Buckboard Flats, 9 miles west of Monticello, San Juan County, on Blue Mountain. (Knowlton).

AMERICAN DOG TICK (Dermacentor variabilis) - RHODE ISLAND - Adults still evident in Warwick, Kent County. This rather late in season. (Cartier). NEBRASKA - Heavy on dogs in Loup County. (Bergman).

HOUSEHOLD AND STRUCTURAL INSECTS

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - OHIO - Adults causing annoyance by entering homes in Warren (Holdsworth); entered home near Stryker, Williams County (Jones). WISCONSIN - Probably biggest household problem this season. (Wis. Ins. Sur.). OREGON - Migrating from fescue and strawberry fields into homes. (Bluhm).

DARKLING BEETLES (Blapstinus spp.) - ARIZONA - Recent rains forced migration into homes and other buildings in Maricopa and Pinal Counties. (Ariz. Coop. Sur.). CALIFORNIA - Blapstinus sp. medium; adults invading homes in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

POWDER-POST BEETLES (Lyctus spp.) - NEW JERSEY - Infestations of L. brunneus in bamboo curtains caused several complaints. (Ins.-Dis. Newsltr., Aug. 6). ALABAMA - Lyctus spp. damaged school building at Foley and home at Orange Beach, Baldwin County. (Smallwood, Fairley).

CARPENTER ANTS (Camponotus spp.) - RHODE ISLAND - Problem in Cranston, Providence County, and in Warwick, West Warwick and Coventry, Kent County. (Cartier, Mathewson, Buonaiuto).

ANTS - NEW MEXICO - Heavy in Dona Ana County, especially around homes. Found around any type of foodstuff. (N. M. Coop. Rpt.).

CLOTHES MOTHS - UTAH - Damaging woolens and carpets in Carbon County homes. (Knowlton).

CRICKETS - WISCONSIN - Complaints of field, camel and cave crickets in and around homes increased in recent weeks. (Wis. Ins. Sur.).

EARWIGS - VERMONT - Troublesome in St. Johnsbury and Burlington areas. (MacCollom). UTAH - Forficula auricularia infesting motel rooms at Roosevelt, Duchesne County. (Knowlton).

TERMITES - ARIZONA - Swarming flights very numerous in Maricopa County. (Ariz. Coop. Sur.).

MILLIPEDS - SOUTH CAROLINA - Heavy infestation reported in home in Winnsboro, Fairfield County, July 24. (Nettles et al.).

STORED-PRODUCT INSECTS

GRANARY WEEVIL (Sitophilus granarius) - WISCONSIN - A problem in stored products in Fond du Lac County. (Wis. Ins. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - ALABAMA - Coleomegilla maculata fuscilabris reoccurred in treated cotton fields; feeding more readily on aphids than Hippodamia covergens which dominant prior to treatment. (McQueen). TEXAS - Adalia bipunctata locally moderate on citrus in Cameron County. (Tex. Coop. Rpt.; Day). NEW MEXICO - Probably Hippodamia covergens, congregating in large numbers under bark of trees and in clumps of grass near Gallinas Peak, Lincoln County; generally heavy in all alfalfa plantings in State. (N. M. Coop. Rpt.). COLORADO - Hippodamia spp. larvae numerous on corn (5-10 per plant) where corn leaf aphid present in Weld County. (Jenkins). WYOMING - Adults of unspecified species, per 100 sweeps, averaged 36 in alfalfa, 12 in sugar beets and beans, and 42 per 100 corn plants in Fremont, Washakie and Big Horn Counties. (Marks). NEBRASKA - Hippodamia sp. larvae, pupae and adults present in high numbers in corn in central and eastern areas. (Bergman).

A MELYRID BEETLE (Collops bipunctatus) - COLORADO - Numerous in all areas of State. (Hantsbarger, Jenkins).

A CERAMBYCID BEETLE (Crossidius pulchellus) - NEW MEXICO - Larvae very abundant in roots of turpentine-weed in many areas of Hidalgo, Grant and Dona Ana Counties. Appears to be killing this plant over wide areas. (N. M. Coop. Rpt.).

GREEN LACEWINGS - ALABAMA - Larvae feeding on numerous aphids on many kinds of plants in Mobile County. (Seibels).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults per 100 sweeps averaged 74 in alfalfa, 10 in sugar beets and 6 in bean fields in Fremont, Washakie and Big Horn Counties. (Marks).

BIG-EYED BUGS (Geocoris spp.) - WYOMING - Adults averaged 24 per 100 sweeps in alfalfa in Fremont, Washakie and Big Horn Counties. (Marks).

A BUMBLE BEE (Bombus sp.) - NEVADA - Population increased to 3 per square rod on red clover seed field in Washoe County. (Galloway).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Sudden, heavy emergence reported in Narragansett, Washington County, and in Cumberland, Providence County. Significance uncertain. (Mathewson, Buonaiuto). CONNECTICUT - More numerous than in past weeks, but not as numerous as in previous years. (Savos). NEW YORK - Increased in Hudson Valley, but still relatively scarce. (N. Y. Wkly. Rpt., Aug. 5). MICHIGAN - Infestation continues heaviest in Battle Creek area; traps being moved to delimit infested area. All accessible brush areas in and near center of infestation treated to control adults. Treatment has reduced beetle population an estimated 60-70 percent. Infestation in Ypsilanti and around margins of treated area in Monroe and Lenawee Counties remains light. (Carlson, Ring).

BROAD-NECKED ROOT BORER (Prionus laticollis) - MARYLAND - Adult collected in Bel Air, Harford County. (U. Md., Ent. Dept.).

A DARKLING BEETLE (Eleodes suturalis) - CALIFORNIA - Specimens collected from trash in Modesto, Stanislaus County. This is a new State record. (Cal. Coop. Rpt.).

CICADA KILLER (Sphecius speciosus) - DELAWARE - Causing a nuisance in lawns in New Castle County. (MacCreary, Evans). MARYLAND - Causing concern to residents in Prince Georges and Calvert Counties. (U. Md., Ent. Dept.). MICHIGAN - Numerous specimens being sent in for determination. (Janes).

ALLEGHENY MOUND ANT (Formica exsectoides) - INDIANA - Number of large mounds noted August 3 about 5 miles southeast of Bedford, Lawrence County. (Zukunft, Cleveland, Matthew).

CORRECTIONS

CEIR 13(13):304 - Second line from bottom of page: Novelsus sp. should read Novelsis sp.

CEIR 13(32):906 - CEREAL LEAF BEETLE - OHIO - Should read: "Six Ohio counties (Williams, Fulton, Lucas, Defiance, Allen and Henry) have recorded infestations. (Porter)."

CEIR 13(32):916 - TWO-SPOTTED SPIDER MITE (Tetranychus telarius - COLORADO - Should read: "Causing considerable damage to beans in Weld County. (Dickens)."

CEIR 13(32):933 - Second line from top of page should read as follows: "... regulated area, by county, as follows: Hocking 1,036; Perry 873; Marion 867; ..."

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on May 31, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

A NOCTUID (Achaea janata (L.)) on mixed foliage in baggage and in cargo at Honolulu, Hawaii.

CITRUS BLACKFLY (Aleurocanthus woglumi (Ashby)) 3 times in baggage; one time each at San Ysidro, California; Miami, Florida; and Laredo, Texas.

MEXICAN FRUIT FLY (Anastrepha ludens (Lw.)) (or probably that species) 69 times; 1 time at San Antonio, Texas; 1 time at San Ysidro and 4 times at Calexico, California; 1 time at Nogales, Arizona; 12 times at El Paso, 7 times at Eagle Pass, 16 times at Laredo, and 25 times at Brownsville, all in Texas; 1 time at Mobile, Alabama; 1 time at New York, New York.

PEACH FRUIT MOTH (Carposina niponensis Wlsm.) 3 times in stores at Wilmington, North Carolina, and at Baton Rouge, Louisiana.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) (or probably that species) 9 times in stores, mail and baggage; 2 times at San Juan, Puerto Rico; 2 times at New York International Airport, New York; 1 time at San Antonio, Texas; 6 times at Honolulu, Hawaii.

ASIATIC RICE BORER (Chilo suppressalis (Wlk.)) in baggage at Honolulu, Hawaii.

ORIENTAL FRUIT MOTH (Dacus dorsalis Hend.) 5 times in baggage in Honolulu, Hawaii.

A WEEVIL (Epicaerus sp., probably cognatus Sharp) in potato in bed of truck at El Paso, Texas.

A CHRYSOMELID (Lema (Quasilema) bilineata Germ.) (so-called "tobacco slug" of South Africa and also recorded for Argentina on some solanaceous plants) with excelsior packing material for melon cargo at New York, New York.

CABBAGE MOTH (Mamestra brassicae (L.)) 4 times in stores; 2 times at New York, New York; 1 time each at Cleveland, Ohio, and San Juan, Puerto Rico.

A TERMITE (Microcerotermes sp., close to fuscotibialis Sjost) in bulbs in baggage at San Pedro, California.

EGYPTIAN COTTONWORM (Prodenia litura (Fab.)) twice in stores at New York, New York.

A NOCTUID (Sesamia nonagriodes Lef.) (a small grain pest in the Mediterranean area) in baggage at San Juan, Puerto Rico.

A STENOMID MOTH (Stenoma catenifer Wlsm.) 1 time in stores and twice in baggage; one time each at Miami, Florida; New Orleans, Louisiana; and New York, New York.

WHITE GARDEN SNAIL (Theba pisana Müller) on marble cargo at San Pedro, California.

LIGHT-BROWN APPLE MOTH (Austrotortrix postvittana (Wlk.)) (and 3 other tortricids - Tortrix excessana (Wlk.), Ctenopseustis obliquana (Wlk.) and Endothenia gentianaeana (Hübner)) with apple cargo at Honolulu, Hawaii.

KHAPRA BEETLE (Trogoderma granarium Everts) 31 times in stores, ship holds and contaminating cargoes of gum arabic, gum karaya, gum hashab, guar gum, "myroballans", cotton cloth, raw cotton, tamarind bean powder and celery seed; 13 times at New

York, New York; 1 time at Philadelphia, Pennsylvania; 2 times at Baltimore, Maryland; 1 time at Norfolk, Virginia; 7 times at Charleston, South Carolina; 1 time at Savannah, Georgia; 1 time at San Pedro, California; 2 times at Seattle, Washington; 3 times at Honolulu, Hawaii.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 691st meeting of the Hawaiian Entomological Society held on July 8, 1963.

SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula) was reported from Kawaihae, Hawaii, on June 13, confirmed June 14. A single adult was found on the Hilo Bay Front Area June 29 on rattlebox (Crotolaria sp.); 3 moderately heavy nymphal infestations on popolo (Solanum nigrum) were found on Kailua-Keahou Kona Coastal Road July 2. This is the first record of this pest on the Island of Hawaii. (C. J. Davis).

AN ENCYRTID (Pseudencyrtus sp.) - Specimens were exhibited which had issued from puparia of a tachinid fly at Waipahu, Oahu, in June. Pseudencyrtus sp. was first reported from Hawaii in 1961 when found as a parasite of puparia of a sarcophagid fly (Parasarcophaga misera). The present record of this wasp as a parasite of a beneficial tachinid fly indicates that it could possibly contribute to the lessening of the effectiveness of beneficial tachinids in the State. (J. W. Beardsley).

A BOMBYLIID FLY (Anthrax distigma) - An empty pupal exuvium of what is believed to be this species was found protruding from a hole in a small mud nest in a keyhole in an unused door at Mapulehu, Molokai, June 26. When nest was opened, it was found to contain remains of an adult vespid wasp (Pachodynerus nasidens). As this solitary vespid species frequently nests in abandoned nests of wasps and other small cavities, it appears likely that the Anthrax distigma larva developed as a predator on a Pachodynerus nasidens larva and/or provisions of the nest. Adults of A. distigma are often noted investigating small crevices in rocks, walls, and other places. (J. W. Beardsley).

GRAY SUGARCANE MEALYBUG (Pseudococcus boninsis) - A culture containing normal, gray colored individuals and an unusual white form of this species was exhibited. The white form was discovered in a cane field on Waipio Peninsula, Oahu, during March, and at first was thought to be a distinct species; however, microscopic examination showed it to be identical with the gray form and breeding experiments showed that both forms interbred readily. The white condition is manifest in adult males as well as females and immature stages. (J. W. Beardsley).

A FLAT BUG (Mezira membranacea) - The undetermined species reported in CEIR 13 (27):773 has been determined as M. membranacea (Fabricius) by R. L. Usinger. This is a common species throughout Southeast Asia, extending from India to New Guinea, and north to Taiwan. The species could become very abundant in forests. This is the first record of the family Flatidae in Hawaii. (D. E. Hardy).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Pasture-Rangeland (Commodity) | IN | Colorado (State or District) | DURING | 1962 (Year) |
|-----------|---|---------------|---------------------------------|------------|----------------|
| A. | Pest or pest complex | Grasshoppers, | crested wheat bug. | | |
| B. | Number of acres ^a produced | (From CRS) | No. | 55,140,340 | |
| C. | Average yield per cow-calf unit ^a | (From CRS) | Units/ | 1.49 cwt. | |
| D. | Price ^b per unit (cwt.) ^c | (From CRS) | \$/ | 25.00 | |
| E. | Acres ^a needing control | | No. | 200,000 | |
| F. | Acres ^a treated | | No. | 14,723 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | .3 | |
| I. | Loss in yield, units per 10 acres/cow-calf ^a | C x H | Units/ | .0044 cwt. | |
| J. | Loss in yield, \$ per 10 acres/cow-calf ^a | D x I | \$/ | .11 | |
| K. | Loss in quality, \$ per 10 acres/cow-calf ^a | | \$/ | negligible | |
| L. | Yield loss for all 10 acres/cow-calf ^a | (E-F) x I | Units | 81.5 cwt. | |
| M. | Control cost, \$ per acre ^a | | \$/ | 2.00 | |
| N. | Control cost for all acres ^a | F x M | \$ | 29,446.00 | |
| O. | Yield loss for all 10 acres/cow-calf ^a | (E-F) x J | \$ | 2,038.05 | |
| P. | Quality loss for all acres ^a | (E-F) x K | \$ | --- | |
| Q. | Combined control cost and losses, | N + O + P | \$ | 31,484.05 | |

Comment: Ten acres have been considered to be the area required to maintain one cow-calf unit through the grazing season.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa IN Colorado DURING 1962
 (Commodity) (State or District) (Year)

| | | | |
|----|--|--|--------------|
| | | Alfalfa weevil, pea aphid, spotted alfalfa aphid, army cutworm, Lygus bugs. | |
| A. | Pest or pest complex | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | 829,000 |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | 2.2 ton |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | 18.00 |
| E. | <u>Acres</u> ^a needing control | No. | 486,623 |
| F. | <u>Acres</u> ^a treated | No. | 201,447 |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | % | 4.7 |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | .1 ton |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | 1.80 |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | .40 |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | 28,517 ton |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | 2.00 |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | 402,894.00 |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | 513,336.60 |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | 114,074.40 |
| Q. | Combined control cost and losses, N + O + P | \$ | 1,030,305.00 |

Comment: Most of the loss and reduction in quality occurred in the Arkansas Valley and on
the Western Slope in Colorado.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Wheat (Commodity) | IN | Colorado (State or District) | DURING | 1962 (Year) |
|---|---|----|---------------------------------|--------|----------------|
| Brown wheat mite, army cutworm, grasshoppers, Say stink bug, wheat curl mite, and grain aphids. | | | | | |
| A. | Pest or pest complex | | | No. | 2,633,000 |
| B. | Number of acres ^a produced (From CRS) | | | Units/ | 20 bu. |
| C. | Average yield per acre ^a (From CRS) | | | \$/ | 1.90 |
| D. | Price ^b per unit (bu.) ^c (From CRS) | | | No. | 148,800 |
| E. | Acres ^a needing control | | | No. | 74,600 |
| F. | Acres ^a treated | | | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | | % | 1.5 |
| I. | Loss in yield, units per acre ^a , C x H | | | Units/ | .3 bu. |
| J. | Loss in yield, \$ per acre ^a , D x I | | | \$/ | .57 |
| K. | Loss in quality, \$ per acre ^a | | | \$/ | .05 |
| L. | Yield loss for all acres ^a , (E-F) x I | | | Units | 22,260 bu. |
| M. | Control cost, \$ per acre ^a | | | \$/ | 2.00 |
| N. | Control cost for all acres ^a , F x M | | | \$ | 149,200.00 |
| O. | Yield loss for all acres ^a , (E-F) x J | | | \$ | 42,294.00 |
| P. | Quality loss for all acres ^a , (E-F) x K | | | \$ | 3,710.00 |
| Q. | Combined control cost and losses, N + O + P | | | \$ | 195,204.00 |

Comment: Treatment of borders for grasshoppers accounts for most of the acres protected.

Mites, drought and disease were factors involved in most of the loss which occurred.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

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PLANT PEST CONTROL
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

PLANT PEST CONTROL

PLANT PEST CONTROL

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Adult GRASSHOPPER surveys completed in Washington, Arizona and New Mexico; surveys in latter State indicate lowest populations in many years. Grasshopper buildup noted on cropland in southwest North Dakota, and damage to various crops continues to occur in areas of Minnesota, Wisconsin, Illinois and Missouri. (pp. 977, 978).

SORGHUM MIDGE found on sorghum along Texas line in Lea, Curry and Roosevelt Counties, New Mexico. Damage evident and many growers treating. Increased CORN EARWORM infestations expected in soybeans in Virginia. (p. 978). NORTHERN CORN ROOTWORM adults causing greater economic damage than previous years in Ohio and lodging of corn severe in isolated spots of McCook County, South Dakota. (p. 979). SPOTTED ALFALFA APHID found for first time since 1956 in Wisconsin, and northern most movement in South Dakota advanced to middle Spink County. Moderate to heavy infestations of the aphid observed in southwest Missouri; and populations heavy on alfalfa in areas of Prowers, Bent, Otero, Crowley and Pueblo Counties, Colorado. Spotted alfalfa aphid moderate to heavy on several fields of alfalfa in Chaves, Eddy and De Baca Counties, New Mexico. (p. 981). JAPANESE BEETLE heavy and causing severe damage to soybeans and defoliation of plums at Wooster, Ohio. (pp. 983, 985). SOUTHERN CORN ROOTWORM moderate on peanuts in Early County, Georgia. (p. 1000).

In Arizona, additional MEXICAN FRUIT FLY specimens collected and specimens of CITRUS WHITEFLY collected on out-of-State shipment of dwarf citrus trees. (p. 983). In Michigan, TWO-SPOTTED SPIDER MITE continues high on orchards in southwestern area, and young larvae of ORIENTAL FRUIT MOTH noted on new growth of peach nursery stock in Van Buren County and on ripening peaches in Allegan County. (pp. 984, 985). PEPPER MAGGOT infesting commercial peppers in Warren, Vance, Franklin and Wake Counties, North Carolina; lots from some fields rejected for canning. (p. 985).

BOLL WEEVIL and BOLLWORMS continue to damage cotton in number of Southeastern and Mississippi Valley areas; controls needed until crop matures. Some movement of weevils noted, but generally below normal. (pp. 989, 990, 1000). CABBAGE LOOPER increasing in areas of Arizona and New Mexico, ranged light to heavy in Georgia and Mississippi, and "ragging" leaves in Coastal Plain of South Carolina. (pp. 990, 1000). COTTON LEAFWORM present statewide in Oklahoma, with some severe defoliation occurring. Pest also reported damaging cotton in parts of New Mexico, Texas and Arkansas. (p. 991). LYGUS BUGS remain economic in New Mexico, Arizona and California; treatments continuing. (p. 992).

Light trap collections and egg mass surveys in southern Carlton County and northern Pine County, Minnesota, indicated very light PINE TUSSOCK MOTH infestation for 1964 except for local area near Sturgeon Lake in Pine County. (p. 992). Webs of FALL WEBWORM extremely heavy on various trees throughout southwest Missouri, and becoming conspicuous in many areas of Virginia and Maine. (p. 993).

HORN FLY populations remain high in several areas and causing concern to ranchers and farmers. HOUSE FLY also increasing and a problem in several States. (p. 997). EUROPEAN EARWIG annoying to homeowners in Idaho, Utah and Maine. (pp. 998, 1000).

DETECTION

A BILLBUG (*Sphenophorus cicatristriatus*) recorded for first time in Washington. (p. 983). WESTERN CORN ROOTWORM adults observed within few miles of North Dakota line in South Dakota. (p. 980). ELM LEAF BEETLE found in Titus County, Texas (new county) (p. 993), and FACE FLY found for first time in 16 North Dakota counties, all in western part of State (p. 997).

CORRECTIONS and ADDITIONAL NOTES

See page 1000

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 996).

Reports in this issue are for week ending August 16, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-AUGUST TO MID-SEPTEMBER 1963

The Weather Bureau's 30-day outlook for the period from mid-August to mid-September calls for temperatures to average below seasonal normals in the northeast quadrant of the Nation with coolest weather over the Great Lakes and northern New England. Above normal averages are predicted for the western third of the country and also along the Gulf and South Atlantic coasts. In areas not specified, near normal temperatures are indicated. Rainfall is expected to exceed normal in a broad zone from the Northern Plains eastward to New England and southward to the Tennessee Valley, as well as in the far Southwest. Subnormal amounts are anticipated over the Southern Plains and central Rockies and also along southern portions of the Atlantic and Pacific coasts, with near normal precipitation in the remainder of the Nation.

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

WEATHER OF THE WEEK ENDING AUGUST 12

Mid-August weather brought unseasonably cool temperatures to much of the Nation east of the Rocky Mountains. Two surges of Canadian air lowered averages to considerably below normal in a large area surrounding the Great Lakes; the largest reported deficiency was 12° at South Bend, Indiana. Numerous daily record lows were set north and east of a line arcing from Minnesota to Kansas to Georgia. Some stations had record low maxima; the high on the 18th at St. Louis, Missouri, was only 60°. Freezing occurred in the central lowlands of Wisconsin. Significant unseasonably warm weather was limited to the Great Basin; Salt Lake City, Utah, logged a 6° departure for the period, one of the largest reported. Temperatures in southern areas of Texas and Florida averaged slightly above normal. A 114° maximum on the 13th at Needles, California, was the warmest reported temperature.

Precipitation was quite general, though highly variable in amount east of the Mississippi River and over the southern half of the Great Plains and Rocky Mountains. Large sections of Texas, Arkansas, Louisiana, New England, Virginia, Ohio, and the Carolinas received only light showers, and serious drought conditions continued in Virginia. Phillipsburg, Kansas, had from 5 to 7 inches of rain which flooded highways around the town on the 12th. On the 14th, Vicksburg, Mississippi, was swamped by 4-1/3 inches in only 2 hours. Stormy weather gave measurable rain to the southwest. An extra heavy storm with unofficial totals of 5 inches caused local flooding near Glendale, Arizona, on the 16th and 17th. In 45 minutes on the 17th, Thrall, Kansas, had a rainfall of 1.41 inches. On the (continued on page 1000)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WASHINGTON - Adult survey just completed shows light to moderate infestation in several eastern counties, with heaviest populations in northern Ferry and Stevens Counties where range populations interspersed with forage crops; Melanoplus sanguinipes dominant with M. bivittatus, M. packardii and Aulocara ellioti also present. (Busdicker). UTAH - Various species spottedly damaging in Cache County. Damage less than during 1962 to August 13. (Knowlton, Burtenshaw). Damaging in several farm and range areas of Kane County. (Knowlton, Hatch). Spottedly very numerous in many parts of Salt Lake County. (Knowlton). ARIZONA - Adult grasshopper survey conducted in 10 central and eastern counties, and Fort Apache Indian and San Carlos Indian Reservations. Moderate to very abundant populations found on 31,800 acres of range in widely scattered locations. (Ariz. Coop. Sur.). NEW MEXICO - Adult grasshopper survey made during July and first two weeks of August indicates lowest populations in many years. Few small areas in eastern part of State where light to moderate infestations exist on rangeland and soil bank land. Voluntary programs on approximately 1,500 acres of cropland and rangeland in vicinity of Chama, Rio Arriba County, and 500 acres of cropland and area surrounding Jicarilla Apache Indian Reservation have been completed. (N. M. Coop. Rpt.). OKLAHOMA - Adult grasshopper survey completed in 12 additional counties. Eight thousand acres in Blaine County infested with 10 or more per square yard. Kay, Kingfisher and Washita Counties had 8-9 per square yard. Beaver, Cimarron, Texas, Garfield, Grant, Harper, Logan and Noble Counties had 1-6 per square yard. Moderate to heavy counts reported on rangeland in Mayes, Ottawa (northeast), Le Flore (east central) and Murray (south central) Counties. (Okla. Coop. Sur.).

MISSOURI - Marginal damage by Melanoplus spp. to crops common throughout southwest. Two fields of corn defoliated by M. differentialis in area. (Munson, Thomas, Wood). NEBRASKA - Adult counts ranged 5-15 per square yard in field margins in some parts of Gage County. M. femurrubrum and M. differentialis approximately 80 percent and 20 percent, respectively, of population. (Bergman). SOUTH DAKOTA - Cropland surveys in south central region of State show grasshopper infestations generally light to threatening. Numerous areas along White River in Washabaugh, Mellette, Jackson and Jones Counties have threatening infestations as well as areas in southern Gregory, Tripp and Todd Counties. Alfalfa and soil bank land main infested habitats; however, some movement into corn noted. (Burge, Zimmerman). NORTH DAKOTA - Grasshoppers building up on cropland in southwest. (N. D. Ins. Sur.). Cropland survey in Morton, Hettinger, Adams, Bowman, Slope, Grant and Sioux Counties showed average of 5 per square yard; M. femurrubrum, M. bivittatus, M. sanguinipes and M. packardii dominant species; M. differentialis also abundant in much of area. Habitats included small grains, cultivated grasses, corn, flax and alfalfa. (Wilson). Adult survey on cropland in Oliver, Mercer, Stark, Dunn, McKenzie, Golden Valley and Billings Counties showed 1-15 per square yard. Habitats included alfalfa, sweetclover, soil bank land, small grain stubble and late flax. M. bivittatus, M. packardii, M. femurrubrum, M. differentialis and M. sanguinipes dominant species. (Brandvik). Cropland survey in Emmons, Logan, Burleigh, Kidder and Wells Counties showed range of 1-20 per square yard, with most counts 4-5 per square yard. M. bivittatus and M. femurrubrum dominant, with some M. sanguinipes also involved. Habitats included alfalfa, flax and small grains. (Colberg). MINNESOTA - Annual adult grasshopper survey started on August 12. Observations in southwest district show threatening to severe populations in eastern Jackson County. Adequate rainfall and lush plant growth kept movement into corn and soybeans down in this county. In central district in Sherburne and Morrison Counties, few fields had 30-60 grasshoppers per square yard. Counts in northern counties of central district generally 0-5 per square yard. In northwest district, almost all high counts in soil bank land and roadsides. Kittson and Marshall Counties have up to 23 per square yard in soil bank land west of U. S. Highway 75. M. bivittatus dominant in these two counties. Few high count fields found in southwestern Norman County; M. femurrubrum dominant. Generally, populations in northwest district ranged 2-4 per square yard. M. bivittatus gravid and beginning to deposit eggs. (Minn. Ins. Rpt.).

WISCONSIN - Extensive damage to various crops resulting as grasshoppers mature. Both *M. femurrubrum* and *M. differentialis* nearly completed development in southern counties. Dissection of *M. femurrubrum* females revealed about 10 percent with egg formation, and mating observed by *M. differentialis*. Populations vary considerably, but in general, most abundant in sandier soils and drier areas of State. Populations appear high in southern Dane, Green, parts of Lafayette, Bayfield, Trempealeau, La Crosse, Sauk, Waushara and Pepin Counties. Numbers in sections of these counties range up to 80 per square yard, although average only about 10-30 per square yard. Injury to variety of crops becoming more evident in heavier grasshopper populated areas. Report from Trempealeau County indicated 50 percent loss of grain in one field of oats, and in a Dane County feed mill, volume of grasshoppers equaled that of oats being milled. Reports from Green County indicated that many new seedings of alfalfa being stripped; 30 percent of leaves in some fields. Noticeable feeding damage to field corn evident in most of these areas. Also, several fields of alfalfa in Juneau County stripped. (Wis. Ins. Sur.). ILLINOIS - Grasshoppers heavy in hay fields in northwest and west sections; 10-20 per square yard common. Late migration from hay fields to corn and soybeans has not occurred as yet. (Ill. Ins. Rpt.). DELAWARE - *M. differentialis* feeding fairly heavy in large soybean field in Sussex County after weeds in surrounding field mowed; nymphs and adults present. (MacCreary).

SORGHUM MIDGE (*Contarinia sorghicola*) - NEW MEXICO - Found in sorghum fields along Texas line in Lea, Curry and Roosevelt Counties past two weeks. Damage evident, most growers treating. (N. M. Coop. Rpt.).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Infestation in ears of sweet corn in Hudson Valley lower than expected so far, but general light infestation due after any hot days in coming week. (N. Y. Wkly. Rpt., Aug. 12). DELAWARE - Adult collections in blacklight traps in Sussex County very low; larval infestations in ears of corn high in some Sussex County fields. (Burbutis, Evans). MARYLAND - Average of 17 percent of corn ears infested in Worcester County. (U. Md., Ent. Dept.). VIRGINIA - No larvae found in 300 ears of sweet corn harvested last of July in Chesterfield, Chesterfield County, where no treatments made. In other years, infestation has been 75-100 percent. (Matheny, Aug. 7). Moths observed in several soybean fields in Gloucester, King William and King and Queen Counties. Increased infestations expected in soybeans since corn maturing rapidly in most sections of State and most soybeans either not blooming at present or just beginning to bloom. Careful checks urged. (Tarpley). FLORIDA - Lightly infesting peanuts at Jay, Santa Rosa County. (Boyd, July 31). OHIO - Most larvae in fourth stage of first generation on August 11 at Wooster, Wayne County. (Schurr). WISCONSIN - Moths being caught in most areas and treatment about to begin in southern counties. (Wis. Ins. Sur.). MISSOURI - Larvae feeding on alfalfa in southwest; 0-11 per 10 sweeps. (Munson, Thomas, Wood). ARKANSAS - Ranged 0-18 per 30 feet of row in soybeans in Lonoke County. (Sharp). Infestations in soybeans should be watched, especially where cotton begins to mature and is less attractive to moths. (Ark. Ins. Sur.). OKLAHOMA - Moderate to heavy population doing considerable feeding on peanuts in Caddo County area. Heavy infestation of 18-20 per sweep (all stages) noted on alfalfa in Ripley area of Payne County, north central. Light on alfalfa in Garvin County. Heavy, isolated infestation reported on grain sorghum in Kiowa County, southwest. (Okla. Coop. Sur.). UTAH - Counts very low in Salt Lake County sweet corn. Many home gardens with no infestations. Blacklight trap counts at Ogden and Salem continue low. (Knowlton). ARIZONA - Larvae averaged 5-7 per 25 corn plants in Graham County; feeding on embedded tassels. (Ariz. Coop. Sur.).

FALL ARMYWORM (*Laphygma frugiperda*) - MICHIGAN - Light infestation of late-stage larvae found August 13 infesting corn in pretassel stage in Ingham County; only about 30 stalks involved indicating egg laying by a single female. This is first report for season and very early record for State. (Janes, Newman). NEW YORK - Found infesting whorls of corn at Geneva on August 7; about 1 percent of whorl-stage plants infested in Hudson Valley on August 9 and 10. Both

small and large larvae found. (N. Y. Wkly. Rpt., Aug. 12). DELAWARE - Attacking late plantings of sweet corn in areas of Sussex County (MacCreary) and adult collections numerous in blacklight traps in county (Burbutis, Evans). VIRGINIA - Severely infesting late corn in Lexington, Rockbridge County. (Tarpley, Strecker). Medium, spotted infestations on field corn at Boones Mill, Franklin County, and feeding on whorl and stalk of field corn locally in Albemarle County. (Rowell, Welch, Smith; Aug. 5). Feeding on whorl and on tender leaf area of field corn in Dahlgren, King George County. (Rowell, Hall; Aug. 8). MISSISSIPPI - Medium on corn in Oktibbeha County; controls applied. (Ouzts). ARKANSAS - Ranged 0-7 per 30 feet of row in soybeans in Lonoke County. (Sharp). OKLAHOMA - Heavy on grain sorghum in Major County, southwest. Also active on grain sorghum in Craig County area, northeast. (Okla. Coop. Sur.).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Larvae damaging Sudan grass and pearl millet in Worcester County. (U. Md., Ent. Dept.). WISCONSIN - Reported causing a problem in milling of newly combined Columbia County small grain grown for seed during week of August 5. (Wis. Ins. Sur.). ILLINOIS - Reported attacking grassy corn locally. (Ill. Ins. Rpt.). MICHIGAN - Locally light infestations in Calhoun and Ionia Counties; parasitism by tachinid flies noted. (Rowe, Pryor).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NORTH DAKOTA - Pupating in Ellendale area, Dickey County. (Colberg). SOUTH DAKOTA - Adults laying eggs in north central and northeast regions of State. Borer populations in area higher than in any other part of State. (Hintz). MINNESOTA - Development by district as follows: Central - 15 percent fourth instar, 54 percent fifth instar, 23 percent pupa and 8 percent emergence; east central - 8 percent third instar, 38 percent fourth instar, 54 percent fifth instar; north central - 40 percent fourth instar, 50 percent fifth instar, 10 percent pupa; northwest - 20 percent third instar, 50 percent fourth instar, 30 percent fifth instar. Number of borers per 100 corn plants 21 in central, 27 in east central, 35 in north central and 40 in northwest. (Minn. Ins. Rpt.). WISCONSIN - Despite relatively high numbers of moths in flight, egg laying not too high generally. Treatments continuing in some southern area commercial plantings. Very low numbers of eggs found in Sauk, Columbia, Washington and Sheboygan Counties. Counts in Rock and Green Counties revealed 6-12 egg masses per 100 plants in field corn although a late planting in Green County had 44 egg masses per 100 plants. First and second instars of second generation found in Green and Sauk Counties. Observations in Sheboygan County indicated that 40 percent of larvae in fifth stage, 20 percent in fourth, 30 percent in third and 10 percent pupae. (Wis. Ins. Sur.). ILLINOIS - Peak moth emergence occurred in northern sections. Egg mass counts in northwest averaged 80-100 per 100 plants on late maturing field corn and 10-40 per 100 plants on early maturing fields. Egg laying expected to continue for 2-3 weeks in area. (Ill. Ins. Rpt.). OHIO - Moths in flight August 11 at Wooster, Wayne County. (Schurr). MARYLAND - Very light in Frederick, Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Adult collections high in blacklight traps in Sussex County, with highest single night's collection to August 16 being 78 on August 13. (Burbutis, Evans). NEW YORK - Moths of second brood appear light in Hudson Valley; ears of harvested sweet corn virtually free of infestation where silk treatments not applied. Second-brood infestations may be light since hatching level is low. (N. Y. Wkly. Rpt., Aug. 12). MAINE - Moderate populations and damage to corn in Orono and Monmouth; light in Auburn area. (Boulanger, Aug. 10).

SOUTHWESTERN CORN BORER (*Zea diatraea grandiosella*) - ARIZONA - Medium infestations in corn beginning to tassel in Graham County; larvae 6-8 per 25 stalks. (Ariz. Coop. Sur.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - SOUTH DAKOTA - Adults high, 3-20 per plant, in scattered fields in McCook County. Lodging severe in isolated spots in several fields. (Hintz). OHIO - Adults causing greater economic damage than in previous years. Spot checks showed 2-17 per ear in Wyandot County and 6 per ear in Seneca County, north central area. (Blair).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Adults observed in corn fields in north central and northeast regions of State, but not in damaging numbers. Adults observed within few miles of North Dakota in Brown County. Populations in field in Aurora County quite high, 3-12 adults per stalk, with evidence of some larval damage occurring earlier this season. (Hintz).

A CORN ROOTWORM (Diabrotica undecimpunctata tenella) - ARIZONA - Few adults found on corn in Chino Valley, Mohave County. Soil insecticides prevented large buildups in area. (Ariz. Coop. Sur.).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Surveys along fringe of known infested area resulted in no new finds. Apparently surveys after adults enter quiescent period rather difficult. (Ring, Terrill).

DUSKY SAP BEETLE (Carpophilus lugubris) - MARYLAND - Average of 27 percent of field corn ears infested in Worcester County, 3 percent in Howard County and none noted in Frederick County. (U. Md., Ent. Dept.).

A BILLBUG (Sphenophorus callosus) - VIRGINIA - Report of Sphenophorus sp. in CEIR 13(26):705 from Virginia determined as this species by R. E. Warner. (Tarpley).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW YORK - Most important insect of sweet corn in Hudson Valley; some controls applied. (N. Y. Wkly. Rpt., Aug. 12). MARYLAND - Conspicuous locally; 100 percent of plants infested in Queen Annes County field and observed in 35 per cent of Frederick County fields. (U. Md., Ent. Dept.). WISCONSIN - General decrease observed in southern area due to combination of rain, parasites and predators. Observations in Sauk County revealed 8 percent of corn with colonies on leaves. In Washington County, area southwest and west of West Bend had infestations of 70-80 percent, with about 10 percent of corn having colonies of 500 or more. Most in whorls and top leaves and some wilting occurring. Populations lower north of town, but in Sheboygan County, populations about 90 percent, with 8 percent of plants having colonies of 500 or more. Some treatments applied in Washington County. Some fields in Kewaunee County turning yellow where 500 or more aphids per plant present. (Wis. Ins. Sur.). IDAHO - Barley fields in Fremont and Teton Counties generally infested; barley yellow dwarf disease evident. (Portman). NEW MEXICO - Moderately heavy infestations reported on broomcorn in Bethel area, Roosevelt County. (N. M. Coop. Rpt.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - IDAHO - Common in all fields of wheat in Fremont and Teton Counties; however, plants near enough to maturity that no damage anticipated. (Portman).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Surveys of 18 rice fields in Lonoke County show very little change from previous week. Counts per 100 sweeps averaged 27 adults and 24 nymphs. Number feeding on 100 heads of rice averaged 4 adults and 2 nymphs. Bugs present in all fields; none being treated. (Sharp).

CHINCH BUG (Blissus leucopterus) - NEBRASKA - Adults causing serious damage to corn in Colfax County. (Bergman).

A LEAFHOPPER (Cuerna costalis) - FLORIDA - Lightly infesting 5 acres of corn at Greenwood, Jackson County. (Tipton, Aug. 8).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Present on corn in some areas of Otero, Crowley, Pueblo and Weld Counties. Populations very high and severe burning of corn leaves occurred. In some areas, populations reduced by predators and rainfall. (Schweissing, Jenkins). UTAH - Injury to field and sweet corn increasing in Salt Lake County; damage conspicuous on outer rows. (Knowlton).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - First specimens of year found near Brodhead, Green County, on August 6. These are first found in State since 1956. Several fields of alfalfa in area infested; counts ranged from 1 per 50 sweeps to 2 per sweep. Winged forms also present. Fields checked in area indicate that as of August 14, infestation apparently confined to within 5-mile radius of Brodhead on flat, sandy soil and primarily in thinner stands of alfalfa. The 1956 infestation was first found in Rock County, which adjoins Green County, in October. (Wis. Ins. Sur.). SOUTH DAKOTA - Northernmost movement of pest advanced to middle Spink County; counts 4 per 100 sweeps. (Hintz). NEBRASKA - Ranged 3-17 per 10 sweeps (averaged 11) in Greeley, Nance, Sherman and Valley Counties, and ranged 5-15 per 10 sweeps (averaged 13) in Gage County. (Bergman). Ranged 8-12 per sweep in counties along Kansas border from Red Willow County east to Webster County. Over 50 percent of population winged. (Hill). MISSOURI - Moderate to heavy infestations observed on alfalfa in southwest; ranged 5-40 per sweep. (Munson, Thomas, Wood). OKLAHOMA - Light in south central area (30 per 10 sweeps), with higher counts (200 per 10 sweeps) noted in Major County, northwest. Populations of 50-75 per 10 sweeps noted in Payne County, north central. (Okla. Coop. Sur.). COLORADO - Populations heavy on alfalfa in areas of Prowers, Bent, Otero, Crowley and Pueblo Counties. Counts as high as 10,000 per 100 sweeps, although generally between 2,000 and 7,500 per 100 sweeps. In areas of heavy rainfall, populations temporarily reduced. In Larimer, Weld, Adams and Boulder Counties, counts 0-50 per 100 sweeps and higher populations present in foothills area of Boulder and Larimer Counties. (Schweissing, Jenkins). NEW MEXICO - Moderate to heavy infestations found in several alfalfa fields in Chaves, Eddy and De Baca Counties. (N. M. Coop. Rpt.). ARIZONA - Light on alfalfa in Graham and Yavapai Counties. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - NEVADA - Low populations present in Orovida and Kings River Valley, Humboldt County, alfalfa seed fields. (Lauderdale). IDAHO - Populations extremely low in alfalfa in Myrtle, Lapwai and Lewiston areas. (Manis). WYOMING - Increasing on alfalfa in Albany County near Laramie; averaged 3,500 per 100 sweeps. (Marks). COLORADO - Populations not of economic importance at present, with 0-1,000 per 100 sweeps in Prowers, Bent, Otero, Crowley, Pueblo, Weld, Adams, Boulder and Larimer Counties. (Schweissing, Jenkins).

POTATO LEAFHOPPER (*Empoasca fabae*) - NEW JERSEY - Averaged 93 per 25 sweeps with range of 286 in 9 forage fields in central area of State; causing injury in some fields and should be controlled. (Ins.-Dis. Newsltr., Aug. 13). MARYLAND - Ranged 1-2 per sweep in Queen Annes County. Ranged 0-15 and averaged 2.4 per sweep in Frederick County; 13 of 18 fields surveyed treated. (U. Md., Ent. Dept.). MISSOURI - Counts on alfalfa in southwest 3-20 per sweep. (Munson, Thomas, Wood). MICHIGAN - Seventeen adults collected per 100 sweeps in second-cutting alfalfa in Missaukee County indicates very light infestation; in same fields, Lygus lineolaris outnumbered this species 2 to 1. (Janes).

LEAFHOPPERS - NEW YORK - Injury continues to show on forage crops in Ulster County. (N. Y. Wkly. Rpt., Aug. 12).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - FLORIDA - Lightly infesting three 100-foot rows of soybeans at Barraneau Park, Escambia County. (Peacock, Aug. 7). ARKANSAS - Adults 0-5 and nymphs 0-2 per 30 feet of row in soybeans in Lonoke County. (Sharp). ARIZONA - Increases noted on alfalfa in Yuma, Graham, Pinal and Maricopa Counties; averaged 600-1,200 per 100 sweeps in Graham County, 160-600 in Yuma County and 700-800 in Maricopa County. (Ariz. Coop. Sur.).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Very few adults in Frederick County; up to 2 per sweep. (U. Md., Ent. Dept.).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Averaged 30-70 adults and nymphs per 100 sweeps in alfalfa at Ft. Sumner, De Baca County. (N. M. Coop. Rpt.). NEVADA - Low populations, mostly adults, present in Orovida and Kings River Valley,

Humboldt County, alfalfa seed fields. (Lauderdale). Averaged 30 per sweep in Mason Valley, Lyon County, hay fields. (Cooney). IDAHO - L. hesperus and L. elisus extremely abundant in alfalfa in Myrtle, Lapwai and Lewiston areas. Practically entire population adults, averaging 10-12 per sweep. (Manis). WYOMING - Adults of Lygus sp. averaged 42 and nymphs 38 per 100 sweeps in Albany County alfalfa. L. lineolaris adults averaged 20 per 100 sweeps in same county. (Marks).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae increased during week in Yuma and Graham Counties; averaged 100-200 per 100 sweeps in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Abundant on alfalfa in Chaves, Eddy and De Baca Counties. Averaged 18-35 larvae per 100 sweeps in De Baca County alfalfa. (N. M. Coop. Rpt.). COLORADO - Larvae on alfalfa in Larimer, Weld, Adams and Boulder Counties number 10-20 per 100 sweeps. Adults numerous in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Jenkins, Schweissing). WYOMING - Larvae averaged 14 per 100 sweeps in Albany County alfalfa. (Marks). NEBRASKA - Unusually high adult populations present in legumes and roadside areas of northeast. (Hill).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Light on peanuts at Jay, Santa Rosa County. (Boyd, July 31). ARKANSAS - Not found in Lonoke County soybeans. (Sharp). OKLAHOMA - Light on alfalfa in Garvin County, 3 per 10 sweeps; 8 larvae per 10 feet of row on soybeans in Grady County. (Okla. Coop. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - ARIZONA - Larvae numerous and caused considerable damage to alfalfa in Navajo County. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - FLORIDA - Light on peanuts at Jay, Santa Rosa County. (Boyd, July 31). ARIZONA - Increasing on alfalfa in Yuma County. (Ariz. Coop. Sur.).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Heavy infestation observed on alfalfa in Major County, northwest (100 per 10 sweeps). Light in Garvin County, south central, and counts 10-12 per 10 sweeps in Payne County, north central. (Okla. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Almost absent in Queen Annes County. In Frederick County, larvae ranged 0-6.7 and averaged 1.1 per sweep in 18 fields surveyed; damage noticeable in 3 fields. (U. Md., Ent. Dept.). UTAH - Large number of adults appeared in Cache and Box Elder County alfalfa. (Davis, Haws).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - WISCONSIN - Unusually high populations in alfalfa; counts generally 2 per sweep with some as high as 18 per sweep. In most instances, high counts correspond to high grasshopper counts, although blister beetles more constant and occur where grasshoppers scarce. (Wis. Ins. Sur.).

AN ALFALFA SEED CHALCID (Bruchophagus roddi) - ARIZONA - Increasing in seed alfalfa fields in Yuma County; some found in seed alfalfa in Mohave County. (Ariz. Coop. Sur.). UTAH - Appearing, but much less numerous and later than during 1962. (Haws, Davis).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Very light on soybeans in Worcester County. (U. Md., Ent. Dept.). VIRGINIA - Occasional specimen found on soybeans checked in Hanover, Caroline, King George, Westmoreland, Northumberland, Lancaster, Richmond, Essex, Middlesex, King and Queen, King William, Gloucester, New Kent and Charles City Counties. (Tarpley). ARKANSAS - Ranged 0-52 per 30 feet of row in soybeans in 11 Lonoke County fields. (Sharp). NEBRASKA - Adults causing light to moderate damage to soybeans in Colfax County. (Bergman).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Heavy on soybeans in Worcester County field. (U. Md., Ent. Dept.). VIRGINIA - Occasional specimen found on soybeans checked in Hanover, Caroline, King George, Westmoreland, Northumberland, Lancaster, Richmond, Essex, Middlesex, King and Queen, King William, Gloucester, New Kent and Charles City Counties. (Tarpley).

JAPANESE BEETLE (*Popillia japonica*) - OHIO - Populations heavy and causing severe damage to soybeans at Wooster, Wayne County. (Rings). MARYLAND - Noted on silks of corn in 4 of 17 fields examined in Frederick County; populations light. (U. Md., Ent. Dept.). VIRGINIA - Occasional specimen found on soybeans checked in Hanover, Caroline, King George, Westmoreland, Northumberland, Lancaster, Richmond, Essex, Middlesex, King and Queen, King William, Gloucester, New Kent and Charles City Counties. (Tarpley).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - TEXAS - Causing considerable damage to peanuts in Austin County. (Murphey).

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Generally light; heavy in field of soybeans near woods in Worcester County. (U. Md., Ent. Dept.). VIRGINIA - Occasional specimen found on soybeans checked in Hanover, Caroline, King George, Westmoreland, Northumberland, Lancaster, Richmond, Essex, Middlesex, King and Queen, King William, Gloucester, New Kent and Charles City Counties. (Tarpley). ARKANSAS - Larvae 0-28 per 30 feet of row in soybeans in Lonoke County. (Sharp).

BLACK CUTWORM (*Agrotis ipsilon*) - NORTH CAROLINA - Reported damaging peanuts in Northampton and Halifax Counties. *Feltia subterranea* may also be involved, but only specimens of *A. ipsilon* received. (Campbell).

STINK BUGS - NORTH CAROLINA - Very small nymphs collected on leaves of soybeans in Gates County. (Bryant, Mount). ARKANSAS - *Acrosternum hilare* and *Euschistus spp.* each ranged 0-3 per 30 feet of row in soybeans in Lonoke County. (Sharp).

SPIDER MITES - NEW JERSEY - Seriously damaged field of soybeans. (Ins.-Dis. Newsltr., Aug. 13). VIRGINIA - Generally distributed on soybeans on Eastern Shore and causing extensive damage in some sections. (Hofmaster, Aug. 14). DELAWARE - Populations of *Tetranychus atlanticus* and feeding injury in soybeans rather heavy, particularly in Sussex County; populations of *T. telarius* considerably lighter in New Castle County. (Mellott).

A BILLBUG (*Sphenophorus cicatristriatus*) - WASHINGTON - Larvae causing serious damage to lawns in Kennewick, Benton County. This is first record for State. Det. by R. E. Warner. (Klostermeyer).

SOD WEBWORMS - NEW JERSEY - Moths abundant in central area. (Ins.-Dis. Newsltr., Aug. 13). OHIO - *Crambus* sp. caused severe damage to residential lawns at Orrville and Wooster, northeastern area. (Rings, Polivka).

A FIERY SKIPPER (*Hylephila phylaeus*) - CALIFORNIA - Larvae heavy in lawns in Redding, Shasta County. (Cal. Coop. Rpt.).

SPITTLEBUGS - SOUTH CAROLINA - Some damage to Bermuda and other grasses observed in Clemson area. (Cochran, Aug. 7).

A KATYDID (*Steiroxys* sp.) - WASHINGTON - Particularly abundant on rangeland in Klickitat County. (Adlard).

FRUIT INSECTS

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Additional specimens collected in State; 1 male in McPhail trap on July 31 and 1 female trapped August 6. Both specimens found at Nogales within 0.25 mile north of U.S.-Mexican border. (PPC).

CITRUS WHITEFLY (*Dialeurodes citri*) - ARIZONA - Specimens collected on an out-of-State shipment of dwarf citrus trees; alert inspection prevented distribution of pest. (Ariz. Commiss. Agr. Hort.). FLORIDA - Infested satsuma leaves at Glen St. Mary, Baker County. (Collins).

BROWN SOFT SCALE (Coccus hesperidum) - TEXAS - Becoming heavy in small areas of Cameron County; some controls applied. (Tex. Coop. Rpt., Day).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Collected at Plant City (Aug. 1), Wimauma (Aug. 5), Thonotosassa (July 30) and Valrico (July 31), all in Hillsborough County. (Custead).

EUROPEAN RED MITE (Panonychus ulmi) - MAINE - Populations exhibiting surprisingly normal density curve; numbers on check trees in Leeds area rapidly decreasing contrasting with past 3 seasons when numbers increased to rather high levels in August. However, in blocks where controls fair and mites still present, populations could increase in next 2 weeks. (Boulanger, Aug. 10). RHODE ISLAND - Eggs numerous on apple at Warwick, Kent County. (Cartier). OHIO - Bronzing in some commercial orchards continues. (Forsythe). MICHIGAN - Populations show 30 percent decline in numbers on foliage in southwestern research orchards. More noted at calyx end of apples, characteristic for autumn; cool weather believed responsible. This mite still considered problem in commercial orchards in fruit areas. (Pshea, Earl, Mullett).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MICHIGAN - Continues high in southwestern area; counts in research plots show increase still underway. Numbers in fruit areas of northwestern Lower Peninsula moderate. (Pshea, Earl, Mullett).

SPIDER MITES - UTAH - Damaging apples and pears in many Davis, Box Elder, Salt Lake, Cache and Weber County orchards; species largely Tetranychus mcdanieli. (Davis, Knowlton). Injury more severe in many Salt Lake County orchards than in most seasons. (Knowlton, Parrish). WISCONSIN - Undetermined species a problem on apples in Bayfield County. (Wis. Ins. Sur.).

PEACH SILVER MITE (Aculus cornutus) - NEW JERSEY - Infested peach leaves in Hammonton; controls recommended. (Ins.-Dis. Newsltr., Aug. 13).

APPLE MAGGOT (Rhagoletis pomonella) - MAINE - Decreasing rapidly in emergence cages at Highmoor Farm, Monmouth; 99 percent of flies recovered expected to be emerged by August 15-20. (Boulanger, Aug. 10). NEW JERSEY - Ten-day schedule recommended on blueberries where picking continues. (Ins.-Dis. Newsltr., Aug. 13). OHIO - Adults collected in large numbers on stickyboard traps in untreated orchard in Wayne County. (Forsythe). WISCONSIN - Activity nearly ended in southern part of State; activity increased considerably in Door County week of August 2. (Wis. Ins. Sur.). MINNESOTA - Emergence reduced. Orchards with high maggot populations in past seasons should remain covered for additional 2 weeks. (Minn. Ins. Rpt.).

CODLING MOTH (Carpocapsa pomonella) - DELAWARE - Fresh "stings" on Sussex County apples. (MacCreary, Aug. 7). MICHIGAN - Adults continue active; 62 specimens taken in Livingston County blacklight trap week ending August 12. During same interval, 15 adults emerged in Kent County cage. Since August 12, emergence in Kalamazoo County research plots decreased, probably due to cool nights. Recent larvae appearing in Kalamazoo research plots. Entries moderate in Grand Traverse County. (Newman, Gilmore, Pshea, Mullett). INDIANA - Peak hatch of third brood anticipated August 20-30. (Cleveland, Aug. 13). UTAH - Commonly appeared in northern blacklight traps since July 23. (Davis, Knowlton).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - WISCONSIN - Second-brood larvae at high levels in Door County orchards where control of first brood inadequate. (Wis. Ins. Sur.). MICHIGAN - No problems in commercial orchards in southwestern area a unique experience for 1963. (Pshea).

PEACH TWIG BORER (Anarsia lineatella) - CALIFORNIA - Larvae heavy on Nubiana plums in Tipton, Tulare County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - MICHIGAN - Young larvae noted in new growth of peach nursery stock in Van Buren County and in ripening peaches in Allegan County. Protection needed until harvest. (Pshea, Earl).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Adults still emerging in Vincennes area, Knox County. (Cleveland, Aug. 13).

A LEAF BLOTCH MINER (Lithocolletis crataegella) - MAINE - First-generation adults emerged in most areas; damage to some untreated orchards ranged light to moderate. (Boulanger, Aug. 10).

FALL WEBWORM (Hyphantria cunea) - MAINE - Webs appearing in untreated orchards; infestations not as heavy as in 1962. (Boulanger, Aug. 10).

SAN JOSE SCALE (Aspidiotis perniciosus) - CALIFORNIA - Heavy on almond trees in Durham, Butte County. (Cal. Coop. Rpt.).

APPLE LEAFHOPPER (Empoasca maligna) - OHIO - Serious in some Jackson County orchards. (Forsythe).

A LEAFHOPPER (Colladonus geminatus) - UTAH - Constantly numerous in cherry orchards of Utah County from June 15 to present. (Davis, Cox).

PERIODICAL CICADAS - INDIANA - No hatch recorded since August 12 in Vincennes area, Knox County. (Cleveland).

PEAR-SLUG (Caliroa cerasi) - UTAH - Injured pear, cherry and hawthorn at Holladay, Salt Lake County. (Knowlton).

JAPANESE BEETLE (Popillia japonica) - OHIO - Caused severe defoliation of plums at Wooster. (Forsythe).

GREEN JUNE BEETLE (Cotinis nitida) - OKLAHOMA - Damaging fruit in Cleveland County, central area. (Okla. Coop. Sur.).

APHIDS - TEXAS - Moderate numbers are widespread and increasing on pecan trees in Guadalupe County. (Tex. Coop. Rpt., Massey).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Adults now being trapped in southern part of State. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Light in Muskogee County, east central. Also noted in Oklahoma County, central area. (Okla. Coop. Sur.).

A SPIDER MITE (Oligonychus viridis) - TEXAS - Moderate to heavy on pecan trees in Fayette County and moderate in Brazos and Burleson Counties. (Newton).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - FLORIDA - Infesting Vitis sp. at Lake Gem, Lake County. (Brown, Fatic, Aug. 7).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - Adults emerged from pupae taken indoors earlier; adults and eggs expected in southwestern vineyards soon. (Earl).

TRUCK CROP INSECTS

PEPER MAGGOT (Zonosemata electa) - NORTH CAROLINA - Infesting commercial peppers in Warren, Vance, Franklin and Wake Counties; lots from some fields rejected for canning. Of 51 bushels picked from 3 fields, infestation averaged 33 percent in Wake County. Not a pest in same fields during previous 3 seasons. (Mount, Aug. 9).

A LEAF MINER FLY (Liriomyza sp.) - DELAWARE - Mines very numerous in new terminal growth in some tomato fields in Kent County. (Burbutis, Evans).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Larvae caused spotted, severe damage to potato foliage locally. Infestations and damage light on potatoes in Cumberland County. (Boulanger, Aug. 10). NEW YORK - Larvae again numerous in potato fields in Suffolk County; hatching apparently still underway. (N. Y. Wkly. Rpt., Aug. 12). MARYLAND - Few tomato plants heavily damaged in Worcester County; light damage to eggplants in Queen Annes County. (U. Md., Ent. Dept.). COLORADO - Present in some fields and causing considerable defoliation; adults average one per plant or sweep and 3-7 larvae per plant. (Jenkins). IDAHO - Adults and larvae but no eggs found in most fields in Blackfoot area. (Portman).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Infestations and damage moderate on potatoes in Cumberland County and in Orono area. (Boulanger, Aug. 10). DELAWARE - Larval injury to potato tubers, probably caused by this species, considerably more serious this season than in 1962 on some farms in New Castle and Kent Counties. (MacCreary).

HORNWORMS (Protoparce spp.) - MARYLAND - Few eggs on peppers and tomatoes in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Eggs and larvae present on some peppers in Sussex County and adult collections in blacklight traps rather high in this area. (Burbutis, Evans). NEW YORK - Some activity noted in Monroe County. (N. Y. Wkly. Rpt., Aug. 12).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Light to moderate on pepper in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Adults averaged 1 per 100 sweeps in potato fields in Albany county near Laramie; averaged 6 per 100 sweeps on matrimony-vine in Laramie. (Marks).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Increasing on late potatoes in Weld County; 0-50 per 100 sweeps and 0-30 per leaf. Continues high in some remaining early potato fields. (Jenkins, Simpson). MARYLAND - Few on peppers in Worcester County. (U. Md., Ent. Dept.).

Potato Aphids in Maine - Due chiefly to fungus diseases and insect predators, overall populations on untreated potato foliage at Aroostook Farm, Aroostook County, only one and one-third times size of previous week. Averaged 42 aphids of all species on three leaves per plant (top, middle, bottom). Numbers of POTATO APHID (Macrosiphum euphorbiae) dropped sharply; sharp drop of dead, parasitized aphids noted also. BUCKTHORN APHID (Aphis nasturtii) predominates. (Shands et al.).

COWPEA CURCULIO (Chalcodermus aeneus) - VIRGINIA - Severe on southern peas on farm in Kenbridge, Lunenburg County. (Rowell, Waddell, Aug. 7).

BEAN LEAF BEETLE (Cerotoma trifurcata) - VIRGINIA - Few noted on beans in general on Eastern Shore; reduction of yield possible if not controlled. (Hofmaster, Aug. 14).

BEAN APHID (Aphis fabae) - PENNSYLVANIA - Heavy on unprotected beans in Crawford County. (Adams).

CABBAGE LOOPER (Trichoplusia ni) - MAINE - Light numbers and damage in Orono area. (Boulanger, Aug. 10). NEW YORK - Careful surveillance of crucifers for remainder of season recommended. (N. Y. Wkly. Rpt., Aug. 12). PENNSYLVANIA - Light to moderate on broccoli in Crawford County. (Adams). DELAWARE - Larvae fairly common in commercial tomato plantings, particularly in areas of Kent County, and causing moderate feeding injury. (Burbutis, Evans). MARYLAND - Caused light damage to tomatoes in Worcester County. (U. Md., Ent. Dept.). NORTH DAKOTA - Larvae abundant on cabbage and other cole crops over State. (N. D. Ins. Sur.).

COLORADO - Adults active in cabbage fields in Adams and Weld Counties; oviposition underway. (Jenkins).

IMPORTED CABBAGEWORM (Pieris rapae) - MAINE - Caused light damage to broccoli in Orono and Monmouth areas; damage light to cole crops in Cumberland County and in Auburn. (Boulanger, Aug. 10). PENNSYLVANIA - Light to moderate on broccoli in Crawford County. (Adams). NORTH DAKOTA - Larvae abundant on cabbage and other cole crops over State. (N. D. Ins. Sur.).

DIAMONDBACK MOTH (Plutella maculipennis) - PENNSYLVANIA - Light to moderate on broccoli in Crawford County. (Adams).

SALT-MARSH CATERPILLAR (Estigmene acrea) - MAINE - Caused light damage to broccoli. (Boulanger, Aug. 10).

A WEEVIL (Brachyrhinus cribricollis) - CALIFORNIA - Adults heavy on several acres of seedling broccoli in Guadalupe, Santa Barbara County. (Cal. Coop. Rpt.).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Killing squash plants in Stillwater area, Payne County. (Okla. Coop. Sur.). DELAWARE - Nymphs fairly common on pumpkin-squash and canteloup in Sussex County. (Burbutis, Evans).

HORNED SQUASH BUG (Anasa armigera) - DELAWARE - Very common on watermelon locally in Sussex County. (Burbutis, Evans).

SQUASH BEETLE (Epilachna borealis) - VIRGINIA - Larvae light on summer squash in home garden in Providence Forge, New Kent County. (Rowell, Settle, Aug. 5).

SQUASH VINE BORER (Melittia cucurbitae) - VIRGINIA - Larvae severe on mature squash in home garden in Kenbridge, Lunenburg County. (Rowell, Harding, July 29).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Small numbers found in sugar beets in Traill County. (Dogger).

BEEF LEAFHOPPER (Circulifer tenellus) - UTAH - Numerous on Russian-thistle at Green River and Moab in southwestern area. (Knowlton).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MAINE - Caused moderate damage in Monmouth. (Boulanger, Aug. 10). COLORADO - Ranged 12-20 per 100 sweeps on carrots in Weld County; some evidence of aster yellows appearing. (Jenkins).

VARIEGATED CUTWORM (Peridroma saucia) - NEW JERSEY - Caused heavy damage on muck-grown celery in Warren County; protection of young plants recommended. (Ins.-Dis. Newsltr., Aug. 13).

TORTOISE BEETLES (Metriona spp.) - DELAWARE - M. bicolor and M. bivittata very common on small planting of sweetpotatoes in Sussex County. (Burbutis, Evans).

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) - NORTH DAKOTA - Adults feeding heavily on asparagus foliage at Regent. (N. D. Ins. Sur.).

ONION THRIPS (Thrips tabaci) - COLORADO - Light to moderate in Prowers, Bent, Otero, Crowley and Pueblo Counties. Moderate to heavy in Adams, Boulder, Larimer and Weld Counties; 50-200 per plant. (Schweissing, Jenkins).

RASPBERRY CROWN BORER (Bembecia marginata) - MICHIGAN - Severe injury to raspberry roots in Missaukee County possibly due to this species. (Bosserman).

JAPANESE BEETLE (Popillia japonica) - OHIO - Damaging red raspberry foliage at Wooster, Wayne County. (Rings). MARYLAND - Generally quite light this year; damaging raspberry foliage in Queen Annes County. (U. Md., Ent. Dept.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Causing considerable damage to some bean fields in Adams and Weld Counties. (Jenkins). MAINE - Caused moderate damage to raspberries in Cumberland County. (Boulanger, Aug. 10). NEW JERSEY - Building up on strawberries; inspections urged. Continues serious on tomatoes and many other vegetable crops; controls recommended. (Ins.-Dis. Newsltr., Aug. 13).

APHIDS - NEW YORK - Careful surveillance on peppers, eggplant and potatoes recommended for remainder of season. Continue present on potatoes and causing concern in Suffolk County. Becoming serious problem on many Kraut and Danish cabbage fields in Orleans County. Appearing on crucifers in Monroe County. (N. Y. Wkly. Rpt., Aug. 12).

TOBACCO INSECTS

GREEN PEACH APHID (*Myzus persicae*) - VIRGINIA - Nymphs and adults severe in spots in 6-acre field of irrigated tobacco in Pittsylvania County. (Dominick, July 31). MARYLAND - Continues troublesome in St. Marys County on tobacco. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - VIRGINIA - Adults increasing on tobacco, particularly on nonirrigated fields, in Pittsylvania County. (Dominick, Aug. 7). MARYLAND - Big increase noted on tobacco in St. Marys County. (U. Md., Ent. Dept.).

HORNWORMS (*Protoparce* spp.) - VIRGINIA - Larvae light to medium on late tobacco in Pittsylvania County; high percent of larvae *P. quinquemaculata*. (Dominick). MARYLAND - Very few at present on tobacco. (U. Md., Ent. Dept.).

SUCKFLY (*Cyrtopeltis notatus*) - VIRGINIA - Nymphs and adults moderately abundant on tobacco in field in Halifax County. (Hall, Dominick, July 24).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Percent punctured squares August 5-9 were 38 in 4 Bladen County fields (Waters, Bowers, Lee); counts for one field each in Columbus, Brunswick, Pender, Scotland, Union, Sampson and Wilson Counties were 81, 12, 44, 60, 6, 1 and 100 percent, respectively (Read, Bowen, Fedoronko, Savage, Morgan, Mount, Whitmer); counts 80, 6 and 0 in 3 Robeson County fields (Lott, Mears). Percent punctured squares August 12-16 for one field each in following counties were 92 in Columbus (Read), 15 in Brunswick (Bowen), 75 in Robeson (Calhoun), 46 in Scotland (Johnston), 55 in Duplin (Fedoronko), 98 in Wayne (Whitmer), 2 in Union (Savage) and 0 in Iredell (Mount). Three untreated fields in Wilson County same dates had 80-90 percent punctured squares, but treated fields had much lower infestations, 3-4 percent. (Lewis, Mount). SOUTH CAROLINA - Little or no migration reported from areas where intensive cotton insect control programs carried out; however, heavy migration noted in fields where little or no insecticides used. (Cott. Ltr., Aug. 12). Second-generation weevils causing heavy infestations in unprotected fields in Florence area. Percent larval infestation ranged 0.7-19.4 in treated fields and 86.7-95.1 in untreated fields, compared with 39.0-54.0 in treated fields and 95 in untreated fields at same time in 1962. (Taft et al., Aug. 14). GEORGIA - Percent weevil punctured squares in 15 counties (25,000 acres of cotton) August 8-14 ranged 1-10 in 26 percent of fields, 11-25 in 45 percent of fields, 26-50 in 18 percent of fields and over 50 in 11 percent of fields. (Jordan). TENNESSEE - A problem in only very small percentage of fields throughout southern tier of counties in western area. Dry weather causing considerable mortality of larvae. Movement to rank, succulent fields occurring and some boll injury evident in some fields. No large scale migration taking place to north as usually happens at this time of year. Average percent punctured squares in known infested fields 14 compared with 10 previous week. Percent punctured squares ranged 40-100 at same time in 1962. (Locke). LOUISIANA - Controls generally good in Tallulah area, but infestation levels higher where weather conditions interfered with insecticidal application schedules and squaring on decline in older cotton. Many fields "cutting out" rapidly and shedding heavy. Controls needed through remainder of August for boll protection in older fields. (Smith et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Attala, Choctaw, Copiah, Lowndes, Monroe and Quitman Counties; controls applied. (Ouzts). Very little general movement of adults noted in delta counties. Many fields still have no sign of weevils. Punctured squares found in 12 of 28 fields checked. Percent punctures in infested fields ranged from less than 1 up to 72 percent (average 16.6 percent). (Pfrimmer et al.). TEXAS - Light to moderate infestations continue fairly general in rolling plains area below the Caprock. Infestations above the Caprock, in eastern Floyd and Crosby Counties, remain light. (Tex. Coop. Rpt.). OKLAHOMA - Populations remain low in most areas. Infestation counts 0-8 percent in Muskogee County (east central), 6 percent in Major County (northwest), 0-3 percent in Bryan County (southwest), 27 percent in Marshall County (south central), 2-3 percent in Cotton County (southwest) and isolated 26 percent in Jackson County (southwest). (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al) - NORTH CAROLINA - Percent terminals infested August 5-9 were 2 in two Robeson County fields and none found in another (Lott, Mears); 6 in Scotland County field (Johnston, White); and 2 in a Union County field (Savage). During period August 12-16, found in 5 percent of terminals in Robeson County field (Calhoun), 1 percent of terminals in Scotland County field (Johnston) and 4 percent in Duplin County field (Fedoronko). Only occasional egg found in Wilson County during same period. (Mount). SOUTH CAROLINA - Infestations continue to increase in all areas. (Cott. Ltr., Aug. 12). Larval infestation in Florence area 0-14.9 percent in treated fields and 0-6.1 percent in untreated fields. Adults numerous in area. (Taft et al., Aug. 14). GEORGIA - Eggs per 100 terminals in 15 counties (25,000 acres of cotton) August 8-14 ranged 1-10 in 18 percent of fields, 11-25 in 37 percent of fields,

26-50 in 30 percent of fields and over 50 in 13 percent of fields. Larvae per 100 terminals ranged 1-3 in 29 percent of fields, 4-10 in 37 percent of fields, 11-25 in 21 percent of fields and over 25 in 5 percent of fields. Major problem in many counties over State during past week or 10 days has been severe bollworm infestation. Large larvae destroying grown bolls. Protection of crop urged. (Jordan). TENNESSEE - Continues a problem in late, rank cotton. Controls still justified in large number of fields in western area. (Locke). ARKANSAS - More than 1,500 *H. zea* and *H. virescens* larvae from cotton in several areas of State determined. Late June and early July collections 24-50 percent *H. virescens*. Most of these larvae collected in southwest, only area where larvae could be found in numbers. For week of July 15, 20 percent of larvae *H. virescens*. For week of July 22, 4.4 percent of larvae *H. virescens*. For week of August 5, 3.4 percent of larvae *H. virescens*. (Ark. Ins. Sur.). LOUISIANA - Infestations primary problem in Tallulah area at present. Counts show higher egg counts than anytime earlier this season. Rigid control schedules needed next 10-14 days. (Smith et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Attala, Choctaw, Copiah, Monroe, Prentiss and Quitman Counties; controls applied. (Ouzts). New brood of moths began appearing about August 8. Egg deposition increased sharply in many delta fields. Injured squares found in 21 of 28 fields checked. Percent injured squares in infested fields ranged from less than 1 to 15.7 percent (averaged 2.2 percent). Constant threat expected until crop is made. (Pfirmer et al.). OKLAHOMA - Heaviest infestations continue in irrigated areas of southwest, with some high counts also observed in south central (10-60 percent). Other areas of State report light to moderate infestations; 3-4 percent in Major County (northwest), 1-12 percent in Muskogee County (east central), 5-10 percent in Payne County (north central), 10-40 percent in Bryan County (south central) and 60 percent in Marshall County (south central). (Okla. Coop. Sur.).

BOLLWORM (*Heliothis zea*) - TEXAS - Continues to cause severe damage to younger cotton in central, north central and northeast areas. Generally, light to moderate infestations prevail in plains area, but many counties beginning to experience a few heavy, spotted infestations. (Tex. Coop. Rpt.). NEW MEXICO - Growers continue treatment of infested fields in most cotton-growing areas of State. Larvae small and susceptible to pesticides in Dona Ana County. (N. M. Coop. Rpt.). ARIZONA - Increase noted in Maricopa and Pima Counties. Populations remain static in Yuma and Graham Counties. Predators, parasites and timely controls contained populations on White-Wing Ranch in Yuma County. Large increases found in Pinal County; counts up to 120 per 100 plants checked. (Ariz. Coop. Sur.). CALIFORNIA - Populations appear to be increasing; however, economic levels not encountered. (Leigh, Aug. 7). In Cantua area of Fresno County, counts increasing, 2-3 per 100 terminals common, but few fields treated. Counts in Huron and Westhaven areas ranged 1-2 per 100 terminals. (Ferris, Aug. 3).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Continues to "rag" leaves in Coastal Plain area. (Cott. Ltr., Aug. 12). GEORGIA - Infestations increased during period August 8-14, with 44 percent of fields having light infestations, 16 percent moderate and 9 percent heavy. (Jordan). LOUISIANA - Heavy deposit of egg and small larvae appearing in Tallulah area on late maturing cotton. (Smith et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Holmes, Montgomery and Quitman Counties; controls applied. (Ouzts). Widespread in delta counties and heavy in some fields. Virus disease killing many larvae and may give adequate control in many fields without using chemical controls. (Pfirmer et al.). TEXAS - Light infestations reported from several northwest counties. (Tex. Coop. Rpt.). NEW MEXICO - Apparent buildup causing concern to cotton growers in Eddy, Chaves and Dona Ana Counties. (N. M. Coop. Rpt.). ARIZONA - Increasing in most areas of Pinal, Maricopa and Graham Counties. (Ariz. Coop. Sur.). CALIFORNIA - Occasional specimens taken in many fields; however, damaging populations not developed. (Leigh, Ferris; Aug. 7).

COTTON LEAFWORM (*Alabama argillacea*) - ARKANSAS - Heavy infestation occurred in 2-acre field on University of Arkansas Experiment Station near Fayetteville; few larvae pupating this week. Control was applied. Experimental plot some 40 airline miles from any other cotton. Single specimen observed in Conway County where all acreage probably under treatment. (Ark. Ins. Sur.). TEXAS - Low populations observed in Dawson, Scurry, Yoakum, Lynn, Terry and Martin Counties. (Tex. Coop. Rpt.). OKLAHOMA - Occurring statewide, with some severe defoliation in Payne County where 90 percent of foliage destroyed in scattered areas. Heavy populations also present in Major County, northwest, and Marshall County, south central, with moderate to heavy infestations in Canadian, Grady, Cleveland County area in scattered locations. Lighter counts with some "ragging" occurring in southwest and west central areas. Controls initiated in areas of heaviest infestations. (Okla. Coop. Sur.). NEW MEXICO - Larvae building up in cotton in Eddy, Chaves, Lea, Roosevelt, De Baca and Dona Ana Counties. Pupating in Dona Ana County; heaviest infestations north of Las Cruces. (N. M. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEW MEXICO - Single larva found in cotton bloom in southern Dona Ana County. (N. M. Coop. Rpt.). ARIZONA - First larvae of season emerged from green boll in Sanchez area of Graham County. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Present in Yuma and Maricopa Counties; averaged 28 per 100 plants on White-Wing Ranch, Yuma County. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Hatching occurring in Yuma, Maricopa and Pinal Counties. One field of stub cotton in Pinal County being picked early due to damage by this pest. (Ariz. Coop. Sur.). CALIFORNIA - No serious infestations encountered in Huron and Westhaven areas of Fresno County; however, some fields in Cantua area should be checked for possible increase. (Ferris, Aug. 3).

BEE T ARMYWORM (*Spodoptera exigua*) - GEORGIA - Only of minor importance in several counties, with exception of few problem fields. (Jordan, Aug. 16). ARIZONA - Larvae increasing in Pinal, Maricopa and on White-Wing Ranch in Yuma County. Severe infestations present in localized areas of Pinal County. (Ariz. Coop. Sur.).

A LOOPER (*Trichoplusia* sp.) - NORTH CAROLINA - Reported to range light to heavy August 5-9 in many fields in Nash County and large field in Cumberland County reported heavily infested. (Shackelford, Robertson). During period August 12-16, heavy in Robeson County field (Calhoun), moderate in Scotland County field (Johnston) and light in some Wilson County fields (Mount).

SPIDER MITES - VIRGINIA - Heavily infesting several fields of cotton in Story Creek area, Sussex County. (Rowell, Wright; Aug. 1). NORTH CAROLINA - *Tetranychus* sp. noticeable on edges of many large fields in Wilson County and several small fields heavily infested over entire field. SOUTH CAROLINA - Appear to be more general than normal. Very few reports of control difficulties where recommended miticides correctly applied. (Cott. Ltr., Aug. 12). GEORGIA - Sixteen percent of cotton fields with light infestations during period August 8-14; slight decrease from previous week. (Jordan). MISSISSIPPI - *Tetranychus* spp. light to heavy in isolated areas of delta sections, and in Holmes, Montgomery and Quitman Counties; controls applied. (Ouzts). NEW MEXICO - Spotted, light to heavy infestations reported in cotton near Roswell and Artesia in Chaves and Eddy Counties. (N. M. Coop. Rpt.). CALIFORNIA - Populations heavy in some areas. Treatments applied; however, poor control resulted due to poor coverage on large, rank plants. (Leigh, Aug. 7). Occasional fields require treatment in Cantua area, Fresno County. In Kerman-Caruthers area, few fields require treatment. In Westhaven area, many fields received second application. Infestations in latter area approximately 75 percent *Tetranychus pacificus* and 25 percent *T. telarius*. (Ferris, Aug. 3).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Spotted, heavy infestations in Dona Ana County cotton. Nymphs extremely numerous, requiring controls. (N. M. Coop. Rpt.). ARIZONA - Infestations still present in all cotton-growing areas, but not increased during past week. Some treatments still necessary in all counties. (Ariz. Coop. Sur.). CALIFORNIA - Economic levels found in many fields, with both nymphs and adults present. Many fields recently treated for Lygus spp. Adult migration from cut alfalfa hay has been common. Migration from safflower in West Fresno decreased. (Leigh, Aug. 7). Counts in Cantua, Huron and Westhaven areas of Fresno County showed average of one nymph and 4 adults per 50 sweeps. Exception to general condition commonly involves fields adjacent to safflower where treatments not applied. (Ferris, Aug. 3).

A ROUNDHEADED WOOD BORER (Prionus sp.) - ARKANSAS - Found on cotton in Greene County, northeast. (Ark. Ins. Sur.).

FIELD CRICKETS (Gryllus spp.) - ARIZONA - Increasing in Yuma area. Bait used in some fields in effort to gain control. (Ariz. Coop. Sur.).

A CICADA (Diceroprocta apache) - ARIZONA - Infesting cotton at Bullhead City in Mohave County. Damaged stems prevalent. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Infestation decreased in severity in most areas. Only major "hot spots" occur in Randolph and Davidson Counties. (For. Pest Newsltr.).

WHITE-PINE WEEVIL (Pissodes strobi) - MINNESOTA - Adults emerging; exit holes through bark becoming increasingly evident. (Minn. Ins. Rpt.).

PINE TUSSOCK MOTH (Dasychira plagiata) - MINNESOTA - Light trap collections and egg mass surveys in southern Carlton and northern Pine Counties indicate very light infestation for 1964, except for Section 27 in Windemere Township, near Sturgeon Lake, Pine County. (Minn. Ins. Rpt.). WISCONSIN - Approximately 10 percent of egg masses observed August 7 in Douglas County hatched. Adults of a minute egg parasite (Trichogramma minutum) active on some egg masses, and large dipterous larvae still present in parasitized pupal cases of pine tussock moth on same date. Large flies, probably Sarcophaga aldrichi, numerous in most severely defoliated area. (Wis. Ins. Sur.).

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - IDAHO - Adults emerging in Moscow area; several males observed in flight. (Manis).

EASTERN SPRUCE GALL APHID (Chermes abietis) - WISCONSIN - Crawlers emerging from galls on Norway spruce in Manitowoc County August 8. (Wis. Ins. Sur.).

PINE BARK APHID (Pineus strobi) - VIRGINIA - Infesting loblolly pine at a location in Lawrenceville, Brunswick County (Tapley, Basham), and a pine tree in a home yard in Falls Church, Fairfax County (Rowell, Aug. 2).

A PINE LEAF APHID (Pineus pinifoliae) - NEW YORK - Infesting white pine in Warren County. (N. Y. Wkly. Rpt., Aug. 12).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NEW YORK - Second-generation crawlers settled on new growth of Scotch pine in northern Cayuga County. (N. Y. Wkly. Rpt., Aug. 12). MINNESOTA - Second-generation crawlers appearing. (Minn. Ins. Rpt.).

PINE TORTOISE SCALE (Toumeyella numismaticum) - MINNESOTA - Some localized infestations present in northern Pine County. Problem has increased since 1962. (Minn. Ins. Rpt.).

BALSAM GALL MIDGE (Cecidomyia balsamicola) - MICHIGAN - Local infestation present in Escanaba River State Forest area. (Mattson).

CONIFER SAWFLIES - NEW YORK - Unspecified species found in great numbers, stripping needles from entire small trees, leaving only buds, on individual Scotch pines in a Chemung County plantation, August 1. (N. Y. Wkly. Rpt.). PENNSYLVANIA - Neodiprion lecontei light on Scotch pine seedlings in Columbia County, August 1. (Callacot). WISCONSIN - Neodiprion pinetum larvae collected in Trempealeau County cocooning first week of August. (Wis. Ins. Sur.). MINNESOTA - Late-stage larvae of N. lecontei continue to defoliate small, open-grown jack pine, especially roadside stands, in central area. First-generation Diprion similis adults still active; early second-generation larvae beginning to feed; spotty areas of high populations present in Brainerd area, Crow Wing County. (Minn. Ins. Rpt.). CALIFORNIA - Zadiprion rohweri medium on Pinus monophylla leaves in Juniper Hill, Los Angeles County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - MAINE - Webs appearing in many roadside areas in most sections of State. Infestations to date apparently not as heavy as in 1962. (Boulanger, Aug. 10). DELAWARE - Tents very numerous on many trees in eastern Sussex County. (Burbutis, Evans). MARYLAND - Few small larvae noted on roadside tree in Worcester County. (U. Md., Ent. Dept.). VIRGINIA - Webs becoming conspicuous on persimmon, sourwood and other favored hosts in many areas of State. (Kosztarab, Vest, Tarpley). MISSOURI - Extremely heavy on various species of trees throughout southwest area. Some black walnut and persimmon trees completely defoliated. (Munson, Thomas, Wood).

CHAIN-SPOTTED GEOMETER (Cingilia catenaria) - MAINE - Infestation covering 350 acres found on Kennebunk-Lyman town line in York County; defoliation ranged 50-90 percent. (Boulanger, Aug. 10).

GREGARIOUS OAK LEAF MINER (Cameraria cincinnatiella) - MAINE - Moderate on oak in Rumford, Oxford County. (Boulanger, Aug. 10).

AN OAKWORM (Anisota sp.) - MINNESOTA - Larvae completely defoliated several oak stands in Becker County; middle and late stages still feeding. (Minn. Ins. Rpt.).

LEAF ROLLER MOTHS - WISCONSIN - Larvae numerous in hardwood stands in north eastern Menominee section. Associated with maple blight problem in Florence County several years ago and will bear watching. (Wis. Ins. Sur.). CALIFORNIA - Larvae of Argyrotaenia franciscana heavy on leaves and twigs of Psoralea pinnata nursery stock in Cambria, San Luis Obispo County. (Cal. Coop. Rpt.).

TUSSOCK MOTHS - NEW YORK - Unspecified species causing considerable damage to maples and sycamores in Nassau County; migrating to pupation sites. (N. Y. Wkly. Rpt., Aug. 12).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - Trap inspections continue negative. (Carlson).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - WISCONSIN - Adults appear more numerous than normal. Defoliation of elms in scattered areas noticeable. (Wis. Ins. Sur.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - MISSISSIPPI - Heavy on elms in Oktibbeha County; controls applied. (Ouzts). TEXAS - Causing heavy damage to elm trees in Titus County, northeast. This is a new county record. (Neal). Causing complete defoliation of small trees in Potter County. (Tex. Coop. Rpt.; Yeary). OKLAHOMA - Remains most commonly reported pest species, with damaging populations continuing throughout State. (Okla. Coop. Sur.). ILLINOIS - Second generation damaging Chinese elms in central section. (Ill. Ins. Rpt.).

IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) - PENNSYLVANIA - Defoliated 5 willows in a Lackawanna County nursery. (Andreychik, July 30).

WALKINGSTICKS - WISCONSIN - Most walkingsticks appear full grown; mating pairs observed in Marinette County infestation, but no eggs collected in traps August 5-9. Female, collected as first-stage nymph in same area June 5 and reared in laboratory, laid eggs July 25. (Wis. Ins. Sur.). MINNESOTA - Moderate to high populations of Diapheromera femorata present in scrub oak areas in Hubbard County. (Minn. Ins. Rpt.).

A LEAF-EATING GRASSHOPPER (Dendrotettix quercus) - WISCONSIN - Most grasshoppers in Marinette County infestation full grown August 8; oviposition underway. (Wis. Ins. Sur.).

A CYNIPID WASP (Andricus parmula) - CALIFORNIA - Heavy on leaves of native oak in association with a whitefly (Aleuroplatus coronatus) in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

MAPLE BLADDER-GALL MITE (Vasates quadripedes) - PENNSYLVANIA - Heavy on maple in Crawford County, August 7. (Adams).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Heavy on evergreens in Marshall (south central) and Washita (west central) Counties. (Okla. Coop. Sur.). MISSISSIPPI - Medium on evergreens in Choctaw County; controls applied. (Ouzts). MARYLAND - Damage heavy on few plants in row of Norway spruce in Harford County. Bags about half grown; small for season. (U. Md., Ent. Dept.). NEW JERSEY - Numerous on ornamentals. (Ins.-Dis. Newsltr., Aug. 13).

MIMOSA WEBWORM (Homadaula albizziae) - MISSOURI - Moderate on honeylocust and mimosa in central, east central and southeastern areas. (Munson, Thomas, Wood).

A LEAF MINER MOTH (Gracilaria cuculipennella) - RHODE ISLAND - Probably this species, infesting extensive privet hedge in Narragansett, Washington County. (Stessel, Mathewson).

CATALPA SPHINX (Ceratomia catalpae) - MICHIGAN - Late-stage larvae a problem on ornamental trees locally in Ionia County. (Pryor).

A SESIID MOTH (Paranthrene robiniae) - CALIFORNIA - Heavy on willows locally in Livermore, Alameda County. (Cal. Coop. Rpt.).

A TISCHERIID MOTH (Tischeria sp., probably ceanothi) - CALIFORNIA - Probably this leaf miner, heavy in leaves of ceanothus in San Luis Obispo, San Luis Obispo County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - PENNSYLVANIA - Feeding heavily on nursery shrubs in Monroe County. (Andreychik, July 31). MAINE - Populations and damage light on roses in Cumberland County. (Boulanger, Aug. 10).

BLISTER BEETLES - PENNSYLVANIA - Epicauta pestifera damaging garden flowers in Crawford County. (Adams, Aug. 7). CALIFORNIA - Heavy numbers of Lytta stygica defoliating lilac bushes in Alturas, Modoc County. (Cal. Coop. Rpt.).

APHIDS - PENNSYLVANIA - Macrosiphum anomalae abundant on Aster novae-angliae in Centre County. Det. by J. O. Pepper. (Udine, Aug. 4). WYOMING - Macrosiphum eoessigi heavy on hollyhock plants in many areas of Laramie, Albany County. (Marks). UTAH - Several species causing varying degrees of damage to several hosts over State. (Knowlton).

BOXELDER BUG (Leptocoris trivittatus) - MICHIGAN - Heavy in Wayne County. (Kidd). MARYLAND - First nymphs of season noted on tree in College Park, Prince Georges County, and swarming on buildings. (U. Md., Ent. Dept.).

A COREID BUG (Leptocoris rubrolineatus) - NEVADA - Medium on boxelder in Fallon, Churchill County. (Martinelli).

LACE BUGS - NEW YORK - Numerous on azaleas and andromeda in Nassau County. (N. Y. Wkly. Rpt., Aug. 12). NEW JERSEY - Quite heavy on sycamore and other shade trees. (Ins.-Dis. Newsltr., Aug. 13).

COCCIDS - PENNSYLVANIA - Aspidiotus ancyclus heavy on dogwood trees in York County, July 31; many parasitized. (Negley). Pseudococcus maritimus moderate on yew in local areas of Lackawanna County, July 31. (Jeffery). MARYLAND - Pseudaulacaspis pentagona heavy on privet hedge on a property in Montgomery County. Very heavy infestation of Unaspis euonymi noted in Harford County, and Gossyparia spuria very light on American elm in same county. (U. Md., Ent. Dept.). VIRGINIA - P. pentagona severely infested umbrella-trees at 2 locations in Newport News. (Rowell, Griffin, Aug. 8). Pinnaspis aspidistrae infested ferns at a location in Charlotte Court House, Charlotte County. (Adams, Barbour, July 19). OHIO - Lecanium fletcheri caused severe damage and defoliation of yew at Wooster, Wayne County. Crawlers present; susceptible to chemical control. (Rings). CALIFORNIA - Saissetia hemisphaerica medium on Phoenix sp. nursery stock on property in San Diego, San Diego County. Diaspis carueli heavy on Libocedrus decurrens in Susanville, Lassen County. (Cal. Coop. Rpt.).

Coccids in Florida - Chrysomphalis aonidum and Aspidiotus lataniae infested leaves of Brassia actinophylla at Maitland, Orange County, August 2. (Youtsey). Ceroplastes floridensis infested leaves of Ficus sp. at Coral Gables, Dade County, August 7. (Wolfenbarger). Phenacaspis cockerelli infested leaves of Magnolia grandiflora at Gainesville, Alachua County, August 7. (Hetrick).

THRIPS - NEW YORK - As many as 25 immature forms of unspecified species found per single leaf in badly infested privet hedge in Chemung County. Overall effect of injury was silvery cast to leaves. No adults noted. (N. Y. Wkly. Rpt., Aug. 12). UTAH - Taeniothrips simplex discolored and/or damaged many blossoms in several Salt Lake County home gardens. (Knowlton, Parrish).

EARWIGS - NEW YORK - Large numbers present in Madison-Oneida County area; eating flowers of dahlias. (N. Y. Wkly. Rpt., Aug. 12).

SPIDER MITES - CALIFORNIA - Oligonychus punicae heavy on pyracantha in Santa Ana, Orange County. This is a new host record for this species. (Cal. Coop. Rpt.). OKLAHOMA - Unspecified species present on variety of ornamentals throughout State. (Okla. Coop. Sur.). WISCONSIN - Browning of oak leaves by what is probably Oligonychus bicolor evident in Grant County. (Wis. Ins. Sur.). MARYLAND - Tetranychus sp. moderately damaged English boxwood in Queen Annes County. (U. Md., Ent. Dept.). PENNSYLVANIA - Petrobia hartii very abundant on oxalis in Centre County. Det. by R. J. Snetsinger. (Udine, Aug. 4).

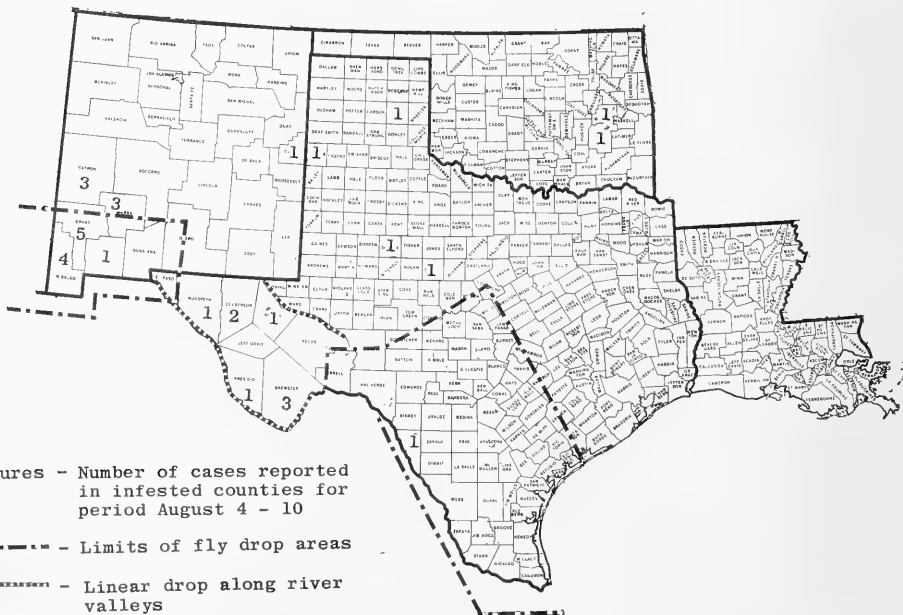
INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - ILLINOIS - Various species common in some areas of State. (Ill. Ins. Rpt.). MICHIGAN - Adult numbers of various species now low in all black-light trap samples. (Newman). WISCONSIN - Moderate numbers of Aedes spp. taken in light traps in Madison area. Culex spp. larvae, principally C. pipiens, unusually abundant; present strong potential for large adult populations, at least in Dane County. (Wis. Ins. Sur.). MINNESOTA - Total of 12,000 female mosquitoes taken in light traps during week ending August 10; of this total, 11,400 Aedes vexans. This is pronounced increase of approximately 7,000 over previous week. In biting collections made during same period, total of 40 collections made, with total of 573 specimens taken, of which 488 female A. vexans. General mosquito situation in Minneapolis-St. Paul area during week ending August 16 showed pronounced decline over previous week. Peak populations, as result of flooding of Minnesota River, occurred August 7-9. Mosquitoes

now show an additional decline in numbers. (Minn. Ins. Rpt.). NORTH DAKOTA - Survey of sewerage lagoons showed mosquito populations not high. Aedes dorsalis present, but Aedes nigromaculis and Aedes vexans account for most complaints. Culex tarsalis increasing in numbers, and 80 percent of larvae in first and second stages. Egg masses of latter species reached 3 per dip at some locations. (Noetzel). NEVADA - Aedes spp. and Culex tarsalis adult populations heavy in Reno-Sparks area, Washoe County. (Coop. Rpt.). OKLAHOMA - Heavy populations of unspecified species annoying cattle and humans in grassy areas of McCurtain County. (Okla. Coop. Sur.). MISSISSIPPI - Psorophora spp. light on livestock in delta counties, with controls applied. (Ouzts). NORTH CAROLINA - Mosquitoes unusually light for this time of year along coastal areas. (Usry).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period August 4 - 10, a total of 13 infestations was reported from TEXAS; 18, including 1 of unknown origin, from NEW MEXICO; and 2 from OKLAHOMA. Specimens were reported from 10 counties in Texas, 6 counties in New Mexico, and 2 counties in Oklahoma. Screw-worm was reported for the first time this year from Parmer County, Texas, and Pittsburg County, Oklahoma. A total of 132,997,850 sterile flies was released during the period August 4 - 10. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period August 4 - 10

--- Limits of fly drop areas

- - - - - Linear drop along river valleys

HORN FLY (Haematobia irritans) - MARYLAND - Ranged 1-30 per head in Frederick and Howard Counties. (U. Md., Ent. Dept.). VIRGINIA - Averaged 100 per animal in herd of beef cattle in Essex County. (Tarpley). ILLINOIS - Averaged 80 per animal on pastured cattle in northwest section and 25 per animal in northeast. (Ill. Ins. Rpt.). WISCONSIN - Causing problems in Calumet and Waushara Counties. (Wis. Ins. Sur.). NORTH DAKOTA - Ranged 0-2,500 per animal; highest counts observed in southern half of State. (Noetzel). SOUTH DAKOTA - Continues cause of concern to ranchers and farmers over State. Populations extremely high this season with backs of some herd bulls, in some areas, completely covered with this fly. (Hintz). NEBRASKA - Ranged 200-3,000 per animal in parts of central, eastern and southeastern sections. (Bergman). OKLAHOMA - Ranged 150-300 per cow in Sequoyah County, east central; 300-500 per cow noted in McCurtain County, southeast. Moderate to heavy populations reported from several areas around State. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Most troublesome fly species in 160 barns inspected. (Wis. Ins. Sur.). ILLINOIS - Averaged 12 per animal on pastured cattle in northwest section and 4 per animal in northeast. (Ill. Ins. Rpt.). OKLAHOMA - Averaged 1 per animal in Stillwater area, Payne County. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta counties; controls applied. (Ouzts). MARYLAND - Few noted at windows in a Howard County barn. Heavy, 100 per head, on herd in Frederick County. (U. Md., Ent. Dept.).

TABANIDS - NEVADA - Tabanus punctifer ranged medium to heavy in Fallon area, Churchill County. (Cooney). WISCONSIN - Horse fly and deer fly numbers remain high in certain areas; particularly noticeable in Winnebago County. (Wis. Ins. Sur.). OKLAHOMA - Tabanus spp. ranged 1-3 per head on animals in McCurtain County, southeast; moderate counts noted on cattle in Ottawa County, northeast, with 2-6 per cow observed in Sequoyah County, east central. (Okla. Coop. Sur.). MISSISSIPPI - Tabanus spp. light on livestock in delta counties; controls applied. (Ouzts).

FACE FLY (Musca autumnalis) - WYOMING - Adults numerous and causing some annoyance to many livestock herds in Albany County. Adults estimated to range 10-12 per animal. (Marks). NEBRASKA - Averaged approximately 13 per animal in Colfax County. (Bergman). SOUTH DAKOTA - Counts holding steady; ranged 5-30 per face throughout State. (Hintz). NORTH DAKOTA - Has been observed on cattle in western part of State in Stutsman, Emmons, Grant, Stark, McKenzie, Dunn, Mercer, Mountrail, Ward, Burke, Renville, Bottineau, Towner, Pierce, Benson and Wells Counties. These are all new county records. (Noetzel). Suspected of occurring in Richland and Traill counties. (N. D. Ins. Sur.). WISCONSIN - Although present in many areas, little trouble reported. (Wis. Ins. Sur.). ILLINOIS - Averaged 30 per head on pastured cattle in northwest and 20 per head in northeast. (Ill. Ins. Rpt.). OHIO - Populations remain low due to cool weather. (Treece). MARYLAND - Ranged 2-50 per animal on dairy cattle in Frederick and Howard Counties; heavy on one-third of herds. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - MARYLAND - Heavy on dairy farm in Howard County. (U. Md., Ent. Dept.). NORTH CAROLINA - Continues a problem around laying houses in Johnston and Durham Counties. Also reported a problem around slaughterhouse in Randolph County. (Jones). OKLAHOMA - Counts in barns ranged 3-15 per scudder grid in Stillwater area, Payne County; averaged 6 per head on animals. (Okla. Coop. Sur.). ILLINOIS - Populations increased greatly during past few weeks. Continued increase can be expected until advent of cool weather. (Ill. Ins. Rpt.). WISCONSIN - Populations increasing in many areas. (Wis. Ins. Sur.). NORTH DAKOTA - Troublesome in some western communities. Ranged 1-40 per square yard in vicinity of livestock. (Noetzel). UTAH - Common in some rural and city stores and restaurants in Carbon, Emery, Grand and San Juan Counties. (Knowlton).

DRONE FLY (Eristalis tenax) - WASHINGTON - Thousands of larvae occurring in indoor poultry lagoon in Pullman, Whitman County. (Brannon).

BLOODSUCKING CONENOSE (Triatoma sanguisuga) - FLORIDA - Bit human at Thonotosassa, Hillsborough County, August 2. (Hunter). Reported on wall of house near light at Gainesville, Alachua County, August 9. (Esser).

FLEAS (Ctenocephalides spp.) - RHODE ISLAND - Household infestations frequently reported in Providence and Kent Counties. (Mathewson, King, Cartier, Hannah).

BEEES, HORNETS AND WASPS - NEW JERSEY - Ground nesting wasps active in many areas. (Ins.-Dis. Newsltr., Aug. 13). RHODE ISLAND - Complaints concerning wasps continue statewide. Nests of Polistes spp. being abandoned or showing decrease in reproductive activity. (Mathewson, Cartier, King). WISCONSIN - Various complaints of annoyance by yellow jackets, hornets and bumble bees. (Wis. Ins. Sur.).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - CALIFORNIA - Medium in a residence in Santa Barbara, Santa Barbara County. This mite has been a nuisance in business establishments and residences more frequently this year than for several years. (Cal. Coop. Rpt.).

HOUSEHOLD AND STRUCTURAL INSECTS

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - MICHIGAN - Adult activity about homes decreasing in southern counties; however, problem continues in areas farther north. (Earl, Janes, Haugard). PENNSYLVANIA - Nuisance in home in Crawford County. (Adams).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - OHIO - Adults causing minor annoyance in home in Wooster, Wayne County. (Rings, Slesman).

AN ANOBIID BEETLE (Hadrobregmus gibbicollis) - WASHINGTON - Heavily damaging old Douglas-fir timbers in 40-year-old home at Friday Harbor, San Juan County. (Baker).

A DERMESTID BEETLE (Dermestes maculatus) - OHIO - Abundant in apartment house in Canton, Stark County. (Treece).

CASEMAKING CLOTHES MOTH (Tinea pellionella) - FLORIDA - Infested wool rug at Tampa, Hillsborough County. (Hale, Aug. 9).

CRICKETS - OHIO - Undetermined species causing annoyance by entering homes in Columbus, Franklin County, and Wooster, Wayne County. (Holdsworth, Rings). NORTH DAKOTA - Gryllus spp. remain problem in Fargo area; severely damaged home furnishings in some instances. (N. D. Ins. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - IDAHO - Becoming generally abundant and invading homes in northern area; majority consists of adults apparently seeking winter quarters. (Manis). UTAH - Causing annoyance in and about some motels and homes in Kane County area. (Knowlton).

TERMITES - UTAH - Damaging home at Midvale, Salt Lake County. (Knowlton).

CARPENTER ANTS (Camponotus spp.) - NORTH CAROLINA - Damaged books, wood and large portion of floor in storage building in Orange County. Det. by Moore. (Robertson, Aug. 9).

ANTS - WISCONSIN - Increased activity noted in some areas. Solenopsis molesta causing problems in Calumet County; Tetramorium caespitum entering houses in Racine County. Various species troublesome to householders in Winnebago County. (Wis. Ins. Sur.).

CLOVER MITE (Bryobia praetiosa) - NEW YORK - Troublesome in homes in Chemung County. (N. Y. Wkly. Rpt., Aug. 12).

STORED-PRODUCT INSECTS

COWPEA WEEVIL (Callosobruchus maculatus) - TEXAS - Moderate, local populations attacking southern peas in Jones County. (Tex. Coop. Rpt.; Yearly).

A TYROGLYPHID MITE (Aleuroglyphus ovatus) - TEXAS - Extremely heavy in mixed poultry feed on farm in Rusk County. (McKay).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults of several species averaged 18 per 100 sweeps in alfalfa in Albany County. (Marks). IDAHO - Extremely abundant in Myrtle, Lapwai and Lewiston areas in alfalfa. (Manis).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults averaged 32 per 100 sweeps in alfalfa in Albany County. (Marks). IDAHO - Extremely abundant in alfalfa in Myrtle, Lapwai and Lewiston areas. (Manis).

BIG-EYED BUGS (Geocoris spp.) - WYOMING - Adults averaged 38 per 100 sweeps in Albany County alfalfa. (Marks). IDAHO - Extremely abundant in alfalfa in Myrtle, Lapwai and Lewiston areas. (Manis).

ANTHOCORID BUGS - IDAHO - Extremely abundant in alfalfa in Myrtle, Lapwai and Lewiston areas. (Manis).

HONEY BEE (Apis mellifera) - CALIFORNIA - Pollination rentals have been good this year; over 200,000 rented for pollination of alfalfa and clover within and outside of State. (Cal. Coop. Rpt.).

ALKALI BEE (Nomia melanderi) - NEVADA - Adult activity in Kings River Valley and Orovada, Humboldt County, alfalfa seed areas decreasing, particularly in artificial beds. (Lauderdale).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Delimiting survey continues in infested area near Battle Creek. To August 16, total of 22,400 acres (35 square miles) known to be infested in 4 Calhoun County townships. Traps being set in 6 additional townships in Calhoun County and 5 townships in Kalamazoo County. Trend of finds should become evident during next 7 days; controls in area have been discontinued. Few additional beetles continue to be taken in traps in Detroit, Ypsilanti and in Monroe and Lenawee County areas. Single beetle taken in Berrien County. (Carlson, Ring). PENNSYLVANIA - Extremely scarce in Westmoreland County, moderate to heavy in Bedford County, and moderate in local areas of Northampton County. (Jeffery, July 31). Very light in Columbia, Luzerne and Carbon Counties. (Callacot, July 31). RHODE ISLAND - Showed slight increase in abundance during past 10 days statewide. (Mathewson, Cartier, Buonaiuto, King, Stessel).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - IDAHO - Blacklight collections in southcentral area indicate marked reduction in adults over collections in 1962. (Gibson).

FALSE CHINCH BUGS (Nysius spp.) - NEVADA - Heavy in drying fields, with migrations to yards and home gardens occurring in Minden, Douglas County. (Martinelli, Weaver). UTAH - Extremely numerous on some farm and range areas in Kane County; also in some homes. (Knowlton, Hatch).

DOBSONFLY (Corydalus cornutus) - MAINE - Causing considerable concern to people in Lisbon area, Androscoggin County. (Boulanger, Aug. 10).

EUROPEAN EARWIG (Forficula auricularia) - MAINE - Causing considerable annoyance and concern in Portland area, Cumberland County, and in Lewiston-Auburn area, Androscoggin County, where populations reaching substantial levels. (Boulanger, Aug. 10).

CICADA KILLER (Sphecius speciosus) - NEW JERSEY - Active in many areas. (Ins.-Dis. Newsltr., Aug. 13). VIRGINIA - Causing a nuisance at a location in Grundy, Buchanan County. (Tarpley, Abbott, Aug. 7).

CORRECTIONS

CEIR 13(2):17 - HAWAIIAN INSECT NOTES - BARNACLE SCALE (Ceroplastes cerringiformis) should read Ceroplastes cirripediformis.

CEIR 13(29):835 - A STEM SAWFLY (Hartigia cressoni) should read (Hartigia cressonii).

ADDITIONAL NOTES

GEORGIA - FALL ARMYWORM (Laphygma frugiperda) light to moderate on peanuts in southern area and light to heavy in whorls of grain sorghum in same area. CORN EARWORM (Heliothis zea) light to moderate on peanuts and grain sorghum in southern area. SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) moderate on peanuts in Early County; pest found in Calhoun, Clay, Early, Randolph and Sumter Counties this year. Cotton square counts in 18 southern fields show range of 6-77 percent punctured squares (average 38) by BOLL WEEVIL (Anthonomus grandis). Squares scarce in many fields. Egg counts of BOLLWORM (Heliothis zea) made in 31 southern cotton fields show range of 12-113 per 100 terminals (average 55). Larval counts ranged 3-22 per 100 terminals (averaged 9). Adults ovipositing on stems, squares and blooms. CABBAGE LOOPER (Trichoplusia ni) ranged light to heavy on cotton in southern area; COTTON APHID (Aphis gossypii) very light in same area. BEET ARMYWORM (Spodoptera exigua) ranged light to heavy on cotton in southwestern area. (Johnson). A CARPENTER ANT (Camponotus sp.) and a FLEA (Ctenocephalides sp.) abundant in Atlanta area. (Ridley).

Weather of the week ending August 12 (continued from page 976)
12th, a tornado, with a 20-mile path, tore tops from trees near South Bend, Indiana. A twister on the 16th, 18 miles northwest of Madison, Wisconsin, damaged several farms, trailers, and a resort; numerous dead cattle were reported and 5 persons were injured. Other severe thunderstorms took their toll in lesser damage over Wisconsin that same day. (Summary supplied by U.S. Weather Bureau).

LIGHT TRAP COLLECTIONS

| Temper- ature °F | Species- List | Type of Trap | Number of Traps | Number of Insects | Number of Males | Number of Females | Number of Eggs | Number of Larvae | Number of Pupae | Number of Adults | Number of Males | Number of Females | Number of Eggs | Number of Larvae | Number of Pupae | Number of Adults | Number of Males | Number of Females | Number of Eggs | Number of Larvae | Number of Pupae | Number of Adults | |
|---------------------|-------------------------------------|-----------------|--------------------|----------------------|--------------------|----------------------|-------------------|---------------------|--------------------|---------------------|--------------------|----------------------|-------------------|---------------------|--------------------|---------------------|--------------------|----------------------|-------------------|---------------------|--------------------|---------------------|--|
| | NEBRASKA | | | | | | | | | | | | | | | | | | | | | | |
| | Lincoln 8/7-7 | | 122 | 23 | 10 | 21 | 40 | 278 | 1 | 7 | 129 | | | | | | | | | | | | |
| | Kearney 8/7-12 | | 5 | | 3 | 6 | 11 | 22 | | 7 | 10 | | | | | | | | | | | | |
| | McCook 8/8-10 | | 8 | 1 | 3 | 5 | 1 | 1 | | 1 | 17 | | | | | | | | | | | | |
| | North Platte 8/7-13 | | 37 | 23 | 3 | 6 | 2 | | | 1 | 23 | | | | | | | | | | | | |
| | Gering 7/31-8/6 | | 36 | 131 | 2 | 2 | | | | 83 | 19 | 25 | 1 | 33 | | | | | | | | | |
| | Parks 7/24-30 | | 2 | 59 | | | | | | 45 | 40 | | | | | | | | | | | | |
| | Scotts Bluff Expt. Sta. 7/31-8/6 | | 6 | 116 | 1 | | | | | 38 | 2 | | | | | | | | | | | | |
| | Scotts Bluff Expt. Sta. 8/7-13 | | 25 | 206 | | | | | | 18 | 2 | | | | | | | | | | | | |
| | NEW JERSEY | | | | | | | | | | | | | | | | | | | | | | |
| | Evesboro 8/8, 12 | | | | 5 | 2 | | | | 21 | 12 | 8 | 2 | | | | | | | | | | |
| | Seabrook 8/8, 12 | | | | 1 | | | | | 2 | | | | | | | | | | | | | |
| | NORTH DAKOTA | | | | | | | | | | | | | | | | | | | | | | |
| | Fargo 8/10-16 | | 54 | 1 | 1 | 14 | 74 | 28 | 1 | 108 | | | | | | | | | | | | | |
| | Bismark 8/10-16 | | 5 | 4 | 1 | 49 | 83 | 4 | | 13 | | | | | | | | | | | | | |
| | Pottineau 8/10-16 | | | 1 | | 7 | 1 | | | 4 | | | | | | | | | | | | | |
| | Williston 8/7-16 | | | 1 | | | | | | 2 | | | | | | | | | | | | | |
| | Weyman 8/7-16 | | | | | | | | | | | | | | | | | | | | | | |
| | McLeod 8/10-16 | | | | | | | | | 1 | | | | | | | | | | | | | |
| | SOUTH CAROLINA | | | | | | | | | | | | | | | | | | | | | | |
| | Charleston 8/5-11 | | 70-93 | 0.04 | 3 | 1 | 98 | 14 | | 1 | 2 | | | | | | | | | | | | |
| | Clemson 8/10-16 | | 28 | 3 | 3 | 42 | 11 | | | 4 | 202 | 4 | 25 | | | | | | | | | | |
| | TEXAS | | | | | | | | | | | | | | | | | | | | | | |
| | Waco 8/10-16 | | 50 | 6 | 71 | 175 | 300 | | | 17 | 122 | | | | | | | | | | | | |
| | Brownsville 8/8-15 | | 5 BL | 46 | 28 | 1250 | 852 | 820 | | 151 | 8 | 80 | | | | | | | | | | | |
| | WISCONSIN | | | | | | | | | | | | | | | | | | | | | | |
| | Madison 8/6-9 | | 3 | | 2 | | | | | 50 | 1 | | | | | | | | | | | | |
| | Madison 8/7-13 | | BL | 9 | 1 | | | | | 10 | 4 | | | | | | | | | | | | |
| | Middleton 8/7-13 | | BL | 6 | 8 | | | | | 15 | 3 | | | | | | | | | | | | |
| | De Forest 8/6-12 | | BL | 2 | 2 | | | | | 239 | 27 | | | | | | | | | | | | |
| | Arlington 8/6-12 | | 3 BL | 6 | 6 | | | | | 967 | 23 | | | | | | | | | | | | |
| | Fox Lake 8/6-12 | | 2 BL | 6 | 21 | | | | | 272 | | | | | | | | | | | | | |
| | Beaver Dam 8/6-12 | | BL | 6 | 7 | | | | | 125 | | | | | | | | | | | | | |
| | Oakfield 8/6-12 | | BL | 6 | 42 | | | | | 22 | | | | | | | | | | | | | |
| | Eden 8/6-12 | | BL | 6 | 2 | | | | | 18 | | | | | | | | | | | | | |
| | Wayne 8/6-12 | | BL | 6 | 3 | | | | | 19 | | | | | | | | | | | | | |
| | Theresa 8/6-12 | | BL | 6 | 5 | | | | | 9 | | | | | | | | | | | | | |
| | Wendell 8/6-12 | | BL | 6 | 1 | | | | | 1 | | | | | | | | | | | | | |
| | Cedar Grove 8/6-12 | | BL | 3 | 1 | | | | | 46 | | | | | | | | | | | | | |
| | Gays Mills 8/6-12 | | BL | 9 | 8 | | | | | | | | | | | | | | | | | | |

* BL = blacklight; I = insecticide; MV = mercury vapor; 0 = other

** All = all; beat = beaten; best = best; cal = cole crops (crucifers); catt = cotton; FC = field corn; H = high; H = high; let = lettuce; leg = legumes (unspecified); lett = lettuce; pean = peanut; pepp = pepper; pot = potatoes; SC = sweet corn; sol = solanaceous plants (unspecified); soy = soybean; TC = truck crops (unspecified or mixed); tob = tobacco; tom = tomato.

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ECONOMIC ANALYSIS
REPORT

Issued by

STATE POLYMERIZATION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Adult GRASSHOPPER survey in Montana shows buildup in northern and southeastern counties; and migration of grasshoppers into crops other than alfalfa becoming more pronounced in Wisconsin as they approach maturity. (p. 1005). Heavy, widespread infestations of SORGHUM MIDGE appearing on late grain sorghum in northwest Texas. Adults of WESTERN CORN ROOTWORM building up on corn in Platte and Goshen Counties, Wyoming, and numerous on corn and sorghum near Duncan, Greenlee County, Arizona. NORTHERN CORN ROOTWORM adults heavy on treated field corn in Hardin County, Ohio. (p. 1007). CORN LEAF APHID populations continue abundant on corn in several States. (pp. 1007,1008). TWO-SPOTTED SPIDER MITE populations high on corn in dry areas of southeast Colorado; and undetermined species of SPIDER MITES building up on corn in parts of Torrance County, New Mexico. (p. 1008).

Some dispersal of SPOTTED ALFALFA APHID indicated in southern Wisconsin; moderate to heavy infestations continue in southwest Missouri; collected in Union County of South Dakota (southeast) for first time in last two years; and increasing in some fields of alfalfa in southeast Colorado. (p. 1008). Larvae of ALFALFA CATERPILLAR causing severe damage to alfalfa in Graham, Greenlee, Yuma and Pinal Counties, Arizona, and abundant in areas of Torrance and Santa Fe Counties, New Mexico. (p. 1010).

Sunflower being damaged by SUNFLOWER MOTH and BANDED SUNFLOWER MOTH in eastern North Dakota, and by THRIPS and larvae of a MOTH (Suleima helianthana) in California. (p. 1011).

MEDITERRANEAN FRUIT FLY collected in trap August 19 at Miami Springs, Dade County. This is northern extension of current infestation and first adult caught since July 22. (p. 1011). CITRUS RUST MITE continues major control problem in Florida citrus. (pp. 1011, 1012). Summer-brood adults of PLUM CURCULIO continue to emerge in fairly large numbers at Wooster, Wayne County, Ohio. (pp. 1012, 1013). CABBAGE APHID becoming a problem in most areas of New York where crucifers grown, and troublesome in Delaware, New Mexico and Oregon. (p. 1015). All stages of TWO-SPOTTED SPIDER MITE migrating to potatoes, sugar beets and other crops in large numbers from clover and other spring hosts in Washington. (p. 1016). Continued controls for BOLL WEEVIL, BOLLWORMS and other cotton pests recommended in most cotton-growing areas. (pp. 1018-1021).

FALL WEBWORM infestations heavy on host trees in areas throughout Missouri, and infestations noted in Wisconsin, North Dakota, Michigan, Rhode Island, Delaware, Virginia and North Carolina. (p. 1022). WESTERN OAK LOOPER defoliating large stands of ash in Linn County, Oregon. LOCUST LEAF MINER caused severe browning of black locusts in southeastern and southwestern Ohio (p. 1023), and MIMOSA WEBWORM heavy in areas of Georgia and Alabama (p. 1024).

DETECTION

ASIATIC OAK WEEVIL collected for first time in Tennessee; now recorded in Coffee, Scott and Knox Counties. (p. 1024). BAGWORM found on juniper in Larimer County, Colorado; first ARS record for State. (p. 1024). New county records reported were WESTERN CORN ROOTWORM in Greenlee County, Arizona (p. 1007); ELM LEAF BEETLE in Yavapai and Graham Counties, Arizona (p. 1023); a COCCID (Toumeyella pini) in Lorain County, Ohio (p. 1024); and EUROPEAN EARWIG in Lemhi County, Idaho (p. 1030).

CORRECTIONS

See page 1030.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1026).

Map of Cereal Leaf Beetle (Oulema melanopa). (p. 1031).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Barley, Corn, Sorghum, and Beans (dry) in Colorado in 1962. (pp. 1035-1038).

Reports in this issue are for week ending August 23, unless otherwise indicated.

WEATHER OF THE WEEK ENDING AUGUST 26

Autumn-like weather prevailed early and late in the period northward from the Ohio Valley and the central East Coast States. Minima approached the freezing mark in Pennsylvania and northern Michigan; in the former State, Phillipsburg cooled to 33° on the 25th. Trees were reported beginning to color in northern Wisconsin. Except for narrow strips of slightly above normal temperatures over southern New England and from eastern Virginia to western Florida, temperatures averaged below normal from the central Plains and Mississippi Valley eastward. Deficiencies of 6° or more were spread from south-central Illinois to northeastern Ohio and in northeastern Maine.

Above normal averages of significance were largely limited to the Great Plains and sections of the central and southern Rockies. The mercury soared to 109° in Oklahoma and 105° in Kansas; Rapid City, South Dakota, logged maxima in the upper 90's on 3 days.

Except for extreme coastal locales, much of the remainder of the Far West recorded unseasonably cool averages. A large area from central California over interior Oregon was deficient from normal by at least 6°. On the 25th, Reno, Nevada, reported a 31° low.

Over the Far West, precipitation was almost nil from southern areas of Oregon and Idaho southward. However, up to 4 inches of rain fell in the mountains of central Arizona. In Utah, Salt Lake City saw its first rain in 61 days on the 25th, and Cedar City was dampened by a shower of over 2 inches on the 19th. Rainfall was mostly light in the Northwest, though Centralia, Washington, had a 1 hour deposit of 2 inches. Mostly weekend showers in eastern Montana brought as much as 2.94 inches to Glasgow.

The light precipitation pattern over the Great Plains and Mississippi Valley was broken by moderate to locally heavy showers in the central and eastern coast of Texas, much of Illinois, northern Missouri, and eastern Iowa. A rain gage measurement of 1.21 inches was the result of a 38-minute shower at La Crosse, Wisconsin, on the 21st. On the 24th, both Dubuque, Iowa, and Moline, Illinois, received rainfalls of over 2-1/4 inches.

Recurring showers were fairly general over the Southeast, but Apalachicola, Florida, and Birmingham, Alabama, went without measurable rain. A 24-hour rain (continued on page 1017)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OHIO - Melanoplus differentialis ranged from half to full grown in Brown and Highland Counties, southwest area. Heaviest populations 20-30 per square yard along grassy roadsides and field margins. Minor feeding damage occurred in field corn. Populations of M. femurrubrum building up rapidly in southwest, but little economic damage to field crops noted at this time. (Lyon). MISSOURI - Moderate to heavy populations of Melanoplus spp. continue present in southwest. Several fields of corn and grain sorghum in area completely stripped of foliage by M. differentialis. (Munson, Thomas, Wood). WISCONSIN - Migration into crops other than alfalfa becoming more pronounced as maturation nears completion. In most instances, M. femurrubrum comprises at least 90 percent of population, but M. differentialis appears to be increasing percentage-wise this year. This is important because latter species responsible for greater share of corn damage. Egg laying expected soon. (Wis. Ins. Sur.). MINNESOTA - Adult grasshopper survey nearly complete in western half of State. In northwest district, populations generally noneconomic to light, except in western Norman County where few fields had counts of 10-12 M. femurrubrum per square yard. In northeast district, all counts extremely low, only noneconomic populations found. In west central district, populations generally noneconomic to light. Higher counts found in scattered fields in Lac qui Parle, Pope, Swift and Chippewa Counties; counts in threatening range. In central district, counts varied greatly, but generally noneconomic to light; one alfalfafield in Kandiyohi County heavily infested and movement to soybeans noted. Wright County had few fields of alfalfa where counts ranged up to 40-50 per square yard. Scott and Carver Counties in central district had noneconomic to light counts generally; however, two high count fields found. Counts in southwest district generally noneconomic to light, with an occasional field having threatening infestations. M. femurrubrum dominant, with M. differentialis showing up in moderate numbers in some fields. In east central district, Anoka, northern Washington and southern Chisago Counties had high numbers - other counts in district had noneconomic to light infestations. A red clover field in Watonwan County, south central district, had counts exceeding 30 per square yard. (Minn. Ins. Rpt.).

NORTH DAKOTA - Results of 1963 adult grasshopper range survey show 50,760 acres with threatening infestations and 968,720 acres with light infestations. Counties involved include Williams, Dunn, McKenzie, Billings, Golden Valley and Slope. (Brandvik, Wilson). MONTANA - Adult survey during July shows buildup in northern and southeastern counties. Heavy populations observed in Glacier, Toole and Liberty Counties, and reports indicate other counties bordering Cascade County equally infested. In southeastern area, heavy populations noted in Rosebud and Powder River Counties. In Glacier County, some 200,000 acres found infested in Two Medicine and Cut Bank Creek drainage north and south of Browning. (PPC, West. Reg.). UTAH - Grasshoppers serious problem at Fountain Green and still damaging over approximately 50,000 acres of crop and range land in West Gunnison through Fayette and Mayfield south to Sevier County line areas of Sanpete County. (Knowlton, Funk). This outbreak continues over an area of approximately 12,000 acres in northern Sevier County. Limited controls applied over much of large two-county outbreak area. Grasshoppers very numerous and mating and laying eggs 7 miles southwest of Nephi and on Levan Ridge, Juab County; 80 percent M. sanguinipes and 10 percent M. packardii. Sarcophagid fly parasites very abundant, striking moving grasshoppers west from Nephi. (Knowlton). NEW MEXICO - Nymphs of several species averaged 20-52 per 100 sweeps in alfalfa checked at Belen and Los Lunas, Valencia County. (N. M. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - NEW YORK - Remained remarkably scarce in Hudson Valley. Evidently, moth flight being suppressed by cool temperature. Only one moth trapped so far, on August 17. (N. Y. Wkly. Rpt., Aug. 19). NEW JERSEY - None found on sweet corn at New Market, Middlesex County. (Ins.-Dis. Newsltr., Aug. 20). DELAWARE - Sharp increase in adults occurred in blacklight trap collections in Sussex County. (Burbutis, Evans). MARYLAND - Moth numbers increasing steadily in blacklight traps in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). OHIO - Survey of sweet corn producers in central and

southern areas revealed that little economic damage has occurred. Few larvae present in ear tips. Most growers have been treating since early July. Adult flights have been low. (Lyon, Schurr). MICHIGAN - No adults collected to August 23, but a general flight considered imminent for coming week; previous records show that appearance of this pest in State coincides very closely with cotton leafworm (*Alabama argillacea*) which was trapped this year on August 21. (Newman). WISCONSIN - Populations generally very light in most areas, although few eggs present in southern counties and few half-grown larvae present in sweet corn in Iowa County. Few larvae also found in Dane and Rock Counties. (Wis. Ins. Sur.). MISSOURI - Light infestations observed in heads of grain sorghum in southwest and west central areas; counts ranged 1-11 larvae per 100 heads in infested fields. (Munson, Thomas, Wood). OKLAHOMA - Light populations present in grain sorghum in southeast, south central, southwest, north central, west central and northwest areas. (Okla. Coop. Sur.). COLORADO - Larvae present in some corn ears in Crowley County; 1-3 per 10 ears. Light to moderate populations present in Montrose County. (Jenkins, Bulla). WYOMING - Larvae averaged 3 per 100 plants in corn fields near Veteran, Goshen County, and in Wheatland area, Platte County. (Marks). UTAH - Four moths taken in conventional light trap at Delta, Millard County, night of August 19-20. Reports indicate larvae common in Delta area and at Nephi, Juab County; 35-65 percent of ears infested. These counts higher than those encountered from Utah County north. (Knowlton). ARIZONA - Larvae heavy, 75-80 per 100 corn plants, in Graham and Greenlee Counties. (Ariz. Coop. Sur.). NEW MEXICO - Damage noticeable on leaves and tassels of field corn near Estancia, Tarrant County. (N. M. Coop. Rpt.).

FALL ARMYWORM (*Laphygma frugiperda*) - NEW YORK - Several moths trapped in Hudson Valley and scattered groups of whorl-stage sweet corn plants conspicuously damaged. In about 500 immature ears, one found with large larva inside. (N. Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Light infestation found in field corn at Bridgeton, Cumberland County; not severe enough to require control. (Ins.-Dis. Newsltr., Aug. 20). MARYLAND - Infestations in late corn in all sections ranged 1-45 percent of plants. (U. Md., Ent. Dept.). OHIO - Infestations occurring in several corn fields in Lawrence County, south central area. (Crawford). WISCONSIN - Noticeable feeding on late field corn (36-40 inches extended leaf) evident in Walworth, Rock and Dane Counties. (Wis. Ins. Sur.). ALABAMA - Light to medium infestation noted on soybeans in Baldwin County. Medium to heavy infestation in late grain sorghum in Autauga County. Infestations also noted in millet, sorghum and grasses in southern portion of Mobile County. (Wilson, Terrell, Seibels, et al.). ARKANSAS - Ranged 0-2 per 30 feet of row in soybeans in 2 of 13 fields checked in Lonoke County; ranged 0-3 previous week. (Sharp). OKLAHOMA - Light in alfalfa in Tipton area (southwest) and also in grain sorghum and Johnson grass in Caddo County (west central). Reported moderate on soybeans in Tulsa County, with activity also noted in Wagoner and Cherokee Counties (east central). (Okla. Coop. Sur.). TEXAS - Heavy damage occurring on coastal Bermuda grass pastures which are making succulent growth following recent showers in Madison County. (Garrett). COLORADO - Larvae feeding on corn ears in Prowers, Bent and Otero Counties; 3-5 per 10 ears. (Schweissing). ARIZONA - Light infestations found in alfalfa in Greenlee County; severe damage found in corn in same county. (Ariz. Coop. Sur.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Number of moths trapped in Hudson Valley increased sharply; moths common around sweet corn, but not abundant. Infestations ranged 0-6 percent on untreated ears. Larvae mostly in tips, ranging up to third instar. On plants still in whorl stage, infestation ranged up to 10 percent by August 16. (N. Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Difficult to find on field corn in State. (Ins.-Dis. Newsltr., Aug. 20). DELAWARE - Adult populations, as indicated by blacklight trap collections, remain very high in Sussex County. (Burbutus, Evans). MARYLAND - Larvae increasing generally in stalks and ears of corn in all sections; infestations ranged 4-42 percent in earliest field corn. (U. Md., Ent. Dept.). OHIO - Adult and larval populations considerably lower than during previous 3 years at Wooster, Wayne County (northeast). (Schurr). MICHIGAN - Very heavy flight of adults occurred in Ingham County on evenings of August 20 and 21; recent larval feeding evident

on corn foliage in Ingham County August 21. (Newman, Kidd, Wells). WISCONSIN - Egg masses relatively scarce in most areas. Heavy moth flights occurred on nights of August 20 and 21. Development in Ripon-Rosedale area 25 percent third instar, 25 percent fourth instar and 50 percent fifth instar. In Green Lake area, development 95 percent fifth instar and 5 percent pupa. Development 90 percent fifth instar and 10 percent fourth instar in Oakfield area and 100 percent fifth instar in Theresa area. (Wis. Ins. Sur.). MINNESOTA - Development in south central area 20 percent second instar, 50 percent third instar, 13 percent fourth instar, 12 percent fifth instar and 5 percent emergence; development in southwest 15 percent second instar, 46 percent third instar, 3 percent fourth instar, 31 percent fifth instar and 2 percent emergence. Borers per 100 plants 85 in south central area and 50 in southwest. No egg masses found. (Minn. Ins. Rpt.). NORTH DAKOTA - In Cayuga area, Sargent County, development 16 percent pupa and 8 percent emergence. (N. D. Ins. Sur.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ARKANSAS - Development for week ending August 17 in Washington County, northwest, was 30 percent larvae, 60 percent pupae and 10 percent emergence. Egg deposition just beginning. This will give rise to third generation. As of August 24, emergence completed in upper Arkansas River Valley, with egg deposition tapering off. (Ark. Ins. Sur.).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Counts 50 per 100 heads on sorghum in Choctaw County, southeast, and declining counts of 80 per 100 heads observed in Marshall County, south central. (Okla. Coop. Sur.). TEXAS - Heavy, localized infestations appearing in late grain sorghum in Cameron County. (Tex. Coop. Rpt.; Day).

ARMYWORM (*Pseudaletia unipuncta*) - TEXAS - Heavy, localized infestations damaging leaves, whorls and heads of pearl millet in Yoakum County. (Tex. Coop. Rpt.; Hanson).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Heavy, widespread infestations appearing in late grain sorghum in Lamb County (Kimbrough) and in several other northwest area counties. (Newton).

CEREAL LEAF BEETLE (*Oulema melanopa*) - OHIO - No new finds reported. Regulatory personnel continue to devote much time to inspection and certification of equipment and commodities within regulated areas. (Lyon, Walker).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - WYOMING - Adults building up in corn fields in Platte and Goshen Counties. Controls applied to some fields near Wheatland in Platte County. Adults averaged 28 per 100 corn plants in Platte and Goshen County fields. (Marks). ARIZONA - Adults numerous in corn and sorghum fields near Duncan, Greenlee County; a new county record. (Ariz. Coop. Sur.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MICHIGAN - Adults very active and feeding on corn silks and ear tips in Cass County. (Wells). OHIO - Heavy adult populations observed in treated cornfield in Hardin County, northwestern area. Field has a successive 3-year insecticide history. (Klingler, Blair). Adults infesting field corn near Urbana, Champaign County, west central area. (Rinchart). Light adult populations observed in cornfield in Marion County, central area. (Lyon).

CORN LEAF APHID (*Rhopalosiphum maidis*) - CALIFORNIA - Medium adult populations on corn in Fresno, Fresno County. (Cal. Coop. Rpt.). IDAHO - Heavy infestations developed in number of sweet corn seed fields in southwestern area. However, in most instances, corn matured to point that little economic loss anticipated. (Bechtolt, Scott). WYOMING - Populations still found in about 80-85 percent of corn fields surveyed in Goshen County. (Marks). COLORADO - Moderate on corn and grain sorghum in Prowers County. (Schweissing). NEW MEXICO - Moderate to heavy on field corn in Estancia Valley, Torrance County; growers treating. (N. M. Coop. Rpt.). OKLAHOMA - Light on grain sorghum in most areas. (Okla.

Coop. Sur.). OHIO - Feeding on field corn near Eaton, Preble County. (Wadlington, Holdsworth). MARYLAND - Light to heavy infestations continue on corn in eastern and central sections. (U. Md., Ent. Dept.). NEW JERSEY - Prevalent this year. (Ins.-Dis. Newsltr., Aug. 20).

CHINCH BUG (*Blissus leucopterus*) - ALABAMA - Damaging numbers noted in Johnson grass pastures in Sumter County. Considerable numbers noted feeding on corn and late grain sorghum in Autauga County. (Story, Sowell, et al.).

RICE STINK BUG (*Oebalus pugnax pugnax*) - ARKANSAS - Populations in Lonoke County rice fields averaged 35 adults and 18 nymphs per 100 sweeps compared with 27 adults and 24 nymphs previous week. In headed rice, average per 100 heads 4 adults and 1 nymph compared with 4 adults and 2 nymphs previous week. (Sharp).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Populations high on corn in dry areas of Prowers, Bent, Otero, Crowley and Pueblo Counties. Where recent rain occurred, populations dropped. In Mesa, Delta and Montrose Counties, populations remain light in all fields checked. (Schweissing, Jenkins, Bulla). Populations heavy on sorghum in some areas of Prowers, Bent and Otero Counties. (Schweissing). WASHINGTON - Migrating to corn and other crops in large numbers from clover and other spring hosts. (Landis).

SPIDER MITES - NEW MEXICO - Building up on corn near Moriarty, McIntosh and Estancia in Torrance County. Some growers treating. Heavy infestations on field corn near Belen and Los Lunas, Valencia County. (N. M. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Dispersal from initial point of infestation this year in eastern Green County suggested as infestations found in areas not infested previous week. Percentage of winged forms present in infested fields high and potential present for considerable infestation in other areas. Counts ranged 15-30 per sweep in eastern Green County; few found in alfalfa west of Beloit, Rock County, and near Mazomanie, western Dane County. (Wis. Ins. Sur.). SOUTH DAKOTA - Collected in Union County; first collection in this county in last two years. Averaged 50 per 100 sweeps. (Hintz). MISSOURI - Moderate to heavy infestations continue in southwest area; counts ranged 3-60 per sweep. Light to moderate infestations observed in west central area; counts 0-25 per sweep. (Munson, Thomas, Wood). OKLAHOMA - Light infestations common, with counts ranging from less than 25 per 100 sweeps in southeast and south central areas to 50-150 in southwest; 50-75 percent winged forms in southwest. (Okla. Coop. Sur.). COLORADO - Increasing in some fields of alfalfa in Prowers, Bent, Otero, Crowley and Pueblo Counties. Populations much higher in Pueblo and west end of Crowley County than in other areas of Arkansas Valley. Counts ranged 400-7,000 per 100 sweeps. Some loss of stand in newly planted alfalfa in Crowley County. Only trace numbers being found in Mesa, Delta and Montrose Counties; 10-50 per 100 sweeps. (Schweissing, Bulla, Jenkins). NEW MEXICO - Light, spotted infestations noted in Valencia and Torrance County alfalfa; winged adults abundant in some fields. (N. M. Coop. Rpt.). UTAH - Rare in alfalfa seed fields in Fillmore-Hatton area of Millard County; parasites and predators numerous. (Knowlton). NEVADA - None found in Douglas County alfalfa. (Cooney).

PEA APHID (*Acyrtosiphon pisum*) - WASHINGTON - Populations on alfalfa have been very low past weeks in eastern area; increasing, however, with cooler weather. (Landis). NEVADA - Populations extremely low; highest counts averaged 5 per sweep in Douglas County alfalfa. (Cooney). UTAH - Population low in alfalfa seed fields in Fillmore-Hatton area of Millard County; parasites and predators numerous. (Knowlton). WYOMING - Counts per 100 sweeps in alfalfa averaged 390 in Platte and Goshen Counties and 300 in Weston and Niobrara Counties. (Marks). COLORADO - Populations continue light in all areas of State. (Schweissing, Jenkins, Bulla). WISCONSIN - Increasing rapidly in southeast; counts as high as 100 per sweep. Decreased in Walworth County, west, and ranged 0-5 per sweep in other southern counties. (Wis. Ins. Sur.). MARYLAND - Ranged 10-75 per sweep on some alfalfa in Frederick County. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Winged forms commonly swept from alfalfa in Kenosha County. (Wis. Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - NEW JERSEY - Ranged 22-204 and averaged 97 per 25 sweeps in 10 fields of alfalfa checked in central area. (Ins.-Dis. Newsltr., Aug. 20). DELAWARE - Averaged 10 per 10 sweeps on alfalfa in Kent County. (Burbutis, Evans). MARYLAND - Continues a problem in untreated or mismanaged alfalfa in all sections; moderate to heavy on soybeans in Queen Annes and Wicomico Counties. (U. Md., Ent. Dept.). OHIO - Adults average 70 per 50 sweeps at Wooster, Wayne County. (Williams, Miller). MISSOURI - Counts in alfalfa ranged 5-40 per sweep in southwest; several fields showing yellowing and loss of leaves due to infestations of leafhoppers and aphids. (Munson, Thomas, Wood). WISCONSIN - Populations fluctuate considerably, although yellowing evident in many fields in southeast and southern areas. Counts range from 1-2 per sweep in southwest to 15 per sweep in southeast and south, and 30-50 per sweep in some fields near Broadhead and Mazomanie. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Light but increasingly common infestations in south central (2 per 10 sweeps) and in southwest (1-5 per 10 sweeps) areas. (Okla. Coop. Sur.). ARIZONA - Populations continue to increase on alfalfa in Pinal, Maricopa, Yuma and Graham Counties; counts average 2,000 per 100 sweeps. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEVADA - Averaged 15 per sweep in Douglas County alfalfa fields. (Cooney). ARIZONA - Infestations remain low in alfalfa in Graham and Greenlee Counties; averaged 50 per 100 sweeps. Causing damage to seed alfalfa in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Averaged 1-3 adults and nymphs per sweep in seed alfalfa fields near Roswell, Chaves County. (N. M. Coop. Rpt.). WYOMING - Adults and nymphs averaged 86 per 100 sweeps in Platte and Goshen County alfalfa. (Marks). UTAH - Adults and nymphs of all sizes still infesting alfalfa seed fields in Fillmore-Hatton area of Millard County; 80 percent L. elisus and 10 percent L. hesperus. L. elisus (50 percent), L. hesperus (25 percent) and Lygus spp. very numerous in all stages in Summit County alfalfa. (Knowlton). WASHINGTON - More abundant than previously on alfalfa and clover; species mostly L. elisus. (Landis).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults averaged 3 per 10 sweeps on alfalfa in eastern Kent County. (Burbutis, Evans). MARYLAND - Adults moderate on alfalfa in Queen Annes County. (U. Md., Ent. Dept.). OKLAHOMA - Large number of nymphs present in alfalfa in Tipton area, with lighter numbers present throughout southwest and south central areas. (Okla. Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults per 100 sweeps in alfalfa averaged 33 in Platte and Converse Counties and 42 in Goshen County. (Marks).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Counts 180 per 50 sweeps in Pickaway County, south central area, compared with 15 per 50 sweeps in Brown County, southwest area; host alfalfa in both counties. (Lyon).

AN ALFALFA SEED CHALCID (Bruchophagus roddi) - OKLAHOMA - Damaging populations present in most alfalfa being carried over for seed in southwest and west central areas. (Okla. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Larvae ranged 0-10 per sweep on alfalfa in Frederick and Queen Annes Counties; few fields beginning to show injury. (U. Md., Ent. Dept.). UTAH - Four adults and 5 larvae per 20 sweeps at Coalville and 4 adults and 190 larvae per 20 sweeps at Kamas; damage obvious in latter area. Light damage common at Snyderville, Hoytsville, Coalville and Wanship areas of Summit County. (Knowlton).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - NORTH DAKOTA - Adults 23 per sweep on alfalfa in Burleigh County. (Wilson). Abundant in southwestern area. (N. D. Ins. Sur.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Adults averaged 10-25 per 100 sweeps in Valencia County alfalfa. (N. M. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae abundant on alfalfa near Estancia and Moriarty, Torrance and Santa Fe Counties. Lighter populations of adults noted in alfalfa at Los Lunas and Belen, Valencia County. (N. M. Coop. Rpt.). ARIZONA - Larvae causing severe damage to alfalfa in Graham, Greenlee, Yuma and Pinal Counties. Large flights of adults still present in nearly all fields, but particularly in fields left for seed. Counts average 120-250 per 100 sweeps. (Ariz. Coop. Sur.). UTAH - Moderately numerous in some alfalfa fields north of Manti in Sanpete County. Becoming more numerous but generally light in Summit County alfalfa. Generally, below normal numbers present. (Knowlton).

A YELLOW-STRIPED ARMYWORM (Prodenia sp.) - UTAH - Outbreak damaging several thousand areas of seed and forage alfalfa in Fillmore-Hatton area of Millard County. Number of seed fields treated. (Knowlton).

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Heavily infesting one 20-acre field of soybeans in Robeson County; treatments applied. (Robertson). ALABAMA - Considerable infestation appearing on peanuts throughout southeast; some peanuts being harvested. Heavy numbers noted on soybeans in Elmore County. (Wilson, Eden, Bond, et al.). ARKANSAS - Ranged 0-18 per 30 feet of row in soybeans in Lonoke County compared with 0-11 previous week; 5 of 13 fields scouted infested. (Sharp). OKLAHOMA - Medium infestations reported on soybeans in Tulsa County. Good control apparently received in Caddo County peanuts where large numbers of dead larvae found in fields checked in Binger-Eakly area. Medium infestations reported on peanuts in Bryan County, south central area, and Pittsburg County, east central area. Light to moderate counts found on alfalfa in Tillman, Jackson and Kiowa Counties (1-8 per 10 sweeps) (southwest) and Choctaw County (1-10 per 10 sweeps) (southeast). (Okla. Coop. Sur.). MISSOURI - Larvae of this insect most common lepidopterous larvae found in alfalfa in extreme southwest; counts ranged 0-5 per sweep. In 4 fields, counts averaged 1.4 per sweep. (Munson, Thomas, Wood). NEW MEXICO - Larvae of this species and cabbage looper (Trichoplusia ni) averaged 3-5 per 100 sweeps on alfalfa in Valencia County. (N. M. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Heavy infestation noted on soybeans in Elmore and Baldwin Counties. (Wilson, Eden, Davis, et al.).

BEET ARMYWORM (Spodoptera exigua) - ALABAMA - Considerable numbers noted in localized fields in Baldwin County. Pest has moved from cotton in Autauga County to isolated soybean fields in Elmore County. (Wilson, Terrell, Davis, et al.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Moderate numbers of small larvae on soybeans in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). ARKANSAS - Ranged 1-29 per 30 feet of row in soybeans in Lonoke County compared with 1-28 previous week. (Sharp).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - ALABAMA - Considerable infestation noted on peanuts and soybeans in southern area. (Wilson, Eden, et al.).

CUTWORMS - ALABAMA - Undetermined species feeding rather heavily on soybeans in Baldwin County. (Smallwood, Fairley).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - MARYLAND - Adults and larvae causing moderate to heavy foliage injury to several soybean fields in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). NEW MEXICO - Heavy, spotted infestations skeletonizing foliage of beans in Estancia Valley. (N. M. Coop. Rpt.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Moderate numbers of adults noted on soybeans in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.). ARKANSAS - Ranged 0-163 per 30 foot of row in soybeans in Lonoke County compared with 0-52 previous week; 12 of 13 fields scouted infested. (Sharp).

A WHITE-FRINGED BEETLE (*Graphognathus* sp.) - ALABAMA - Extremely heavy population causing heavy damage to field of soybeans in Baldwin County. (McQueen).

SPIDER MITES (*Tetranychus* spp.) - MARYLAND - Several heavy infestations occurring on soybeans in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.).

SOD WEBWORMS - NEW JERSEY - Caused severe damage to lawns in Cumberland County. (Ins.-Dis. Newsltr., Aug. 20). MISSOURI - Reports of severe damage to lawns continue throughout State; heavy moth flight of *Crambus* spp. observed in southern and central areas. (Munson, Thomas, Wood). ILLINOIS - Damage has become quite extensive in east central and northeast areas. (Ill. Ins. Rpt.). OHIO - *Crambus* sp. damaging lawn locally in Clermont County, southwest. (Hamilton, Holdsworth).

CUTWORMS - ARIZONA - *Melipotis indomita* larvae infesting mesquite in Yuma City, Yuma County. (Ariz. Coop. Sur.). CALIFORNIA - *Peridroma saucia* heavy in pasture grass in Fernadale, Humboldt County. (Cal. Coop. Rpt.). OREGON - *Agrotis ipsilon* damage to spring-planted alta fescue appearing in Linn County. (Massie).

A LAWN CHINCH BUG (*Blissus leucopterus* prob. *insularis*) - TEXAS - Damage to St. Augustine grass lawns in east and southeast areas continues. Distribution of damaging populations apparently presently confined to area east of a line extending from Dallas to Port Lavaca. (Newton). ALABAMA - Rather severe damage noted to St. Augustine grass lawns in localized areas of Baldwin County. (McQueen).

SUNFLOWER MOTH (*Homoeosoma electellum*) - NORTH DAKOTA - Larvae of this species and banded sunflower moth (*Phalonia hospes*) working sunflower heads and seed in eastern part of State. Number of heads infested ranged 40-75 percent. In some cases, heads severely deformed. (N. D. Ins. Sur.).

A SUNFLOWER MOTH (*Suleima helianthana*) - CALIFORNIA - Heavy on sunflower plants. Larvae working in stems in Selma, Fresno County. (Cal. Coop. Rpt.).

A THRIPS (*Frankliniella occidentalis*) - CALIFORNIA - Heavy populations on commercial sunflower in Sycamore, Colusa County. (Cal. Coop. Rpt.).

FRUIT INSECTS

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - FLORIDA - One male collected in Steiner trap at Miami Springs, Dade County. (Afford, Aug. 19). This is northern extension of current infestation and first adult caught since July 22. (Fla. Coop. Sur.).

A PINK CITRUS RUST MITE (*Aculus pelekassi*) - FLORIDA - Moderate on sweet orange at Lisbon, Lake County (Bentley, Aug. 12); at Thonotosassa, Hillsborough County (Simmons, Aug. 16); and single tree at Winter Haven, Polk County (J. C. Denmark, July 26).

Citrus Insect Situation in Florida - Mid-August - On leaves CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 80 percent of groves (norm 64 percent); 62 percent economic (norm 49 percent). On fruit CITRUS RUST MITE infested 78

percent of groves (norm 71 percent); 64 percent economic (norm 54 percent). Population above average and at high level. Downward trend started which will continue through September. Some groves, mostly in northern areas of citrus belt, will continue to show increases, especially on fruit. Highest districts upper east coast, west coast, Gainesville and Orlando. CITRUS RED MITE (Panonychus citri) infested 64 percent of groves (norm 51 percent); 32 percent economic (norm 29 percent). Population reached summer peak at moderate level in late July. Scattered groves may harbor important infestations. Highest districts upper east coast, Orlando, Brooksville and Gainesville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 53 percent of groves (norm 38 percent); 29 percent economic (norm 19 percent). Population above average but dropped to moderate level and will decline further. A few important infestations will occur. Highest districts Orlando and Gainesville. PURPLE SCALE (Lepidosaphes beckii) infested 59 percent of groves (norm 65 percent); 8 percent economic (norm 6 percent). Few if any heavy infestations expected. GLOVER SCALE (L. gloverii) infested 50 percent of groves (norm 21 percent); 16 percent economic (norm 1 percent). Populations will continue above average. Scattered groves will have heavy infestations in September. CHAFF SCALE (Parlatoria pergandii) infested 49 percent of groves (norm 25 percent); 11 percent economic (norm 1 percent). Population above average but decreasing. A few heavy infestations will develop on fruit. YELLOW SCALE (Aonidiella citrina) infested 27 percent of groves (norm 10 percent); 3 percent economic (norm 1 percent). Population above normal and further increase expected in September. FLORIDA RED SCALE (Chrysomphalus aonidium) infested 16 percent of groves (norm 58 percent); 4 percent economic (norm 12 percent). No important infestations expected. BLACK SCALE (Saissetia oleae) infested 38 percent of groves (norm 45 percent); 22 percent economic (norm 24 percent). Population near normal and will decrease. Indian River district high. Little change expected from current normal level of WHITEFLIES. Inspection of interior fruit and leaves for yellow scale, Glover scale and chaff scale urged. Citrus rust mite continues major control problem. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CODLING MOTH (Carpocapsa pomonella) - NEW JERSEY - Few second-brood moths continue to emerge in cages containing first-brood infested apples. Fresh entries also present in abandoned orchards. (Ins.-Dis. Newsltr., Aug. 20). MICHIGAN - Adult activity decreasing; only 3 emerged from Kent County cage and only 22 taken at Livingston County blacklight trap during week ending August 19. Recent larval entries observed in Ingham County August 19; moderate problems exist in northwest area orchards. (Siefert, Mullett). MINNESOTA - Second-generation larvae continue to enter fruit; fruit should be protected with proper insecticide. (Minn. Ins. Rpt.). COLORADO - Injury noted on pears being harvested in Mesa County. (Bulla). NEW MEXICO - Fruit growers in Espanola Valley having control difficulty. Percentage of infested fruit rather high even in treated orchards. Light on apple trees at Mountainair, Torrance County. (N. M. Coop. Rpt.). UTAH - Unusually low; only 5 percent of apples on 5 untreated orchards show damage. (Knowlton).

APPLE-AND-THORN SKELETONIZER (Anthophila pariana) - OREGON - Heavy damage in one apple orchard observed in Linn County. (Linn).

PEACH TWIG BORER (Anarsia lineatella) - COLORADO - Appearing in Standard Elberta peach crop where controls not used in Mesa County. (Bulla).

APPLE MAGGOT (Rhagoletis pomonella) - NEW JERSEY - No flies emerged in cages at Cranbury during past week, but previously emerged flies still active and laying eggs. In northern counties, pest could become problem in poorly sprayed orchards, or where nearby abandoned orchard serves as source of infestation. (Ins.-Dis. Newsltr., Aug. 20). OHIO - Activity decreasing in untreated northeastern orchards. (Still, Forsythe). MINNESOTA - Activity nearly ceased; however, growers urged to continue controls, especially to late varieties to be put into cold storage. (Minn. Ins. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - OHIO - Considerable oviposition and feeding damage noted on untreated apples at Columbus, Franklin County. (Lyon).

Adults noted on plum and apple trees in Tuscarawas County (Galford); summer-brood adults continue emergence in fairly large numbers at Wooster, Wayne County. (Forsythe).

JAPANESE BEETLE (Popillia japonica) - OHIO - Adult feeding continues on plum and cherry foliage at Wooster, Wayne County. (Forsythe).

EUROPEAN RED MITE (Panonychus ulmi) - NEW JERSEY - Continues a problem in many apple and peach orchards. In most cases, 2 or more miticide applications required to clean up established populations. (Ins.-Dis. Newsltr., Aug. 20). DELAWARE - Infestations continue in some Delicious apple plantings. (MacCreary). OHIO - Very light on treated apple trees at Columbus, Franklin County; counts ranged 1-2 per leaf in contrast with 30-80 per leaf on same trees in 1962. (Lyon). MICHIGAN - Populations still require controls in southeast; infestations moderate in northwest area. (Siefert, Mullett).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Abundant in some apple orchards in Mesa and Delta Counties; foliage bronzing occurring in Delta County where adequate controls not used. (Bulla).

A SPIDER MITE (Tetranychus mcDanieli) - NEW MEXICO - Light and building up on apple trees at Belen. Heavy and severely damaging foliage of apple trees in Espanola Valley, Rio Arriba County. (N. M. Coop. Rpt.).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - CALIFORNIA - Heavy on Palomino grapes at Snelling, Merced County. (Cal. Coop. Rpt.).

GRAPE LEAF FOLDER (Desmia funeralis) - CALIFORNIA - Light to medium larval populations feeding on wild grapes in Orange County. (Cal. Coop. Rpt.).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Considerable increase noted on pecans in Mobile and Autauga Counties. (Seibels et al.). OKLAHOMA - This species and Monellia costalis ranged light to moderate on pecans in Okfuskee County; causing honeydew on leaves. (Okla. Coop. Sur.).

AN APHID - TEXAS - Light to moderate, spotted infestations of unspecified species occurring on pecan trees in Comal County. (Tex. Coop. Rpt.; Massey).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Noted in pecan orchards in central part of State; adults feeding and ovipositing in Russell County. (Amling, Eden et al.).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Noted in pecan orchards in central part of State. (Amling, Eden et al.).

AVOCADO BROWN MITE (Oligonychus punicae) - CALIFORNIA - Locally heavy on avocado trees in Vista, San Diego County. (Cal. Coop. Rpt.).

GREENHOUSE THRIPS (Heliethrips haemorrhoidalis) - CALIFORNIA - Spotty, medium infestations on avocado limbs in Vista, San Diego County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

POTATO APHID (Macrosiphum euphorbiae), - OHIO - Appearing on potatoes at Columbus, Franklin County; both pink and green forms present. Ranged 20-25 nymphs and adults per leaflet in heaviest concentrations. (Lyon). WISCONSIN - Colonies forming on upper leafy portions of potato vines in Kenosha County. (Wis. Ins. Sur.). COLORADO - Increasing on potatoes in Saguache, Rio Grande, Alamosa and Costilla Counties; counts light in most fields with 100-200 per 100 leaves. (Jenkins).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Populations of immatures and adults low due to week of hot weather on potatoes and sugar beets in eastern area. (Landis). WISCONSIN - Colonies increasing on lower leaves of commercial potatoes in Kenosha County; colonies still light on peppers in Walworth County. (Wis. Ins. Sur.). MICHIGAN - Populations building up in experimental pepper plots in Berrien and Macomb Counties. (Wells). DELAWARE - Present to common on young cabbages in Kent County and fairly common on some peppers in Sussex County. (Burbutis, Evans).

Potato Aphids in Maine - Sharp drop in numbers of all aphid species in 4 of 5 locations on Aroostook Farm, Aroostook County, on foliage on untreated potatoes. Little change in populations on other location. Present average of 28 aphids of all species on 3 leaves per plant represents reduction of 33 percent. Chiefly due to action of entomogenous fungi and predators. Aphis nasturtii, Macrosiphum euphorbiae, Myzus persicae and Acyrtosiphon solani involved. (Shands).

BEEF LEAFHOPPER (Circulifer tenellus) - COLORADO - Caused trace amounts of curly top of tomatoes in Otero County. (Schweissing). UTAH - Now common on Russian-thistle at Nephi, Juab County; 3 percent of plants show curly top in garden. (Knowlton).

A LEAFHOPPER (Empoasca filamenta) - WASHINGTON - Moderate (50 or more in 10 sweeps) in potatoes; causing etiolation of foliage at Quincy, Grant County. (Landis).

A WHITEFLY (Aleyrodes spiraeoides) - WASHINGTON - More abundant than formerly in potatoes at Quincy, Grant County; averaged 100 adults or more in 10 sweeps. (Landis).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - WASHINGTON - Populations low in potatoes in eastern area following hot weather. Very few larvae present. (Landis). MARYLAND - Moderate on 18 acres of tomatoes in Ingleside, Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Adults numerous and causing heavy feeding injury to tomatoes and peppers on truck farm in Sussex County. (Burbutis, Evans).

TUBER FLEA BEETLE (Epitrix tuberis) - COLORADO - Adults present in potato fields in Montrose County; range 30-50 per 100 sweeps. (Bulla).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Tentatively determined as pest responsible for leaf-mining injury reported August 2 on potatoes in Monroe County; since earlier report, injury has continued and adults have emerged. (Newman, Guyer).

TOMATO HORNWORM (Protoparce quinquemaculata) - WISCONSIN - Relatively heavy feeding observed in several acres of tomatoes in Walworth County. (Wis. Ins. Sur.). MICHIGAN - Only 3 adults collected in blacklight traps; 2 from Newaygo County and 1 from Livingston County. (Newman).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Egg counts average 1 per 100 leaves on tomatoes; light trap counts of adults range 7-8 per night in Otero, Bent and Prowers Counties. (Schweissing).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Egg masses observed in "blackhead" stage on peppers in Macomb County August 19. (Newman, Kidd, Wells).

A SPRINGTAIL (Onychiurus fimentarius) - CALIFORNIA - Medium on potatoes in Winsor, Sonora County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - NEW JERSEY - Large numbers noted in field of young broccoli in southern area; 3-4 large larvae per plant, plus many small larvae. (Ins.-Dis. Newsltr., Aug. 20). DELAWARE - Present on young cabbage in Kent County; abundant on older cabbage and causing heavy feeding injury in

southern Sussex County; present to fairly common on watermelons and tomatoes in Sussex County. (Burbutis, Evans). MARYLAND - Larvae continue to appear in tomato fields near harvest in Snow Hill area, Worcester County; adult collections continue to increase at Snow Hill. (U. Md., Ent. Dept.). NEW MEXICO - Larvae destroyed several plantings of cabbage and cauliflower in home gardens in Belen area, Valencia County. (N. M. Coop. Rpt.).

ZEBRA CATERPILLAR (Ceramica picta) - OHIO - Feeding damage moderate to heavy on cabbage at Ripley, Brown County; 15-20 larvae per cabbagehead collected. (Lyon).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW YORK - Active on crucifers in Orleans County. (N. Y. Wkly. Rpt., Aug. 19).

BLACK CUTWORM (Agrotis ipsilon) - OREGON - Feeding on broccoli in Washington County. (Hanna).

CABBAGE APHID (Brevicoryne brassicae) - NEW YORK - Becoming a problem in most areas of State where crucifers are grown. Weather conditions appear very favorable for aphid development. Populations numerous and increasing in Orleans County. (N. Y. Wkly. Rpt., Aug. 19). DELAWARE - Common to abundant on cabbage in several areas of Sussex County. (Burbutis, Evans). NEW MEXICO - Heavy and a problem on cabbage and cauliflower in Belen area, Valencia County. (N. M. Coop. Rpt.). OREGON - Continually present now on cauliflower, broccoli and brussels sprouts in Multnomah, Marion and Washington Counties due to improper dusting and spraying. (Hanna).

A FLEA BEETLE - OHIO - Undetermined species caused severe damage to many cabbage plants in southwestern area. Leaves perforated with 60-80 adults per plant in many situations. (Lyon).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - DELAWARE - Fairly common on watermelons, cantaloups and squash in areas of Sussex County. (Burbutis, Evans). MARYLAND - Light to moderate on cucumbers in Queen Annes and Wicomico Counties. (U. Md., Ent. Dept.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Fairly common on watermelons, cantaloups and squash in areas of Sussex County. (Burbutis, Evans).

SAP BEETLES - CALIFORNIA - Carpophilus hemipterus and C. humeralis light on cantaloup fruit in Huron, Fresno County. (Cal. Coop. Rpt.). NORTH DAKOTA - Large numbers of Glischrochilus quadrisignatus adults appearing on melons in Fargo area. (N. D. Ins. Sur.).

SQUASH VINE BORER (Melittia cucurbitae) - OHIO - Caused severe injury to home garden squash in Suffield, Portage County; 3 borers per stem noted with approximately 15 of 20 plants either dead or wilted. (Kelly).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Very common on cantaloup and watermelons in southwestern Sussex County. (Burbutis, Evans).

MELON APHID (Aphis gossypii) - DELAWARE - Very heavy on small watermelon planting in southern New Castle County. (Kelsey). MARYLAND - Light on garden squash at Sudlersville, Queen Annes County. (U. Md., Ent. Dept.).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Damaged garden plants in several areas. (Okla. Coop. Sur.).

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Trace numbers in sugar beets in Minto area. (N. D. Ins. Sur.).

SPINACH LEAF MINER (Pegomya hyoscyami) - COLORADO - Trace numbers present on spinach in Costilla County. (Jenkins).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ARIZONA - Causing light damage to beans in gardens in Greenlee and Graham Counties. (Ariz. Coop. Sur.). NEW MEXICO - Problem on beans in gardens in Valencia and Bernalillo Counties; adults and larvae extremely abundant in several gardens checked. (N. M. Coop. Rpt.). COLORADO - Light on all fields of pinto beans checked in Montrose County. (Bulla). OHIO - Caused severe leaf feeding damage in southwestern area; most garden bean leaves 75-100 percent skeletonized. Ranged 8-10 larvae per leaf in many gardens; 95 percent in larval stage with 5 percent adults. (Lyon).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Noted in green beans and peas in Oklahoma County. (Okla. Coop. Sur.).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Light on beans in Robbins, Sutter County. (Cal. Coop. Rpt.).

BEAN APHID (Aphis fabae) - DELAWARE - Numerous on lima beans locally in Sussex County. (Burbutis, Evans). WASHINGTON - Very scarce on sugar beets in eastern area although populations increasing earlier. (Landis).

STRAWBERRY LEAF ROLLER (Ancylics comptana fragariae) - NORTH CAROLINA - Severe in strawberry field in Columbus County. (Martin).

PEA LEAF WEEVIL (Sitona lineata) - OREGON - Heavy feeding on strawberries noted in Marion County. (Hanna).

AN UNDERWING MOTH (Catocala sp.) - OREGON - Larvae causing extensive damage, mainly to raspberries and boysenberries, in some Jackson County home gardens. (Berry).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WASHINGTON - All stages migrating to potatoes, sugar beets and other crops in large numbers from clover and other spring hosts. Damages starting rather generally on potatoes and some fields will be seriously damaged if mites not controlled. About 3,000 acres infested in Adams, Grant and Yakima Counties. (Landis). COLORADO - Quite numerous in home gardens in Larimer County. (Hantsbarger). NEW JERSEY - Recent hatch of eggs created moderately heavy populations on strawberries and raspberries in some areas. (Ins.-Dis. Newsltr., Aug. 20).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Averaged 2 per 10 sweeps on lima beans in Kent County. (Burbutis, Evans). MARYLAND - Moderate to heavy on late snap beans in Wicomico County. Common on peppers and squash in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). NORTH DAKOTA - Averaged 5 per sweep on potatoes in Traill County (Schulz); up to 10 per sweep on potatoes near Glasston (N. D. Ins. Sur.).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - MICHIGAN - Populations low in Ingham County; aster yellows, indicative of leafhopper activity 4 weeks ago, evident on carrots in Newaygo County and has infected 10 percent of lettuce field in Ingham County. (Janes). WASHINGTON - Adult flights heavy since August 10 in eastern area. (Hagel).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 42 per 100 sweeps in bean fields of Platte and Goshen Counties; harvest just beginning in these areas. (Marks). WASHINGTON - Lygus spp., mostly L. elisus, more abundant than previously on sugar beets. All stages in eastern area generally. (Landis).

ONION THRIPS (Thrips tabaci) - COLORADO - Light to moderate on onions in Prowers, Bent and Otero Counties. (Schweissing). WASHINGTON - Moderate on potatoes in area of heavy damage to potatoes in 1962 in Othello, Adams County. (Powell).

A CRICKET (Gryllus sp.) - ARIZONA - Heavily damaged field of lettuce in Nunez area. (Ariz. Coop. Sur.).

SLUGS - COLORADO - Problem in home gardens in Jefferson, Boulder and Larimer Counties. (Hantsbarger).

TOBACCO INSECTS

GRASSHOPPERS - WISCONSIN - Damage to tobacco increasing as greater percentage of grasshoppers become full grown. (Wis. Ins. Sur.).

HORNWORMS (Protoparce spp.) - MARYLAND - Light on tobacco in St. Marys County. (U. Md., Ent. Dept.). OHIO - Caused light feeding damage to several tobacco plants at Ripley, Brown County. (Wilson).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Treatments continue necessary in St. Marys County; light on tobacco in Prince Georges County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults generally abundant on tobacco in Prince Georges and St. Marys Counties. (U. Md., Ent. Dept.).

Weather of the week ending August 26 (continued from page 1004)
at Meridian, Mississippi, exceeded 3 inches when measured at 8 a.m. on the 21st. On the 20th, tornadoes hit Forsyth, Georgia, and Eutaw Springs, South Carolina; damage to buildings and trees was reported from the latter community.

Farther north, Caribou, Maine, had almost daily rains, Northern Virginia and much of Maryland and Delaware received some drought relief by heavy rains on the 19th and 20th, but New York and Pennsylvania had mostly light amounts. Most notable were the evening showers at Washington, D. C., which flooded the National Airport Terminal and many streets in the area, especially in Alexandria, Virginia. The Airport measurement was 4.81 inches on the 20th, most of which fell in a very short time. (Summary supplied by U.S. Weather Bureau).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Light to moderate infestations general over rolling plains area, northwest. Heavy infestations reported from areas of Dickens County. (Rummel, Owen). OKLAHOMA - Populations continue noneconomic throughout cotton-growing areas; percent infestation ranged 0-13 in southwest, 1-8 in south central and 10-25 in southeast. Twenty-five percent infestation in untreated field. (Okla. Coop. Sur.). ARKANSAS - Control generally good; infestation counts down. (Wkly. Cott. Ins. Rpt., Aug. 16). LOUISIANA - Present in most fields in Tallulah area, but adequate controls being maintained in general. Heavy infestations present in number of fields where application schedules hampered by rains and frequent showers. Some movement of weevils from maturing fields occurring. (Smith et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Attala, Choctaw, Copiah, Lowndes, Monroe and Quitman Counties; controls applied. Damage severe in spots. (Ouzts). TENNESSEE - Some light migration occurring from southern counties to north in western area. Dry weather causing a high percent of larval mortality. Counts made in known infested fields ranged 1-86 and averaged 21 percent. Adults rather numerous in cotton blooms; first time this condition observed this season. Conditions favorable for weevil increase; some boll injury occurring in heavily infested fields. (Locke). ALABAMA - General "hatch out" of third-generation weevils noted during past 10 days in central and southern part of State. As high as 20 young weevils noted in some blooms. Extensive feeding and egg laying noted on half grown and young bolls in top of cotton. Extreme southern part of State probably passed point of damage since most areas now harvesting. Central area and especially irrigated cotton and younger cotton further north suffering damage. Percent infestation in fields checked by county ranged 0-65 in Cherokee, 10-80 in Chilton, 13-15 in Houston, 10-90 in Conecuh, 18-78 in Lee, 1-25 in Madison, 35-90 in Monroe, 6-42 in Montgomery, 10-85 in Greene, 10-40 in Pickens, 12 in Talladega, 6-33 in Tallapoosa and 3-30 in Elmore. (McQueen et al.). GEORGIA - Square counts made in 33 northwest area cotton fields. Percent punctured squares ranged 5-40 (averaged 17). (Johnson). SOUTH CAROLINA - Locally serious; controls generally good. (Cott. Ltr., Aug. 19). Numbers continue to increase in inadequately treated fields in Florence area. Infestations in older cotton seem extremely high due to decreasing numbers of squares. Continued control must be maintained to make potential excellent top crop. Larval infestation in treated fields ranged 0.28-90.9 percent and range in untreated fields 93.1-100 percent. (Taft et al., Aug. 21). NORTH CAROLINA - Percent punctured squares by counties as follows: Robeson, 95, 60, 10 (Johnston, Clark, Calhoun, Mears); Scotland, 60 (Johnston, White); Columbus, 100 (Read); Duplin, 100 (Fedoranko); Brunswick, 20 (Bowen); Sampson, 20 (Morgan); Union, 36 (Savage); Bladen, 14, 18, 94, 22 (Bowers, Waters, Lee). Counts in Bladen County made previous week; counts recorded are for 1 field each and most fields not treated or poorly treated. (Mount).

BOLLWORMS (*Heliothis* spp., et al.) - ARKANSAS - Activity decreased statewide, but in some areas, egg counts zoomed. Larval counts in southeast lower than previous week, but egg counts very high. Control in southeast good; only 429 fields with above 6 percent damaged squares. Egg, larval and damaged square counts in central, northeast and upper Arkansas River Valley areas down. Egg, larval and damaged square counts in southwest remain the same. Fourth-generation moth emergence underway and egg deposition expected to increase. (Wkly. Cott. Ins. Rpt., Aug. 16). LOUISIANA - Major problem generally in Tallulah area. Some eggs and larvae in plant terminals, and even more down in plants on squares and blooms. Rigid control schedules still necessary in all productive cotton. (Smith et al.). MISSISSIPPI - Light to heavy infestations present in delta area, and in Attala, Choctaw, Copiah, Monroe, Prentiss and Quitman Counties; controls applied. Egg deposition general over entire State. (Ouzts). TENNESSEE - Continue a problem in late cotton in western area, and controls still being applied in some cases. (Locke). ALABAMA - Considerable increase in infestation noted throughout State. Adults plentiful in cotton. Number of larvae per 100 terminals in fields checked by

county ranged 15-18 in Cherokee, 18-25 in Houston, 10-30 in Conecuh, 9-14 in Lee, 1-9 in Madison, 20-40 in Monroe, 0-5 in Montgomery, 3 in Greene, 0-8 in Pickens, 8-10 in Talladega, 3-12 in Tallapoosa and 2-10 in Elmore. (McQueen et al.). GEORGIA - Egg counts in 33 northwest area cotton fields ranged 6-33 and averaged 9 per 100 terminals. Larvae ranged 3-35 and averaged 11 per 100 terminals. (Johnson). SOUTH CAROLINA - Rapidly becoming major pests of season; situation serious. (Cott. Ltr., Aug. 19). In Florence area, infestations of large larvae increasing rapidly in many fields with numbers of adults high in fields. Total of 4,155 collected in light trap week ending August 21 compared with 5,344 previous week; total for season 11,691. (Taft et al.). NORTH CAROLINA - Infesting 10 percent of terminals in Wayne County field. Other fields observed in County well treated and only few eggs found. (Mount). Infestation of terminals 14 percent in Duplin County field (Fedoranko), 12 percent in Robeson County field (Calhoun) and 40 percent in Scotland County field (Johnston, White).

BOLLWORM (*Heliothis zea*) - CALIFORNIA - Economic counts being found in more Kern County fields than during previous week. (Black, Aug. 10). Very little evidence of injury noted in Madera County; counts very low. (Johnson, Aug. 15). ARIZONA - Large numbers of larvae still persist in Graham, Greenlee, Yuma and Pinal Counties. In Graham County, 2 larvae and 4 infested bolls found per 25 squares examined in some fields. Second-generation larvae occurring in Graham County. Counts of 120-150 larvae per 100 plants not unusual in Pinal County. Larvae increasing in Maricopa County. (Ariz. Coop. Sur.). TEXAS - Activity increasing in west and northwest areas; controls necessary in many counties. (Rummel, Owen). OKLAHOMA - Controls continuing in irrigated areas and dry land areas which received recent rains. Percent infestation ranged 4-12 in southwest (one heavier count of 24 percent noted in Kiowa County), 3-20 in south central, 16-20 in southeast (20 percent untreated), 0-6 in west central and 10-50 (average 15) in central. (Okla. Coop. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - TEXAS - Damage moderate to severe in isolated areas of several north central counties and in Lynn County. Light to moderate infestations present in several south plains counties. (Tex. Coop. Rpt.). OKLAHOMA - Light infestations noted in parts of Oklahoma and Caddo Counties, with most larvae pupated (0-3 pupae per plant). Only occasional larva and pupa noted in Washita and Beckham Counties. None noted in southwest (Tillman and Jackson Counties). Heavier populations reported from east central areas, with one field reported defoliated in Hughes County. Infestations in Major County apparently under control. Careful observations should be maintained to detect buildup of future generations in areas where pupae common. (Okla. Coop. Sur.). ARKANSAS - An occasional specimen collected in south Mississippi County, northeast. (Ark. Ins. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Few present in most Kern County fields, but populations low and presently not a problem. (Black, Aug. 10). ARIZONA - Larvae continue to increase in Graham and Pinal Counties. Counts in Graham County average 8-10 per 25 plants checked. Controls applied in both counties. (Ariz. Coop. Sur.). NEW MEXICO - Larvae generally distributed on cotton in Dona Ana County. Many larvae dying, probably due to a polyhedrosis virus. (N. M. Coop. Rpt.). OKLAHOMA - Moderate to heavy infestations reported in localized south central and east central areas. Only light activity noted in Chickasha area. (Okla. Coop. Sur.). LOUISIANA - Present in most cotton fields in Tallulah area, and heavy "ragging" of foliage occurring in some fields. Under present conditions, insect generally beneficial. Only very young cotton will warrant controls. (Smath et al.). MISSISSIPPI - Light to medium infestations present in Attala County and in delta area; controls applied. Spotted infestations present in State; however, incidence of diseased larvae high. (Ouzts). ALABAMA - Continues present throughout State, but to a lesser degree than previously reported. (McQueen et al.). GEORGIA - Light to moderate infestations noted on cotton in 33 northwest area cotton fields. (Johnson). SOUTH CAROLINA - Present on cotton, but not serious at present. (Cott. Ltr., Aug. 19).

A LOOPER (Trichoplusia sp.) - NORTH CAROLINA - Heavily damaging about one-fifth of cotton fields around St. Pauls in Robeson County. Most fields in area with some larvae. (Hayes). Light in field near Maxton, Robeson County. (Calhoun). Medium in Scotland County field. (Johnston, White.). Heavy infestations noted in Sampson County field. (Morgan). None to light in Wayne County fields checked. (Mount).

COTTON LEAF PERFORATOR (Bucculatrix thurberielia) - ARIZONA - Populations causing considerable damage in Pinal and Yuma Counties. Second buildup occurring in Yuma County, and increasing in Maricopa County. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - ALABAMA - Rather light infestation continues in isolated cotton in Autauga County; larvae and pupae noted. (McQueen et al.). GEORGIA - Light infestation noted on cotton in Polk County. (Johnson).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Many fields showing moderate damage in Pinal County, especially in Picacho and Santa Cruz Valley areas. Considerable moth activity noted in Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Counts in range of 15-20 per 50 sweeps not uncommon, and populations increasing throughout Kern County. (Black, Aug. 10). Counts generally low or under economic level in Madera County. Shedding of squares and small bolls increasing, but probably due more to plant condition than insect damage. (Johnson, Aug. 15). ARIZONA - Populations have not increased in Maricopa, Pinal, Greenlee, Yuma and Graham Counties. Damage to top squares noticeable; some controls may be necessary. Counts averaged 12-15 per 100 sweeps. (Ariz. Coop. Sur.).

SUPERB PLANT BUG (Adelphocoris superbus) - ARIZONA - Nymphal counts averaged 8-10 per 100 sweeps in Graham County cotton. (Ariz. Coop. Sur.).

A PLANT BUG (Neurocolpus nubilus) - ARKANSAS - Observed in southern Mississippi County on cotton; ranged from very low to 12-15 per 100 terminals. (Ark. Ins. Sur.).

A STINK BUG (Euschistus impictiventris) - ARIZONA - Small populations found infesting cotton in Graham and Greenlee Counties; counts averaged 6-10 per 100 sweeps. (Ariz. Coop. Sur.).

APHIDS - CALIFORNIA - Few light infestations present in some Kern County fields; not serious problem at present, but condition should be watched closely as cotton matures. (Black, Aug. 10). ARIZONA - Small populations of Aphis gossypii exist in Pinal and Graham County cotton; rains and predators preventing economic buildups. (Ariz. Coop. Sur.). SOUTH CAROLINA - Most troubled fields located in lower half of State. (Cott. Ltr., Aug. 19).

THRIPS - CALIFORNIA - Frankliniella occidentalis and Leucothrips piercei medium on cotton in El Centro area, Imperial County. (Flock).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - CALIFORNIA - Medium populations on cotton in El Centro area, Imperial County. (Flock).

SPIDER MITES - CALIFORNIA - Populations increasing in many Kern County fields. Control has been poor due to large cotton and consequent poor coverage with insecticides. (Black, Aug. 10). Light, spotted infestations appeared in some Madera County fields; early controls effective in keeping populations low. (Johnson, Aug. 15). NEW MEXICO - Moderately heavy infestations reported on cotton near Roswell, Chaves County. (N. M. Coop. Rpt.). MISSISSIPPI - Light to heavy, isolated infestations of Tetranychus spp. present on cotton in delta area, and in Prentiss and Quitman Counties; controls applied. (Ouzts).

ALABAMA - Considerable increase noted on Sand Mountain and in Tennessee Valley areas. Controls applied in Cherokee, Madison, De Kalb, Morgan and Limestone Counties. (McQueen et al.). GEORGIA - Light to moderate infestations present on cotton in 33 northwest area cotton fields. (Johnson). SOUTH CAROLINA - Infestations reported from all sections, some serious. (Cott. Ltr., Aug. 19). NORTH CAROLINA - *Tetranychus* spp. light in Scotland County field and 2 Robeson County fields. Heavy in Duplin County field. (Fedoranko, Calhoun, Mearns, Johnston, White). Number of small fields entirely infested in Wayne County. (Mount).

NEMATODES - CALIFORNIA - Injury to cotton on sandy soils in Madera County seems more pronounced than usual. (Johnson, Aug. 15).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - VIRGINIA - Activity increased in Brunswick County during July after slow early season development; distributed countywide in Spotsylvania County, but infestations small and causing moderate damage; active in loblolly pines planted in Stuart, Patrick County, and in Henry County; damage noted on pond pine in Dismal Swamp and in loblolly pine throughout Portsmouth district. (Va. For. Pest Surv. Rpt., July Summ.).

JACK-PINE BUDWORM (*Choristoneura pinus*) - MINNESOTA - Several areas of moderate defoliation observed and reported this year. Larvae and chewing damage should be closely looked for in spring of 1964 and any serious infestation reported as early as possible. (Minn. Ins. Rpt.).

PINE TUSSOCK MOTH (*Dasychira plagiata*) - MINNESOTA - High egg counts found only in 2 small areas near Willow River, Pine County. Eggs about 31 percent hatched; chalcid parasite found in approximately 17 percent of eggs. No serious defoliation by this pest expected in 1964. (Minn. Ins. Rpt.).

PANDORA MOTH (*Coloradia pandora*) - CALIFORNIA - Defoliated approximately 10 acres of Coulter and Jeffrey pines in Julian area, San Diego County. There is some evidence this pest has a one-year life cycle in Cleveland National Forest. (Caragozian, Pierce, USFS).

A SHOOT BORER - MINNESOTA - An unspecified species found seriously damaging another jack pine plantation in Pine County; terminals and leaders killed on 24 percent of trees. (Minn. Ins. Rpt.).

DOUGLAS-FIR TWIG WEEVIL (*Cylindrocopturus furnissi*) - WASHINGTON - Attacking Douglas-fir grown for Christmas trees near Shelton, Mason County. (Breakey).

BARK BEETLES - TEXAS - During July, *Dendroctonus frontalis* located in 332 spots by aerial detection over portions of Hardin, Jasper, Liberty, Orange, Polk, San Jacinto, Trinity and Tyler Counties; control operations by land-owners and Texas Forest Service continued. Damage by *D. terebrans* to loblolly and shortleaf pines reported from Houston, Montgomery, Polk, Sabine, Trinity and Walker Counties during July; control actions conducted on national forests during month. Multiple tree infestations involving *Ips avulsus*, *I. grandicollis* and *I. calligraphus* reported from Cherokee, Hardin, Liberty, Nacogdoches, Panola, Polk, Rusk and Tyler Counties; damage reported decreasing in all areas. (Williamson; Tex. For. Pest Comm.; July Rpt.). MISSISSIPPI - *Ips* spp. light on pine in Attala County; controls applied. (Ouzts). VIRGINIA - Extremely dry weather during past 2 months and into August conducive to increased activity by *Dendroctonus frontalis*; several new active infestations of 6-10 trees noted in Prince Edward County July 26, with adults emerging. Aerial survey of Cumberland and Buckingham-Appomattox State Forests and portions of Fluvanna County revealed 16 active spots - all new infestations of less than 0.5 acre. Additional surveys scheduled. Single active adult *D. frontalis*

infestation noted in Brunswick County; 3 shortleaf pines recently killed in spot in Fluvanna County; shortleaf and Virginia pines infested in a Cumberland County stand; single new infestation noted in Accomack County; new activity noted in area of Northumberland County. Dendroctonus spp. killed loblolly pines in 2 areas of Chesterfield County; damage light to severe on shortleaf and Virginia pines in 3 stands in Orange County and scattered trees in several locations in Albemarle County; reported from several spots in Halifax and Nottoway Counties; active on 3 shortleaf pines in a Carroll County location; attacking loblolly pines in 2 Nansemond County locations; infesting occasional loblolly pines in King and Queen, Middlesex and Westmoreland Counties. Ips spp. infesting and killing loblolly and Virginia pines in several areas of Fluvanna and Fairfax Counties; active in several spots in Halifax County on shortleaf pine; apparently increasing and killing Virginia pine on 2 acres in Roanoke County and active in 3 areas of Carroll County; infesting healthy trees surrounding 1962 lightning strike near Whitestone, Lancaster County. (Va. For. Pest Surv. Rpt., July Summ.).

WHITE-PINE WEEVIL (Pissodes strobi) - VIRGINIA - Damage evident in 3-acre plantation and in scattered individual trees in 3 other plantations in Fauquier County; caused minor damage at 4 locations in Franklin County, but currently infesting 20 percent of stems in 2-acre plantation in Henry County. (Va. For. Pest Surv. Rpt., July Summ.).

A PINE WEEVIL (Pissodes approximatus) - MICHIGAN - Infestations range medium to heavy in several Dickinson County nurseries; attacking 2-needle pine species. (Pangborn).

PINE APHIDS - CALIFORNIA - Schizolachnus piniradiatae medium on pines in Morro Bay, San Luis Obispo County. (Cal. Coop. Rpt.). VIRGINIA - Pineus strobi heavy on loblolly pine at a location in Lawrenceville, Brunswick County. (Tarpley, Basham; Aug. 12).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MICHIGAN - Heavy on Mugho pine in nurseries near Iron Mountain, Dickinson County; trace infestation noted on blue spruce. (Pangborn). COLORADO - Causing considerable damage to spruce in La Plata County. (Jenkins).

CONIFER SAWFLIES - MINNESOTA - Second generation of Diprion similis still hatching; all stages present. Some serious localized defoliation by this second generation can be expected. Late-stage Neodiprion lecontei larvae still feeding; many already cocooned. (Minn. Ins. Rpt.). TEXAS - Light infestations on loblolly pines by Neodiprion sp., suspected to be N. excitans, observed in southern Polk and Hardin Counties. (Williamson; Tex. For. Pest Comm.; July Rpt.). COLORADO - N. lecontei found infesting ponderosa pine in Glenwood Springs, Garfield County. (Hantsbarger).

FALL WEBWORM (Hyphantria cunea) - RHODE ISLAND - Roadside scouting in Washington, Kent and Providence Counties showed infestations very light and sparsely distributed. (Mathewson). DELAWARE - Considerably more abundant on walnut, hickory and other trees this season than last few years in areas of New Castle County. (Burbutis, Evans). VIRGINIA - Webs conspicuous on persimmon, sourwood and other favored hosts in Patrick, Henry, Pittsylvania, Halifax, Mecklenburg, Brunswick, Greensville, Southampton, Isle of Wight and Nansemond Counties. (Tarpley). NORTH CAROLINA - Noted as becoming abundant on various trees in Wilkes, Watauga and Yadkin Counties August 18. (Wray). MISSOURI - Heavy infestations on several tree species continue in areas throughout State. Partially and some completely defoliated walnut trees common throughout southwest. (Munson, Thomas, Wood). MICHIGAN - Larvae more abundant in southern Kalamazoo and St. Joseph Counties than in 1962; feeding evident in Montcalm and Cass Counties. (Durren, Wells). WISCONSIN - Webs conspicuous in area of eastern Green County on variety of hosts; most larvae in third stage. (Wis. Ins. Sur.). NORTH DAKOTA - Larvae feeding on various trees over State. (N. D. Ins. Sur.).

AMERICAN DAGGER MOTH (Acronicta americana) - NEVADA - Infestations range light to heavy on boxelder in Reno-Sparks area, Washoe County. (Bechtel). DELAWARE - Relatively more common on maple, linden and sycamore than in previous years. (Burbutis, Evans).

A LEAF ROLLER MOTH (Fascista cercerisella) - OKLAHOMA - Continues active on redbud in Stillwater area, Payne County. (Okla. Coop. Sur.).

SYCAMORE TUSSOCK MOTH (Halisidota harrisii) - DELAWARE - Larvae fairly common on sycamores in area of western Kent County. (Burbutis, Evans).

WALNUT CATERPILLAR (Datana integerrima) - WISCONSIN - Two distinct hatches evident on walnut tree observed in Dane County, where colonies of second and fourth-stage larvae present. Populations continue scarce. (Wis. Ins. Sur.).

WESTERN OAK LOOPER (Lambdina fiscellaria somnaria) - OREGON - Defoliating large stands of ash in Linn County. (Larson).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - Removal of traps begun August 20; all traps scheduled for removal by August 30. Optimism high that no moths will be found during final checks as traps are removed. No moths have ever been collected in State after August 25, including males trapped during 1963. (Carlson).

CARPENTERWORM (Prionoxystus robiniae) - NORTH DAKOTA - Larvae collected from ash trees have been received from over State. (N. D. Ins. Sur.).

A CASEMAKER (Bucculatrix albertiella) - CALIFORNIA - Heavy on oak trees and few present on boxelders in Ballico, Merced County. (Cal. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Feeding on variety of trees in Cherokee, Wagoner, Creek (east central), Payne (north central) and Oklahoma (central) Counties. (Okla. Coop. Sur.). TEXAS - Several specimens and inquiries received from widely separated areas of State. (Newton).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - MICHIGAN - Larvae, probably this species, caused considerable defoliation of elm near Ishpeming, Marquette County. (Mattson, Butcher).

ELM LEAF BEETLE (Galerucella xanthomelaena) - DELAWARE - Adults abundant on some elms in Kent County (Bray) and larvae common, with some noticeable injury, in southern portion of county (Burbutis, Evans). TEXAS - Larvae and adults continue to cause variable damage to elms in northwestern and panhandle areas. (Newton). OKLAHOMA - Egg laying continues in Stillwater area, Payne County. Heaviest infestation ever noted reported in McCurtain County (southeast). (Okla. Coop. Sur.). ARIZONA - Found feeding on elms in Prescott, Yavapai County, and in Safford, Graham County. These are new county records. (Ariz. Coop. Sur.). UTAH - Skeletonizing additional trees in Salt Lake City area. (Knowlton). WASHINGTON - Has been scarce on elms during past 2 years. Few eggs observed on Chinese elm at Walla Walla, Walla Walla County. (Landis).

LOCUST LEAF MINER (Xenochalepus dorsalis) - OHIO - Severe browning of black locusts in southeastern and southwestern areas, particularly along U. S. Highway 40, quite prevalent. This is second consecutive year of heavy browning in vicinity of southern Hillsboro, Highland County. Many residents felling infested trees. (Lyon). Heavy adult numbers observed on black locust in Guernsey County, east central. (Galford).

LARGER ELM LEAF BEETLE (Monocesta coryli) - NORTH CAROLINA - Larvae caused considerable damage to number of elms in Hillsboro area, Orange County. (Jones).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - TENNESSEE - Collected in Coffee, Scott and Knox Counties this year. Species first found in Coffee County during November 1962; however, determination not received until 1963. Collection in Coffee County constitutes a new State record. Collections from Scott and Knox Counties, made during 1963, constitute new county records. (Mullett). WISCONSIN - Reported less frequently, but has been collected from alfalfa in Kenosha and Grant Counties. (Wis. Ins. Sur.).

SYCAMORE LACE BUG (Corythucha ciliata) - DELAWARE - Nymphs and adults common on sycamores in western Kent County. (Burbutis, Evans). FLORIDA - Infested 20 sycamore trees in nurseries at Gainesville, Alachua County, August 15. (Graham).

LEAFHOPPERS - OKLAHOMA - Large numbers damaging elm trees and lawns in Stillwater area, Payne County, north central. (Okla. Coop. Sur.). UTAH - Erythroneura ziczac extremely abundant at Delta, Lyndyl and Leanington, Millard County; most foliage chlorotic. (Knowlton).

MIMOSA WEBWORM (Homadaula albizziae) - ALABAMA - Continues heavy in southwestern portion of State, especially Mobile County. Less severe infestations noted in Autauga and Lee Counties. (Seibels, Davis, et al.). GEORGIA - Heavy on mimosa. (Woodliff). DELAWARE - Common to abundant on honeylocust in Kent and Sussex Counties, with newly hatched larvae again very numerous. (Burbutis, Evans). NEW JERSEY - Several light infestations reported in southern and central counties. (Ins.-Dis. Newsltr., Aug. 20). OHIO - Populations lower this year at this date than in 1962. (Walker).

BAGWORM (Thyridopteryx ephemeraeformis) - GEORGIA - Heavy on arborvitae and related plants. (Woodliff). NORTH CAROLINA - Heavy on juniper and other shrubs locally in Wake County. (Wray). IOWA - Causing concern in Des Moines, Polk County. (Iowa Ins. Inf., Aug. 19). COLORADO - Found on juniper at Fort Collins, Larimer County. (Thatcher). This is first ARS record for State.

WILLOW FLEA WEEVIL (Rhynchaenus rufipes) - RHODE ISLAND - Apparently this species, heavy on ornamental willow in East Greenwich, Kent County. (Cartier).

WEEVILS - NEVADA - Brachyrhinus meridionalis adults heavily damaged lilac leaves in Reno, Washoe County. (Bechtel). VIRGINIA - Pseudocneorhinus bifasciatus adults caused medium to severe damage to azaleas and fed on rhododendron in a nursery in Richmond. (Freund, Aug. 9). P. bifasciatus light on ligustrum at a location in Norfolk. Det. by R. E. Warner. (Morris, Aug. 1).

FLEA BEETLES - MINNESOTA - Undetermined species caused considerable damage to alpine currant in southeastern area. (Minn. Ins. Rpt.).

APHIDS - DELAWARE - Macrosiphoniella sanborni very abundant on chrysanthemums in areas of New Castle County. (Burbutis, Evans). WISCONSIN - Heavy population of Macrosiphum rosae observed on roses in localized area of Green Lake County. (Wis. Ins. Sur.). CALIFORNIA - All stages of Drepanaphis acerifolii heavy on silver maples in Madera, Madera County. (Cal. Coop. Rpt.).

COCCIDS - OHIO - Toumeyella pini infesting 5 percent of 3,000 Scotch pines in Lorain County, north central. This is a new county record. (Wells, Walker). NEW JERSEY - Neolecanium cornuparvum crawlers active in Middlesex County. (Ins.-Dis. Newsltr., Aug. 20). NORTH CAROLINA - Heavy infestation of Unaspis euonymi noted on shrubs in Guilford County August 7. Infested sample of shrub received from Cabarrus County. (Wray).

WHITEFLIES - ALABAMA - Increased considerably during past 10-15 days on ornamentals in Mobile County. (Seibels).

THRIPS - WISCONSIN - Yellowing of privet by Dendrothrips ornatus becoming more evident; some plants appearing nearly white. Taeniothrips simplex severely damaged gladioli in Racine County. (Wis. Ins. Sur.).

A COCKSCOMB GALL (Trishormonia crataegifolia) - PENNSYLVANIA - Heavy to severe on Washington hawthorn in Bucks County. (Snetsinger, Aug. 8).

A SAWFLY (Macremphytus sp.) - RHODE ISLAND - Defoliating dogwood in Kingston, Washington County. (Mathewson).

SPIDER MITES - CALIFORNIA - Tetranychus sp., possibly telarius, medium on birch nursery stock in Arlington, Riverside County. Oligonychus platani heavy on pyracantha in Marysville, Yuba County. (Cal. Coop. Rpt.). UTAH - Unspecified species discoloring morning-glory and shrubs at Logan, Cache County. Evergreens about number of homes in Salt Lake City-Sandy area, Salt Lake County, also being discolored. Discolored foliage of several shrubs, including evergreens, at Nephi, Juab County. (Knowlton). OHIO - Eotetranychus multidigituli caused moderate to heavy damage on honeylocusts at Wooster, Wayne County. (Johnston, Lyon). ALABAMA - Increased considerably during last 10-15 days on ornamentals in Mobile County. (Seibels).

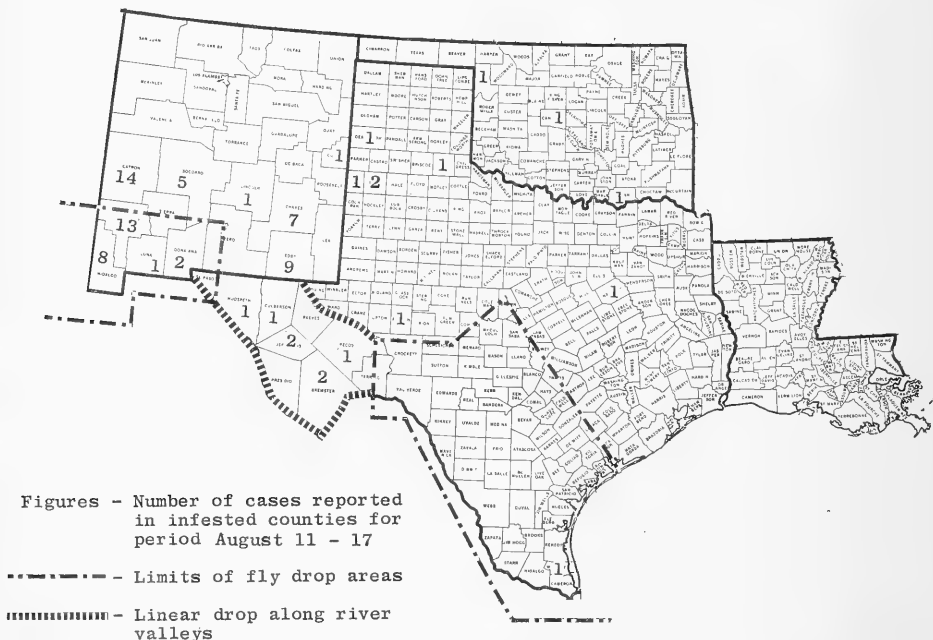
A LAND SNAIL (Succinea ovalis) - CALIFORNIA - Heavy locally in a nursery property in Sacramento, Sacramento County. This is a fungus feeding species. Control anticipated. (Cal. Coop. Rpt., Aug. 16).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - Culex tarsalis populations generally up over State; in Sacramento area, incidence has been higher for past 3 weeks than for several years. Flight patterns indicate mosquitoes moving well over 1 mile and in some instances, several miles from breeding areas. (Cal. Coop. Rpt.). ARIZONA - Very heavy hatch of undetermined species occurred in Chui Chuischu and Desert Valley areas of Pinal County; insecticidal controls have not been effective. Mosquitoes also nuisance in Graham County. (Ariz. Coop. Sur.). UTAH - Moderately troublesome about Hoytsville, Wanship, Echo and Snyderville, Summit County, and fields about Benson, Cache County. (Knowlton). TEXAS - Lubbock County - Light, widespread populations averaged as follows: Culex tarsalis 68 percent, Aedes vexans 20 percent, Psorophora signipennis 11 percent, Culex pipiens quinquefasciatus 1 percent. (Breedlove). Jefferson County - Populations dropped rapidly during July. Aedes sollicitans only species occurring in significant numbers. Other species observed were Culex salinarius, Aedes taeniorhynchus, A. vexans, Psorophora ciliata, P. confinnis, P. ferox, Anopheles crucians, A. quadrimaculatus and Uranotaenia sapphirina. (Jeff. Co. Mosq. Cont. Comm.; July Rpt.). NORTH DAKOTA - Biting by Aedes vexans moderate to severe in southeastern areas. Some buildup of Culex tarsalis continues. (Noetzel). MINNESOTA - During week ending August 17, total of 5,400 female mosquitoes collected, of which 5,000 were Aedes vexans. Trap collections down 7,000 from previous week. In 35 evening bite collections, 262 of 272 mosquitoes taken were Aedes vexans. In daytime bite collections, 1,452 of 1,718 were Aedes vexans. In larval collections, 333 of 996 contained A. vexans; 188 of these collections contained Aedes spp. too small to determine. Culex pipiens present in 224 collections, Culex territans in 184, Culex restuans in 136, Culex tarsalis in 166. Dominance of Aedes vexans as pest species obvious in above figures. Even though considerable number of Culex spp. present, they are not important biters in area of collections. (Minn. Ins. Rpt.). DELAWARE - Aedes sollicitans very abundant in some areas of eastern Kent County. (Burbutis, Evans). RHODE ISLAND - Statewide complaints suggest increase in activity of crepuscular species. (Stessel, Cartier, Mathewson).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period August 11 - 17, a total of 16 confirmed cases was reported from TEXAS; 61 from NEW MEXICO; and 3 from OKLAHOMA. Specimens were reported from 13 counties in Texas, 10 counties in New Mexico and 3 counties in Oklahoma. Screw-worm was reported for the first time this year from Navarro and Cochran Counties, Texas, and Canadian County, Oklahoma. A total of 140,866,250 sterile flies was released during the period August 11 - 17. (Anim. Dis. Erad. Div.).



FACE FLY (*Musca autumnalis*) - WISCONSIN - Continues to cause few problems. New case of blindness reported from Rock County in herd grazing in wooded pasture. (Wis. Ins. Sur.). MICHIGAN - Adults more troublesome in Ingham and Shiawassee Counties; counts of 50 per animal noted on cattle August 22. (Dowdy). ILLINOIS - Averaged 4.6 per animal on pastured cattle in west-southwest, 11.4 per animal on 6 pastured herds in west, and 14.6 per animal on 4 herds in central section. (Ill. Ins. Rpt.). OHIO - Populations appear sporadic throughout State; 20-25 per face on dairy animals occurred in Marion County (central) in contrast to 8-10 per face on beef animals in Brown County (southwest). (Lyon). Averaged 17 per animal at Wooster, Wayne County (northeast).

(Williams, Miller). MARYLAND - Ranged 2-75 per head in 9 dairy herds in Frederick County; numbers moderate on dairy cattle in Howard County. (U. Md. Ent. Dept.).

HOUSE FLY (Musca domestica) - WISCONSIN - Populations continue to increase; reported as considerable problem in Sauk County. (Wis. Ins. Sur.). NORTH DAKOTA - No increase in numbers noted; however, beginning to concentrate in or near buildings. (Noetzel). OKLAHOMA - Large numbers (50 per head) noted on feedlot steers in Tillman County. Populations in Stillwater area, Payne County, somewhat higher than previous week. (Okla. Coop. Sur.). UTAH - Especially numerous about motels and restaurants at Nephi, Juab County. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - WYOMING - Adult populations high on animals in Goshen County; estimated at 40-50 per animal. (Marks). WISCONSIN - Continues prevalent and remains most noticeable fly species. (Wis. Ins. Sur.). ILLINOIS - Average per head was 5.3 on pastured cattle in west-southwest, 8.3 on 6 pastured herds in west, and 4.8 on 4 herds in central sections. (Ill. Ins. Rpt.). OKLAHOMA - Counts increased to one per head in Stillwater area, Payne County. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta counties; controls applied. (Ouzts).

HORN FLY (Haematobia irritans) - NEW MEXICO - Populations increasing in Torrance County after recent rains. Also reported from Hondo, Lincoln County. (N. M. Coop. Rpt.). UTAH - Populations below normal in Summit County. (Knowlton). WYOMING - Adults causing serious annoyance to livestock in Platte, Converse and Goshen Counties; estimated at 150-200 per animal. (Marks). ILLINOIS - Counts per animal averaged 79.8 on pastured cattle in west-southwest, 108 on 6 pastured herds in west, and 78.6 on 4 herds in central section. (Ill. Ins. Rpt.). OHIO - Ranged 80-100 per dairy animal in Morrow County. (Lyon). OKLAHOMA - Counts of 500-600 per head noted on cows in Payne, Kay (north central) and Delaware (northeast) Counties. Very light counts of less than 25 per head noted on feedlot steers in Tillman County (southwest). (Okla. Coop. Sur.). MISSISSIPPI - Heavy on livestock in delta counties; controls applied. (Ouzts). ALABAMA - Ranged 50-75 per dairy animal in herd examined in Autauga County. (McQueen). None observed on 3 dairy herds examined in Franklin, Marion and Elmore Counties, where automated daily control mechanism used. (Ledbetter et al.).

TABANIDS - OHIO - Tabanus sp. ranged 2-3 per dairy animal in Delaware County. (Lyon). ILLINOIS - Horse flies averaged 4.2 per head on pastured herd in west-southwest section, but none observed on 6 other herds checked. (Ill. Ins. Rpt.). MISSISSIPPI - Tabanus spp. light on livestock in delta counties; controls applied. (Ouzts). OKLAHOMA - Tabanus spp. averaged 2 per animal in low lying areas in Payne County. (Okla. Coop. Sur.). UTAH - Tabanid populations declining in Summit County; only moderately annoying to livestock. (Knowlton).

HORSE BOT FLY (Gasterophilus intestinalis) - UTAH - Annoying horses in Delta-Sutherland area of Millard County and in Levan area of Juab County. (Knowlton).

BLACK FLIES - WISCONSIN - Unspecified species annoying in western Dane County. (Wis. Ins. Sur.).

EYE GNATS (Hippelates spp.) - NORTH CAROLINA - Numbers increased recently in sandhills area; now quite abundant. (Axtell).

CHIRONOMID MIDGES - OKLAHOMA - Large numbers causing considerable concern to vacationers around lakes in Wagoner County, east central. (Okla. Coop. Sur.). NORTH CAROLINA - Extremely heavy numbers of Chironomus plumosus occurred around a pond in Richmond County on August 16. (Wray).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - Continue to cause considerable concern to some homeowners in Stillwater area, Payne County. (Okla. Coop. Sur.).
IOWA - Continue to be troublesome in some areas. (Iowa Ins. Inf., Aug. 19).
RHODE ISLAND - Complaints concerning household infestations decreasing. (Hannah, Mathewson).

BLOODSUCKING CONENOSE (Triatoma sanguisuga) - FLORIDA - Numerous in 2 houses in Plant City, Hillsborough County. Bit one occupant several times; caused welts and pain but no severe reaction. (Hunter, Aug. 2).

VESPID WASPS - RHODE ISLAND - Seasonal complaints concerning Polistes spp. and Vespa spp. statewide. (Mathewson, Cartier, Hannah, King).

HOUSEHOLD AND STRUCTURAL INSECTS

CRICKETS - MICHIGAN - Gryllus spp. very common in houses in Lower Peninsula counties. Probably Gryllotalpa hexadactyla recently received for determination from several counties. (Janes). IOWA - Unspecified species invading many homes and business establishments. (Iowa Ins. Inf., Aug. 19). ARIZONA - Gryllus sp. annoying in homes and business establishments in Pinal County. (Ariz. Coop. Sur.).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - OHIO - Adults entering homes in Marietta, Washington County. (Gehres, Blair). NORTH CAROLINA - Numerous in a Burke County home. (Speas, Robertson).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - WISCONSIN - Continues to be of concern to householders in sandier areas of State. (Wis. Ins. Sur.). NORTH DAKOTA - Adults appearing in homes in eastern portions of State. (N. D. Ins. Sur.).

A POWDER-POST BEETLE (Lyctus africanus) - CALIFORNIA - Medium in bamboo curtains in Livermore, Alameda County. (Cal. Coop. Rpt.).

BOXELDER BUG (Leptocoris trivittatus) - WISCONSIN - Adults becoming noticeable; creating complaints by congregating on buildings and entering homes. (Wis. Ins. Sur.).

BLACK CARPENTER ANT (Camponotus pennsylvanicus) - NORTH DAKOTA - Causing concern in homes in Fargo area of Cass County. (N. D. Ins. Sur.).

A SUBTERRANEAN TERMITE - UTAH - Severely damaged wood portions of brick home at Wellsville, Cache County. (Knowlton).

BENEFICIAL INSECTS

Beneficial Insects in Arkansas - Found in all cotton fields checked in southern Mississippi County except one treated field. A FLOWER BUG (Orius insidiosus) most numerous species; various species of LADY BEETLES, A BIG-EYED BUG (Geocoris punctipes) and GREEN LACEWINGS (Chrysopa spp.) also present. Counts of Heliothis zea low in all fields checked. (Ark. Ins. Sur.).

Beneficial Insects in Oklahoma - Populations of several species of LADY BEETLES present in alfalfa in Tillman and Jackson County areas (southwest). Larvae of LACEWINGS (Chrysopa spp.) heavy in alfalfa with large numbers of adults and eggs present in grain sorghum and cotton in southwest and south central areas; common on elms in Stillwater area, Payne County (north central). DAMSEL BUGS (Nabis spp.). increasing in alfalfa in southwest and southeast areas. (Okla. Coop. Sur.).

Beneficial Insects in New Mexico - A FLOWER BUG (Orius sp.) averaged 1-2 per sweep in alfalfa checked in Valencia County. DAMSEL BUGS (Nabis spp.) and MELYRID BEETLES (Collops spp.) abundant in Torrance and Valencia County alfalfa; adults ranged 10-25 per 100 sweeps. (N. M. Coop. Rpt.).

Beneficial Insects in Utah - LADY BEETLES, a DAMSEL BUG (Nabis alternatus), BIG-EYED BUGS (Geocoris spp.), GREEN LACEWINGS (Chrysopa spp.), MELYRID BEETLES (Collops spp.), a FLOWER BUG (Orius tristicolor) and SYRPHID FLY larvae very numerous in seed alfalfa fields in Fillmore-Hatton area, Millard County. (Knowlton).

EUROPEAN CORN BORER PARASITES - WISCONSIN - Results of studies of European corn borer (Ostrinia nubilalis) larvae collected during fall of 1962 were as follows: Horoglyphus punctatorius - 0.3 percent; Lydella grisescens - 4.8 percent; Macrocentrus gifuensis - 0.6 percent; Apomyia caesar - 1.0 percent. Total degree of parasitism was 6.8 percent. This compares with 5.5 percent for 1961, 6.1 percent for 1960, and 8.4 percent for 1959. Studies were conducted by Corn Borer Investigation Laboratory at Ankeny, Iowa. (Wis. Ins. Sur.).

LADY BEETLES - WYOMING - Adults numerous in alfalfa in Platte and Goshen Counties; averaged 58 per 100 sweeps. (Marks). UTAH - Thousands noted in upper areas of Red Ledges Mountains between Nephi and Fountain Green, Juab County, at elevation of 10,000 feet, August 9. (Esplin, Knowlton).

A PUNCTURE-VINE WEEVIL (Microlarinus lareynii) - ARIZONA - Well established on Yuma Mesa and in Yuma Valley, Yuma County; 7 releases made recently in Wellton-Mohawk, Wenden-Salome, and new locations in the Yuma Valley. (Ariz. Coop. Sur.).

A LEAFCUTTING BEE (Megachile rotundata) - NEVADA - Second-generation adults emerging near Reno, Washoe County, and Lovelock, Pershing County. (Bechtel, Gallaway, Martinelli).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Adults still plentiful in Battle Creek area. Considerable feeding noted on corn tassels and leaves and on heads of sunflower; no damage observed on corn silks. Some beetle mortality still observed in areas where control applied to foliage 13 days earlier. Of original 960 traps set in Battle Creek area, 95 percent yielded positive results. To August 23, beetles taken at 2,193 locations in Calhoun and rural Kalamazoo Counties. Approximately 200 traps now located in Kalamazoo County and 740 in Calhoun County in attempt to delimit infestation. In other areas of State, recent beetle collections light. One beetle, first of season, taken in Grand Rapids where 672 traps maintained; in Berrien County, 4 more beetles taken, of which 3 came from property where previous collection made; in Monroe and Lenawee Counties, few stray beetles still being taken. (Carlson, Turner). RHODE ISLAND - Populations remain extremely low statewide, but observations in portions of South Kingstown, Washington County, suggest small, localized concentrations. (Cartier, Mathewson). NORTH CAROLINA - Extremely heavy on foliage of trees, vines and weeds in Watauga County on August 15. (Wray).

ASIATIC GARDEN BEETLE (Maladera castanea) - RHODE ISLAND - Populations noticeably low this year. (Cartier, Mathewson).

SUGARCANE BEETLE (Eutheola rugiceps) - ALABAMA - Numerous adults appearing at lights at night in Mobile County. (Seibels).

COCKLEBUR WEEVIL (Rhodoaenus tredecimpunctatus) - NORTH CAROLINA - Larvae, probably this species, taken from stems of cocklebur in Bertie County. (Mount).

EUROPEAN EARWIG (Forficula auricularia) - RHODE ISLAND - Although generally less conspicuous than usual, large concentrations still encountered statewide. (Cartier, Mathewson). IDAHO - Specimens collected for the first time in Lemhi County at Salmon. (Portman).

A LABIDURID EARWIG (Euborellia cincticollis) - CALIFORNIA - Light in grain debris in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - MICHIGAN - Three adults collected in a blacklight trap in Livingston County August 21. This is significant as it relates to expected flight of corn earworm (Heliothis zea). (Newman).

WHITE-LINED SPHINX (Celerio lineata) - ARIZONA - Migrating larvae found in desert areas of Greenlee and Graham Counties. (Ariz. Coop. Sur.).

DRONE FLY (Eristalis tenax) - ALABAMA - Appearing in rather large numbers in fields of crotalaria in Mobile County. (Seibels). NORTH CAROLINA - Larvae noted in pickle vats in Hertford County. (Mount).

A CRANE FLY - OREGON - Larvae of unknown species causing damage to small feeder irrigation ditches in Jackson County by burrowing holes in sides. (Berry).

CORRECTIONS

CEIR 13(30):873 - A CERAMBYCID BEETLE (Crossidius pelchellus) should read (Crossidius pulchellus).

CEREAL LEAF BEETLE

(Oulema melanopa (L.))



Outlined counties infested

• indicates reported infested in 1962

Prepared in Survey and Detection Operation.

Plant Pest Control Division

Agricultural Research Service, USDA

August 15, 1963

LIGHT TRAP COLLECTIONS

| ARKANSAS | Hope 8/15-21 | Keiso 8/15-21 | Fayetteville 8/15-21 | CALIFORNIA | Davis 8/17-23 | FLORIDA | Gainesville 8/19 | GEORGIA | Tifton 8/15-21 | ILLINOIS (County) | Champaign 8/16-22 | INDIANA (Counties) | Lawrence 8/7-16 | Tippecanoe 8/13-20 | Vanderburgh 8/13-19 | Jasper 8/12-20 | Stuben 8/14-20 | Marshall 8/14-20 | La Porte 8/11-18 | MARYLAND | Centreville 8/14-20 | MICHIGAN (Counties) | Perrien 8/13-19 | Monroe 8/13-19 | Macomb 8/13-19 | Washtenaw 8/13-19 | Jackson 8/13-19 | Barry 8/13-19 | Kent 8/13-19 | Newaygo 8/13-19 | MISSISSIPPI | Stoneville 8/16-22 | Stoneville 8/16-22 | MISSOURI | Portageville 8/8-14 | Portageville 8/15-21 | |
|----------|--------------|---------------|----------------------|------------|---------------|---------|------------------|----------|----------------|-------------------|-------------------|--------------------|-----------------|--------------------|---------------------|----------------|----------------|------------------|------------------|----------|---------------------|---------------------|-----------------|----------------|----------------|-------------------|-----------------|---------------|--------------|-----------------|-------------|--------------------|--------------------|----------|---------------------|----------------------|-----|
| 25 | 10 | 24 | 10 | 2 | 10 | 2 | 10 | 115/4472 | 22 | 3 | 4 | 5 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 26 | 15 | 6 | 14 | 5 | 5 | 2 | 4 | 2 | 5 | 2 | 56-92 | 09 | 56-92 | 36 | 25 | | |
| 7 674 | 72 | 10 | 10 | 115/4472 | 22 | 3 | 4 | 5 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 61.32 | 61.32 | 8 | 3 | 3 | 19 | 16 | 3 | 4 | 23 | 5 | 5 | 3 | 70 | 72 | 363 | 1230 | |
| 1 | 1 | 6 | 4 | 4 | 35 | 20 | 6 | 3 | 38 | 1 | 1 | 2 | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 135 | 8 | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 17 | 17 | 7 | 415 | 45 | 3 | Misc. | 47 | 4 | 3 | 4 | 3 | 4 | 3 | 12 | 2 | 2 | 2 | 2 | 2 | 57 | 57 | 5 | 2 | 2 | 5 | 2 | 1 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 67 739 | 1330 | 444 | 44 | 700 | 60 | 23 | 1476 | 1 | 56 | 1312 | 112 | 184 | 112 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 | 184 |

* BL = blacklight; I = insecticide; MV = mercury vapor; 0 = other

** alf. = alfalfa; beet = garden beet and/or sugarbeet; coll. = coll. on plants; cett. = cactus; CC = field corn; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

(Continued on page 1033)

LIGHT TRAP COLLECTIONS

| State | County | Locality | Date | Temp. - max. F. | Precip- itation | Type of trap | Black fly (larvae) | | Black fly (pupae) | | Black fly (adults) | | Culex | | Anopheles | | Malaria | | Other | | | | | | | | | | | |
|----------------|--------|----------|------|--------------------|--------------------|-----------------|--------------------|---|-------------------|---|--------------------|---|-------|---|-----------|---|---------|---|-------|---|---|---|---|---|--|--|--|--|--|--|
| | | | | | | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | | | | | | |
| NEBRASKA | | | | | | | 93 | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | 81 | | | | | | | | | | | | | | | | | | | | | | | |
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| NEW JERSEY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| NORTH DAKOTA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| OHIO | | | | 45-81 | .41 | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SOUTH CAROLINA | | | | 65-91 | 0 | BL | | | | | | | | | | | | | | | | | | | | | | | | |
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| TEXAS | | | | 68-90 | 2.47 | BL | | | | | | | | | | | | | | | | | | | | | | | | |
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| WYOMING | | | | | | BL | | | | | | | | | | | | | | | | | | | | | | | | |
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(Continued on page 1034).

* BL = blacklight; I = incensecent; MV = mercury vapor; O = other
 ** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn;
 grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pan. = peanut; pepp. = pepper; pot. = potatoes;
 sil. = silage; sol. = tomato; wood plants (unspecified); soy. = soybean; IC = truck crops (unspecified or mixed);
 tob. = tobacco; tom. = tomato.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Barley IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|----|---|--|-----------|
| A. | Pest or pest complex | English grain aphid, brown wheat mite, grasshoppers, army cutworm, corn leaf aphid | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | 650,000 |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | 25 bu. |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | 1.00 |
| E. | <u>Acres</u> ^a needing control | No. | 88,123 |
| F. | <u>Acres</u> ^a treated | No. | 24,988 |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | % | .57 |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | .14 bu. |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | .14 |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | .04 |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | 8,838 bu. |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | 2.00 |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | 49,976.00 |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | 8,838.90 |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | 2,525.40 |
| Q. | Combined control cost and losses, N + O + P | \$ | 61,340.30 |

Comment: Losses occurred in southeastern and western Colorado.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Corn (Commodity) | IN | Colorado (State or District) | DURING | 1962 (Year) |
|---|---|--------|---------------------------------|--------|----------------|
| Two-spotted spider mite, corn rootworms, fall armyworm, corn earworm, corn leaf aphid | | | | | |
| A. | Pest or pest complex | | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 480,000 | | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 32.7 bu. | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | 1.80 | | |
| E. | Acres ^a needing control | No. | 214,583 | | |
| F. | Acres ^a treated | No. | 76,063 | | |
| G. Reduction due to not treating where needed: | | | | | |
| H. | Loss in yield, percent | % | 2.9 | | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | .94 bu. | | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | 1.69 | | |
| K. | Loss in quality, \$ per acre ^a | \$/ | .10 | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | 130,208 bu. | | |
| M. | Control cost, \$ per acre ^a | \$/ | 2.00 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 152,126.00 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 234,098.00 | | |
| P. | Quality loss for all acres ^a , (E-F) x K | \$ | 13,852.00 | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 400,076.00 | | |

Comment: Drought and frost caused more loss in the State than insects. The two-spotted spider mite in southeast and west Colorado was responsible for most of the loss.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | <u>Sorghum</u> (Commodity) | IN | <u>Colorado</u> (State or District) | DURING | <u>1962</u> (Year) |
|-----------|---|--|--|--------|-----------------------|
| A. | Pest or pest complex | <u>Two-spotted spider mite, corn leaf aphid, fall armyworm</u> | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>400,000</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>24.8 bu.</u> | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>.82</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>47,380</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>5,000</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>.1</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>.0248 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>.02</u> | | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>negligible</u> | | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,051.0 bu.</u> | | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>2.00</u> | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>10,000.00</u> | | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>847.60</u> | | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>----</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>10,847.60</u> | | |

Comment: Losses occurred mainly in the Arkansas Valley due to the two-spotted spider mite.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Beans (dry) (Commodity) | IN | Colorado (State or District) | DURING | 1962 (Year) |
|-----------|--|--|---------------------------------|--------|----------------|
| A. | Pest or pest complex | Flea beetles, army cutworm, grasshoppers, bean aphid, Mexican bean beetle, two-spotted spider mite | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 230,000 | | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 8.3 cwt. | | |
| D. | Price ^b per unit (cwt.) ^c (From CRS) | \$/ | 6.00 | | |
| E. | Acres ^a needing control | No. | 41,100 | | |
| F. | Acres ^a treated | No. | 14,730 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | .8 | | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | .066 cwt. | | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | .39 | | |
| K. | Loss in quality, \$ per acre ^a | \$/ | .01 | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | 1,740.4 cwt. | | |
| M. | Control cost, \$ per acre ^a | \$/ | 3.00 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 44,190.00 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 10,284.30 | | |
| P. | Quality loss for all acres ^a , (E-F) x K | \$ | 236.70 | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 54,711.00 | | |

Comment: Drought and hail caused considerable more loss in western and northern Colorado
than did the economic insects present.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Grasshopper survey in 46 Colorado counties indicates lowest level of infestation since 1959, and results of survey in South Dakota show a substantial buildup in both crop and range land. Grasshoppers causing severe damage to alfalfa in Squaw Valley, Elko County, Nevada, and damage continues in areas of Juab, Sanpete, Millard and Sevier Counties, Utah. (p. 1041).

Major outbreak of CORN EARWORM occurring on soybeans in southeast Arkansas; activity increasing in several States. (pp. 1041, 1042). Second-generation EUROPEAN CORN BORER moth flights peaked in Minnesota, Wisconsin and Ohio; larval activity increasing in Maryland and Delaware. (p. 1042). SOUTHWESTERN CORN BORER infestations general over northern half of Louisiana; heavy in some late-planted corn. (p. 1043). WESTERN CORN ROOTWORM spread rapid in Minnesota; problems expected on corn in next few years. NORTHERN CORN ROOTWORM adults heavy in continuously grown corn plots at Hoytville, Wood County, Ohio. (p. 1043). TWO-SPOTTED SPIDER MITE present on corn in all areas of Colorado; populations vary considerably due to recent rains. (p. 1044).

ALFALFA CATERPILLAR activity increasing rather generally on alfalfa. (p. 1044). Severe infestations of a CHINCH BUG (*Blissus leucopterus insularis*) reported on St. Augustine grass lawns in areas of Louisiana, and several CATERPILLARS heavy and damaging soybeans in southern half of State. (pp. 1041, 1046-1047).

Serious infestations of ORIENTAL FRUIT MOTH building up in untreated peach orchards near Barnesville, Belmont County, Ohio, and larvae heavy in areas of Maryland and Alabama. (p. 1047). PEACH TREE BORERS causing extensive damage to untreated peaches in Lee, Macon and Elmore Counties, Alabama. (p. 1048). POTATO TUBERWORM found in Monroe County, Michigan; first time in recent years that species has caused serious economic loss to potatoes in State. (p. 1049). Larvae of BANDED CUCUMBER BEETLE heavy in many Louisiana sweetpotato fields, with controls unsatisfactory. CABBAGE LOOPER becoming more prevalent and damaging to cole and other crops in several States. (p. 1050).

BOLLWORMS continue as major pest of cotton rather generally; large increases noted in parts of Arizona. COTTON LEAF PERFORATOR continues serious problem on cotton in Yuma, Pinal and Maricopa Counties, Arizona. (pp. 1051, 1052). High counts of LYGUS BUGS continue to be found on cotton in areas of California and Arizona. (pp. 1052, 1053).

Aerial surveys for GYPSY MOTH defoliation disclose more extensive areas of defoliation in Vermont and New Hampshire and less defoliation in Maine than in 1962; totaled 12,020 acres in Vermont, 8,345 acres in New Hampshire and 1,970 acres in Maine. No gypsy moth adults trapped in Michigan in 1963. (p. 1054).

Several species of MOSQUITOES a serious problem in Maricopa, Pinal and Pima Counties, Arizona, and buildups noted following recent rains in McKinley, Bernalillo, Valencia and Dona Ana Counties, New Mexico. (p. 1056). VESPID WASPS constitute major insect problem in Rhode Island. (p. 1059).

DETECTION

EUROPEAN EARWIG collected for first time in Michigan. (p. 1059). New county records of significance were WESTERN CORN ROOTWORM in Blue Earth, Dakota, Goodhue, Olmsted and Redwood Counties, Minnesota (p. 1043); LOCUST LEAF MINER in Lake and McHenry Counties, Illinois (p. 1055); and JAPANESE BEETLE in Carter and Simpson Counties, Kentucky (p. 1061).

SPECIAL REPORTS

The Incidence of Bluetongue as Reported in the United States During Calendar Year 1962. (p. 1057). Counties in Which Bluetongue was Reported 1948-1962 (map). (p. 1058).

Status of the Screw-worm in the Southwest. (p. 1059).

Interceptions of Special Interest at U.S. Ports of Entry. (p. 1064).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Cabbage, Lettuce, Potatoes, Tomatoes, Watermelon (Seed) and Cantaloup in Colorado in 1962. (pp. 1065-1070).

Reports in this issue are for week ending August 30, unless otherwise indicated.

WEATHER OF THE WEEK ENDING SEPTEMBER 2, 1963

Maximum temperatures to 100° early in the week in the Dakotas gave way to a period of cooling as Canadian air pushed its way over the Nation from the northern Rockies to the East Coast. Final day (September 1) maxima in Montana were as low as 61° at Billings and weekly averages over the northern Great Plains were deficient from normal by as much as 6°. Temperatures were mostly cool all week northward from the central Atlantic States and lower Ohio Valley and period averages reached to 6° below normal from Illinois to Virginia and New York. Roanoke, Virginia, heated to only 69° on the 26th. Daily highs exceeded 90° throughout much of the Gulf States; Oklahoma and Arkansas resulted in averages to 5° above normal. Before the cooler air reached Arkansas on the 29th, Ft. Smith and Little Rock experienced maxima exceeding 100° on three days. The high soared to 106° on the 26th and 28th at the former community, and to 107° on the 28th at the latter.

Near or below normal temperatures over much of the Far West were partly due to cloudy skies and quite general shower activity. However, very little rain fell in California, the Pacific Northwest and northern Montana where weekly departures were slightly above normal; some freezing early in the week caused little damage in Nevada. General showers over much of the Rockies and plateau of the Far West deposited some moderate to heavy amounts locally. Brigham City, Utah, received its first measurable rainfall since June 24. An August precipitation total of over 10 1/2 inches at Payson, Arizona, set an all time high record for any month as much of that State continued to receive nearly unprecedented rains. Much of the northeast quarter of the Nation had a mild dry week; most areas had weekly totals of one inch. Totals less than one-half inch covered extensive areas from the central Atlantic States into Wisconsin and Missouri, southern Georgia, and eastern Florida and most of Louisiana and southern and central Texas. Heavy showers were moving into Wisconsin as the period closed. Large areas of the Great Plains, upper Mississippi Valley and the Gulf Coast from Mississippi to Key West, Florida, and the southern Appalachians and Tennessee Valley had general rains over one inch with local areas receiving excessive totals. A weekly total of 6.43 inches fell on the 29th and 30th at Mobile, Alabama. Nashville, Tennessee, had a 12-hour drenching of 5.22 inches by 6 a.m. on the 29th and Shelbyville, Tennessee, measured 8.30 inches during the week. Many stations in eastern Nebraska and western Iowa had totals of 2 inches. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WISCONSIN - Populations little changed; 75 percent of Melanoplus femurrubrum females with eggs in central and southern areas. Populations fluctuate, 2-40 per square yard in Columbia, Marquette, Waushara, Portage, and Waupaca County area where grasshoppers apparently consistently high. Damage noticeable in this area, but not alarming in many fields. Disease, parasites and predators common. (Wis. Ins. Sur.). MINNESOTA - Adult grasshopper survey completed. Populations in southeast and south central districts quite scattered and localized. Counts per square yard 0-50, with most fields rated noneconomic to light. Higher counts ranging threatening or better found in Houston, Goodhue, Wabasha, Rice and Dakota Counties. M. femurrubrum dominant species by far. M. differentialis, and at times M. bivittatus, can be found, but never exceeding 10 percent of grasshopper population. Fungus disease noted in grasshoppers in some fields. Blister beetles, grasshopper egg predators, found but populations generally low. (Minn. Ins. Rpt.). SOUTH DAKOTA - Adult grasshopper survey completed. Results show a substantial buildup in both cropland and rangeland. Degree of infestation on rangeland and acres infested by counties as follows: Custer, 64,640 threatening and 34,560 light; Dewey, 14,060 threatening and 67,220 light; Fall River, 43,400 light; Haakon, 24,960 threatening and 131,840 light; Harding, 11,520 threatening and 64,640 light; Meade, 9,600 threatening and 204,800 light; Pennington, 12,800 threatening and 46,720 light; Shannon, 17,939 threatening and 86,801 light; Ziebach, 6,300 threatening and 39,480 light. Cropland infestation principally in central part of State; area of infestation extends from Nebraska line on south to North Dakota line on north; also, isolated cropland area infested in northwestern part of State that has higher population than previous years. (Burge, Zimmerman). KANSAS - Survey conducted August 21 and 22 in central and western areas (including Clay, Mitchell, Osborne, Rooks, Ellis, Trego, Ness, Lane, Scott and Rush Counties). Populations on all rangeland generally very low, never exceeding 3 per square yard. Roadsides supported only moderate populations, ranging 3-10 per square yard. Melanoplus spp. dominant in roadside habitats, with M. femurrubrum being most abundant. Rangeland supported slant-faced species primarily. Orphulella pelidna and O. speciosa dominant in central counties and Opeia obscura dominant farther west. Occasional band-winged species encountered, but sporadic and not of economic consequence. (Brusven, Knutson).

COLORADO - Grasshopper survey in 46 counties indicates lowest level of infestation since 1959. Aulocara elliotti, Amphitornus coloradus, Melanoplus sanguinipes and M. bivittatus present at economic levels on 37,500 rangeland acres (averaging 25 per square yard) in Boulder and Larimer Counties. In Archuleta County, 2,400 rangeland acres had 20 per square yard; principal species Camnula pellucida, M. sanguinipes and M. bivittatus. In northeast, populations concentrated in roadsides where moisture available to annual growth; principal species M. bivittatus, M. femurrubrum and M. differentialis; drought influenced conditions. Severe dry conditions in southeast reduced populations below economic levels. (Colo. State Dept. Agri., PPC). Grasshoppers collected from Boulder-Larimer County infested area for research purposes parasitized and diseased 40-75 percent; mainly with Scarcophaga sp. and bacterial disease. (Ferkovich). UTAH - Grasshopper damage continues in several large areas of eastern Millard County, southern Juab County, northern and southern Sanpete County and northern Sevier County. (Knowlton). NEVADA - Grasshoppers, predominantly M. sanguinipes and M. packardii, heavy (60-80 per square yard) and causing severe damage to alfalfa in Squaw Valley, Elko County; controls being initiated. (Earnist).

CORN EARWORM (Heliothis zea) - LOUISIANA - Ranged 6-24 per 30 feet of row on soybeans in St. Landry, Avoyelles and West Baton Rouge Parishes; lower generally in Tensas, Madison and East Carroll Parishes. (Newsom). ARKANSAS - Major outbreak on soybeans occurring in southeast. Majority of fields checked in Lincoln and Desha Counties had economic infestations. Highest counts found ranged 125-150 larvae per 30 row feet. A few higher counts reported. Most counts much lower. Also reported on soybeans in Logan County, west central area. Extremely heavy moth flights in all areas could result in outbreaks in other soybean-producing areas. (Ark. Ins. Sur.). Range per 30 feet of row in Lonoke County 0-8

compared with 0-18 previous week; 8 of 15 fields infested. (Sharp). Counts on sorghum in Lincoln County, southeast, ranged 75-80 per 100 heads. (Ark. Ins. Sur.). OKLAHOMA - Counts per 10 sweeps 0-10 in Beckham County alfalfa and 3-6 in Choctaw County. Counts per 100 sorghum heads 150 in Marshall County and 25-50 in Kingfisher County. Counts of 36 per 100 terminals found on peanuts in Bryan County and 5 per 10 feet of row on soybeans in Wagoner County. (Okla. Coop. Sur.). KANSAS - Reports received of feeding damage to sorghum whorls in Barber County, south central, and soybeans in Cherokee County, southeast. (Gates). MISSOURI - Counts in soybeans in northeast ranged 0-11 per 100 sweeps; counts in alfalfa 0-14 per 100 sweeps. (Munson, Thomas, Wood). MINNESOTA - Low numbers in field corn in few southeast and south central district fields. (Minn. Ins. Rpt.). WISCONSIN - Eggs becoming more common in silks of sweet corn in southern counties; populations light in most areas. (Wis. Ins. Sur.). MICHIGAN - Three adults taken in a blacklight trap in southern Monroe County; infestations expected. (Baker, Newman). OHIO - Small number of adults taken in blacklight traps at Ripley, Wooster, Hoytville and Vickery. Egg masses expected on late sweet corn soon. (Schurr). NEW YORK - Continues scarce or absent on sweet corn in Hudson Valley. No additional adults trapped at Poughkeepsie after one of August 17. No larvae or eggs found on ears of sweet corn during week; no adults developed from new pupae held in cartons since July. Canadian-style weather evidently controlling pest. (N.Y. Wkly. Rpt., Aug. 26). MARYLAND - Moths increasing steadily in blacklight traps in Queen Annes and Worcester Counties; eggs light on soybeans August 29 in Talbot and Wicomico Counties. (U. Md., Ent. Dept.). DELAWARE - Adult collections in a blacklight trap in Sussex County totaled 1,252 for last 8 nights (Aug. 22-29), indicating extremely heavy moth flights in this area. (Burbutis, Evans). VIRGINIA - No infestations of soybeans observed in King George, Westmoreland, Richmond, Essex, Middlesex, Gloucester and King and Queen Counties. Examination of corn ears in same area revealed lighter than usual infestation in fields. (Rowell, Amos). Continued to increase on Eastern Shore and untreated corn ears 100 percent infested. (Hofmaster). NORTH CAROLINA - Becoming fairly abundant on soybeans locally in Wake County. (Brim). GEORGIA - Light on heads of millet and grain sorghum; light to moderate in whorls of grain sorghum and millet; and light to moderate on soybeans in middle and southern areas. (Johnson). NEW MEXICO - Larvae damaging leaves, tassels and ears of corn in most areas of State. (N.M. Coop. Rpt.). UTAH - Moderately numerous on corn at Green River, Emery County. (Knowlton). NEVADA - Medium to heavy on corn, especially ears, in southern Lincoln and Nye Counties and Clark County. (Bechtel).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Moth catches continue in trap at few to several per night in Hudson Valley. Larvae, up to fifth instar, found in sweet corn ears by August 24; treated corn clean. Infestation of untreated tasseling planting about 15 percent. Borers chief reason for current light silk treatment program 5 days apart. (N.Y. Wkly. Rpt., Aug. 26). MARYLAND - Second-generation larvae increasing in field corn in all sections. (U. Md., Ent. Dept.). DELAWARE - Infestation in field corn ranges 10-50 percent; heaviest in Sussex County. Fresh egg masses still common on corn in many areas of State and adult flights remain very high; light trap collections August 22-29 totaled 406. (Burbutis, Evans). OHIO - Second-generation adult flight reaching peak at Wooster, Wayne County. (Schurr). WISCONSIN - Fresh egg masses still being found; larvae becoming more common in ears of sweet corn. (Wis. Ins. Sur.). MINNESOTA - Peak moth flight occurred during week of August 19-23 according to light traps. Relatively high numbers collected at Worthington and Fergus Falls. Development in southeast 13 percent first instar, 13 percent second instar, 35 percent third instar, 17 percent fourth instar and 22 percent fifth instar; pupation and emergence trace. Borers per 100 plants in southeast 12. (Minn. Ins. Rpt.). LOUISIANA - Infestations in one late-planted field in Bossier Parish averaged 1-2 larvae per plant, with 60 percent of plants infested. (Newsom).

FALL ARMYWORM (*Laphygma frugiperda*) - MARYLAND - Infestations in late corn continuing in all sections; few fields require treatments. (U. Md., Ent. Dept.). GEORGIA - Light to moderate infestations in whorls of grain sorghum and millet. (Johnson). ALABAMA - Heavy locally on Sudan grass in Montgomery County; controls applied. (Whatley). OKLAHOMA - Destroyed some early rye plantings in Cimarron

County and moderate infestations on millet in Adair County. (Okla. Coop. Sur.). COLORADO - Larvae infesting 5-7 ears per 10 checked in some Prowers County fields; chemical controls not satisfactory. (Schweissing). ARIZONA - Heavy in Graham County and moderate to heavy in Maricopa and Pinal Counties; larvae 20-80 per 100 sweeps on alfalfa in Graham County and 5-30 per 100 sweeps in Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEVADA - Heavy on corn in Pahranaqat Valley, Lincoln County; Las Vegas, Moapa and Virgin Valleys, Clark County; and Pahrump Valley, Nye County. (Bechtel).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - LOUISIANA - Infestations general over northern half of State; heavy on some late-planted corn. Infestation of stalks 100 percent in one late-planted field in Bossier Parish; averaged 6 larvae per plant. About 10 percent pupae, 15 percent diapausing larvae and all larval stages present. (Newsom).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Marked increase in egg deposition by third-generation moths during last half of August. Few moderate to heavy infestations developing in some areas. (Newsom).

SORGHUM WEBWORM (Celama sorghiella) - GEORGIA - Light on heads of millet and grain sorghum. (Johnson). ARKANSAS - Ranged about 75-80 per 100 sorghum heads in Lincoln County. (Ark. Ins. Sur.).

A NOCTUID (Septis apamiformis) - WISCONSIN - Prevalent on wild-rice being harvested in Three Lakes area, Oneida County. (Wis. Ins. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Light in Curry County sorghum fields; averaged about 3-5 adults per 100 sweeps in fields checked. (N.M. Coop. Rpt.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MINNESOTA - Blue Earth, Dakota, Goodhue, Olmsted and Redwood Counties added to growing list of counties infested by this species; populations low. Species has moved rapidly across State. Species first found in extreme southwestern corner of State in 1961 and can now be found in Dakota County on eastern border. Corn growers can expect to have problems with this rootworm in next few years. (Minn. Ins. Rpt.). KANSAS - Populations of rootworms, primarily this species, decreasing rapidly in north central and northeast areas. (Burkhardt, Peters).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Adults common on silks of corn, in alfalfa fields and in roadside grasses in southern counties. (Wis. Ins. Sur.). OHIO - Heavy adult populations observed in continuously grown field corn plots at Hoytville, Wood County. Adults 8-45 per ear; actively feeding on silks. Very few adults observed in rotated corn fields one-half mile from continuously grown corn plots. (Lyon). Adults feeding on silks of untreated corn near Ottawa, Putnam County. Only outer rows infested. (Gerber, Aug. 22). Adults feeding on silks at Circleville, Pickaway County. (Blair, Aug. 23).

TOOTHED FLEA BEETLE (Chaetocnema denticulata) - NEW YORK - Streaked husks of untreated sweet corn in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 26).

SAP BEETLES - NEW YORK - Now becoming scarce in ears of sweet corn in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 26). DELAWARE - Carpophilus lugubris infestations rather heavy on corn, especially in Sussex County. (Burbutis, Evans). UTAH - C. lugubris moderately numerous on corn at Green River, Emery County. (Knowlton).

JAPANESE BEETLE (Popillia japonica) - NEW YORK - Noted on occasional silk of untreated sweet corn in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 26).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Nymphs decreased in rice fields in Lonoke County. Counts per 100 sweeps in 2 fields averaged 28 adults and 5 nymphs compared with 35 adults and 18 nymphs previous week. Counts per 100 heads in 16 fields averaged 5 adults and 1 nymph compared with 4 adults and 1 nymph previous week. (Sharp).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW YORK - Populations declined on sweet corn in Hudson Valley since mid-August. (N.Y. Wkly. Rpt., Aug. 26). MARYLAND - Declined somewhat on corn in most sections. (U. Md., Ent. Dept.). OKLAHOMA - Light on grain sorghum checked in Garfield, Major, Kingfisher, Pushmataha and Choctaw Counties. (Okla. Coop. Sur.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Present on corn in all areas of State. Populations vary considerably due to recent rains. Light to moderate in Prowers and Bent Counties. Heavy in Otero, Crowley and Pueblo Counties in untreated fields; some fields treated earlier may need additional controls. Populations reduced considerably in Larimer County due to recent rains. Damaging populations present on corn in Montezuma County. (Schweissing, Jenkins, Hantsbarger). Light to heavy on sorghum in Prowers, Bent, Otero, Crowley and Pueblo Counties, with severe burning of leaves. (Schweissing). UTAH - Damaging field corn foliage at Springville, Utah County. (Knowlton).

SPIDER MITES - NEVADA - Undetermined species light on corn in Panaca, Lincoln County, and light to heavy in Pahranagat Valley, Lincoln County, and Stillwater, Churchill County. (Bechtel, Busted).

ALFALFA CATERPILLAR (*Colias eurytheme*) - NEVADA - Larvae, mostly small, causing heavy damage to alfalfa in Virgin Valley, Clark County. Large adult flights also present throughout same area. (Bechtel). ARIZONA - Large infestations remain in alfalfa in Yuma and Graham Counties; some activity noted in Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Larvae 6-15 per 100 sweeps in Curry County alfalfa and 4-20 per 100 sweeps in Grants area, Valencia County. Adults abundant in fields. (N.M. Coop. Rpt.). UTAH - Increasing in Salt Lake and Cache County alfalfa. (Knowlton). COLORADO - Adults numerous in many fields of alfalfa; larvae appearing in some fields in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Schweissing). OKLAHOMA - Populations of 7-12 per 10 sweeps observed on Choctaw County alfalfa. (Okla. Coop. Sur.). MINNESOTA - Counts in alfalfa in southeast and south central districts generally high, 100-500 per 100 sweeps. (Minn. Ins. Rpt.). WISCONSIN - Larvae numerous in many fields of alfalfa in southern part of State; averaged as high as 6 per sweep in certain fields. (Wis. Ins. Sur.). ILLINOIS - Larvae vary 2-80 (average 54) per 100 sweeps on alfalfa in east and northeast districts. (Ill. Ins. Rpt.). DELAWARE - Fairly common on alfalfa in New Castle County. (Burbutis, Evans).

ALFALFA WEBWORM (*Loxostege commixtalis*) - DELAWARE - Averaged 2-3 per 10 sweeps on alfalfa in Kent County. (Burbutis, Evans). MINNESOTA - Generally present in low numbers in southeast and south central districts on alfalfa; occasional field with 100-150 per 100 sweeps. (Minn. Ins. Rpt.).

WEBWORMS (*Loxostege* spp.) - OKLAHOMA - Damaging alfalfa in Cimarron County; light in Kingfisher and Major Counties. (Okla. Coop. Sur.). SOUTH DAKOTA - Larvae 15-20 per square yard in 18-inch alfalfa in Bon Homme County; damage noted. (Hintz).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - CALIFORNIA - Medium on 2,000 acres of alfalfa in Lancaster vicinity, Los Angeles County. (May). NEVADA - None found in northern Nye and White Pine Counties, and only occasional specimens found in Clark, Esmeralda and Lincoln County alfalfa. (Bechtel, Cooney). Heavy on susceptible variety of alfalfa in caged plots at University of Nevada Experiment Station, Reno, Washoe County. (Carnahan). COLORADO - Large numbers continue to appear on alfalfa in many fields in Prowers, Bent, Otero, Crowley and Pueblo Counties. Populations vary 500-7,000 per 100 sweeps, depending upon recent moisture conditions in various fields. (Schweissing). OKLAHOMA - Light on alfalfa; counts per 10 sweeps 50-150 in northwest, 30-50 in west central and 25-30 in southeast. (Okla. Coop. Sur.). SOUTH DAKOTA - Populations increasing in southeast; ranged 25-400 per 100 sweeps in alfalfa. (Hintz). WISCONSIN - Little change observed in populations; winged forms decreased noticeably in heavier infested fields. Light infestations observed in Sugar River flats northwards towards Albany, Green County, and few present in sandy area near Mazomanie, western Dane County, and in alfalfa near Sauk City, Sauk County. Range of dispersal difficult to assess. Damage not yet apparent in heavier infested alfalfa and predators relatively scarce at present. (Wis. Ins. Sur.).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Averaged less than 10 per sweep in fields checked in Clark, Esmeralda, Lincoln, Nye and White Pine Counties. (Bechtel, Cooney). ARIZONA - Light to moderate increases occurred on alfalfa in Maricopa and Graham Counties; 3,000-5,000 per 100 sweeps in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Light in alfalfa near Bluewater, Valencia County, and in Sandoval, Curry and Bernalillo Counties. (N.M. Coop Rpt.). COLORADO - Populations light in majority of alfalfa fields checked and not economically important. Ranged 0-1,000 per 100 sweeps in Arkansas Valley. (Schweissing). MINNESOTA - Averaged 25 per 100 sweeps on alfalfa in southeast and south central districts; populations down. (Minn. Ins. Rpt.). ILLINOIS - Vary 50-3,200 (average 1,127) per 100 sweeps in clover and alfalfa in east and northeast districts. (Ill. Ins. Rpt.). MARYLAND - Ranged 0-10 per sweep on alfalfa in Frederick and Queen Annes Counties. (U. Md., Ent. Dept.). DELAWARE - Ranged 100-500 per 100 sweeps on alfalfa throughout State; averaged 1,500 per 100 sweeps locally in Kent County. (Burbutis, Evans).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Light to relatively heavy infestations found in alfalfa in Valencia and Curry Counties; 10-25 per 100 sweeps near Bluewater, Valencia County, and 40-90 per 100 sweeps in Curry County. (N.M. Coop. Rpt.). ARIZONA - Counts 80-150 per 100 sweeps on alfalfa in most areas; no increases noted. (Ariz. Coop. Sur.). NEVADA - Varied 6-35 per sweep in all alfalfa checked in Clark, Esmeralda, Lincoln, Nye and White Pine Counties. (Bechtel). UTAH - Averaged 9 per sweep on alfalfa at Kamas, Summit County; 80 percent nymphs. (Knowlton).

TARNISHED PLANT BUG (Lygus lineolaris) - MARYLAND - Averaged 4-6 per 10 sweeps on alfalfa in Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Average per 10 sweeps throughout State 8-9 on alfalfa and 2-5 on soybeans. (Burbutis, Evans). OHIO - Adults 8 per 50 sweeps in red clover locally in Seneca County; major pest found in sweepings. (Lyon).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - ILLINOIS - Adults vary 10-80 (average 37) per 100 sweeps in clover and alfalfa in northeast and east districts. (Ill. Ins. Rpt.). OHIO - Counts 6 per 50 sweeps on alfalfa locally in Sandusky County; major pest found in sweepings. (Lyon).

MEADOW SPITTLEBUG (Philaenus spumarius) - DELAWARE - Adults average 8 per 10 sweeps on alfalfa in New Castle County. (Burbutis, Evans). OHIO - Adults very low in alfalfa and red clover throughout northwest. (Lyon).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Counts of 200 per 10 sweeps noted on field of alfalfa in Major County, northwest; highest population reported this season. (Okla. Coop. Sur.). ARIZONA - Increases noted in alfalfa in all areas except Yuma County where populations static; counts 1,000-3,000 per 100 sweeps. (Ariz. Coop. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Decreased considerably from previous weeks; 0-3 per sweep on alfalfa in Frederick and Queen Annes Counties. (U. Md., Ent. Dept.). DELAWARE - Averaged 12 per 10 sweeps on soybeans and alfalfa throughout State. (Burbutis, Evans). WISCONSIN - Counts relatively high in many southern area alfalfa fields. Yellowing very apparent in most fields where counts average as high as 15 per sweep. (Wis. Ins. Sur.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - DELAWARE - Common on alfalfa throughout State. (Burbutis, Evans).

AN ALFALFA SEED CHALCID (Bruchophagus roddi) - ARIZONA - Increasing on alfalfa seed crop in Yuma and Pinal Counties, and in Buckeye and Gila Bend areas of Maricopa County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Several fields of alfalfa in Frederick County showing 2-10 larvae per sweep. (U. Md., Ent. Dept.).

BLISTER BEETLES (*Epicauta* spp.) - MISSOURI - Adults observed in soybeans and alfalfa in northeast and west central areas; ranged 5-42 per 100 sweeps in infested fields. (Munson, Thomas, Wood). ILLINOIS - *E. pennsylvanica* very abundant in old alfalfa in many areas of State; cattle reported refusing to eat "greenchop" due to presence of mashed blister beetles. (Ill. Ins. Rpt.).

CRICKETS - WISCONSIN - *Gryllus* spp. and *Nemobius fasciatus* noticeable in alfalfa in western Dane and Sauk Counties. (Wis. Ins. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Light to moderate on soybeans in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Larvae per 10 sweeps on soybeans 5 in New Castle and Kent Counties and 2 in Sussex County; 2 per 10 sweeps on alfalfa throughout State. (Burbutis, Evans). VIRGINIA - Frequently found on soybeans in King George, Westmoreland, Richmond, Essex, Middlesex, Gloucester and King and Queen Counties, but not in large numbers. (Rowell, Amos). LOUISIANA - Ranged 0-11 per 30 feet of row on soybeans in St. Landry, Avoyelles and West Baton Rouge Parishes; also active in Tensas, Madison and East Carroll Parishes. (Newsom). ARKANSAS - Ranged 2-29 per 30 feet of row in 15 soybean fields checked in Lonoke County compared with 1-29 previous week. (Sharp). MISSOURI - Counts in soybeans in northeast ranged 0-19 per 100 sweeps; 0-8 per 100 sweeps in alfalfa in same area. (Munson, Thomas, Wood).

GRANULATE CUTWORM (*Feltia subterranea*) - SOUTH CAROLINA - Unidentified cutworms on soybeans reported in CEIR (13)33: 947 reared and determined this species by W. J. Reid, Jr. (Nettles et al.).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - GEORGIA - Light to moderate on soybeans in middle and southern areas. (Johnson). LOUISIANA - Ranged 2-31 per 30 feet of row in soybeans in St. Landry, Avoyelles and West Baton Rouge Parishes; also active in Tensas, Madison and East Carroll Parishes. (Newsom).

A LOOPER (*Pseudoplusia includens*) - LOUISIANA - Loopers, predominantly this species, ranged 11-51 per 30 feet of row on soybeans in St. Landry, Avoyelles and West Baton Rouge Parishes. Also active in Tensas, Madison and East Carroll Parishes, but populations generally considerably lower. (Newsom).

CABBAGE LOOPER (*Trichoplusia ni*) - GEORGIA - Light to moderate on soybeans in middle and southern areas. (Johnson).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Adults causing moderate foliage injury to soybeans in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). VIRGINIA - Much less abundant on soybeans than previous year in King George, Westmoreland, Richmond, Essex, Middlesex, Gloucester and King and Queen Counties. (Rowell, Amos). LOUISIANA - Leaf beetles, predominantly this species, but with appreciable numbers of *Diabrotica balteata* in some fields, ranged 17-63 per 30 feet of row on soybeans in St. Landry, Avoyelles and West Baton Rouge Parishes. (Newsom). ARKANSAS - Ranged 3-83 per 30 feet of row of soybeans in Lonoke County compared with 0-163 previous week; 15 fields checked. (Sharp).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Much less abundant on soybeans in King George, Westmoreland, Richmond, Essex, Middlesex, Gloucester and King and Queen Counties than in 1962. (Rowell, Amos).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - DELAWARE - Fairly common on soybeans, especially in New Castle County. (Burbutis, Evans).

STINK BUGS - LOUISIANA - Populations at lowest level in several years for time of year; none observed in many soybean fields. (Newsom). ARKANSAS - Counts light on soybeans in Lonoke County. (Sharp). MISSOURI - *Acrosternum hilare* infestations common in soybeans nearing maturity in central area; ranged 5-15 adults per 100 sweeps. (Munson, Thomas, Wood).

WHITEFLIES - MARYLAND - Undetermined species very conspicuous in many soybean fields in Wicomico and Queen Annes Counties. (U. Md., Ent. Dept.).

SPIDER MITES - VIRGINIA - Heavily damaged soybeans on Eastern Shore; many fields hurt beyond help. (Hofmaster).

SOYBEAN CYST NEMATODE (Heterodera glycines) - One additional property in Pulaski County and 4 properties in Alexander County, ILLINOIS, found infested. Probably 150 new properties show damage in southeastern MISSOURI where numerous new fields found infested. Possibly 25 percent of newly infested fields outside of regulated area in known infested counties. (PPC, Cent. Reg., July Rpt.). Specimens from Virginia Beach, VIRGINIA, confirmed; second property found infested later. (PPC, East. Reg., July Rpt.).

A CHINCH BUG (Blissus leucopterus insularis) - LOUISIANA - Severe infestations on St. Augustine grass lawns in New Orleans, Baton Rouge, Lafayette and Alexandria areas. Insecticide resistance in New Orleans populations of this species has developed to point that control has become extremely difficult. (Newsom).

RHODES-GRASS SCALE (Antonina graminis) - LOUISIANA - Infesting a Bermuda grass lawn in Baton Rouge. (Newsom).

SOD WEBWORMS - RHODE ISLAND - Adults of Crambus spp. common at night in Kingston and Slocum, Washington County. (Mathewson, Skogley). ILLINOIS - Damaging lawns in Champaign area. (Ill. Ins. Rpt.). OHIO - Moderate numbers of Crambus spp. adults still being collected in blacklight traps throughout State. However, populations declining. (Lyon, Walker).

A WHITE GRUB (Phyllophaga ephilida) - ILLINOIS - Larvae, most third stage, damaging a lawn in Champaign, Champaign County; averaged 4 per square foot. Birds feeding heavily. (Ill. Ins. Rpt.).

THRIPS (Chirothrips spp.) - ARIZONA - Large populations present on second-crop Bermuda grass in Yuma County; some controls applied. (Ariz. Coop. Sur.).

A BERMUDA GRASS MITE (Aceria neocynodonis) - ARIZONA - Abundant on second-crop Bermuda grass in Yuma County; some fields treated. (Ariz. Coop. Sur.).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - At least one additional spray needed on late maturing apples first week of September. (Minn. Ins. Rpt.).

WISCONSIN - Few adults continue flight; 10 adults taken in Madison ammonia bait trap in MacIntosh apple tree during period August 25-27. Total of 9 adults caught in flowering crab apple at Madison during same period; 5 taken in commercial orchard at Milton during week of August 20. (Wis. Ins. Sur.).

MICHIGAN - Adult numbers low in northwest and southwest areas; 2 females and 1 male observed in Berrien County August 28. (Carpenter, Mullett). OHIO - Infested apples at Columbus, Franklin County; adult emergence declining but fairly large numbers still appearing in emergence cages in Wayne County. No second-brood maggots yet in northeast. (Holdsworth, Forsythe, Still). MAINE - Emergence in cages at Highmore Farm, Monmouth, Kennebec County, down to occasional flies, expected to cease by September 1. (Boulanger, Aug. 24).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - OHIO - Serious infestations building up in untreated peach orchards near Barnesville, Belmont County. (Holdsworth).

MARYLAND - Heavy on untreated peaches at Centreville, Queen Annes County. (U. Md., Ent. Dept.). ALABAMA - Most peach fruit harvested; larvae now heavy in peach twigs in central area. (McQueen).

CODLING MOTH (Carpocapsa pomonella) - MICHIGAN - Adults continued to emerge in Van Buren County cage until August 27; no pupae present and only larvae considered overwintering specimens in cages now. Only 9 adults taken at blacklight trap in Livingston County week ending August 26. (Carpenter, Newman). OHIO - Emergence declined considerably August 20-30 compared with that of August 9-20 in Wayne County. (Forsythe).

RED-HUMPED CATERPILLAR (Schizura concinna) - VIRGINIA - Severe on apple trees in orchard near Hurricane, Wise County. (Tarpley, McCormick, Aug. 21).

PEACH TREE BORERS - ALABAMA - Sanninoidea exitiosa and Synanthedon pictipes causing extensive damage to untreated peaches in Lee, Macon, and Elmore Counties. (McQueen). NEW JERSEY - Controls recommended for S. pictipes about September 1 in problem orchards. (Ins.-Dis. Newsltr., Aug. 27).

PLUM CURCULIO (Conotrachelus nenuphar) - ALABAMA - Adults numerous recently in peach orchards in Chilton County although no fruit present. (Helms).

EUROPEAN RED MITE (Panonychus ulmi) - MAINE - Populations in untreated blocks in Monmouth area, Kennebec County, showed drastic reductions during week of August 18. (Boulanger). MICHIGAN - Egg laying in overwintering sites and on calyx end of apples underway generally in southwestern area; reported heavy in northwestern area orchards. (Carpenter, Mullet).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MICHIGAN - Increasing and damaging on apples and prunes in southwest orchards; moderate in northwest. (Carpenter, Mullett, Janes).

SAN JOSE SCALE (Aspidiotus perniciosus) - MARYLAND - Infested cherry at Fredrick, Frederick County. (U. Md., Ent. Dept.).

PEAR-SLUG (Caliroa cerasi) - UTAH - Severely skeletonized many sweet cherry trees in Brigham-Perry area of Box Elder County. (Knowlton). OHIO - Present on 2 to 3-year-old sour cherry at Wooster, Wayne County; leaf skeletonization not very extensive. (Forsythe).

WALNUT CATERPILLAR (Datana integerrima) - VIRGINIA - Larvae light on black walnut locally in Spottswood, Augusta County (Woodside, Aug. 23) and severe on pecan trees at home in Lancaster County (Rowell, McSwain, Aug. 26).

FALL WEBWORM (Hyphantria cunea) - GEORGIA - Light to moderate on pecan trees in middle and southern areas. (Johnson).

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Medium in walnuts in Delhi area, Merced County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Light populations reported from Bryan (south central) and Ottawa (northeast) Counties. (Okla. Coop. Sur.). ALABAMA - Few adults noted in Franklin County. (Ponder).

WALNUT HUSK FLY (Rhagoletis completa) - OHIO - Adults very active in northeastern area. (Still, Forsythe).

GRAPE MEALYBUG (Pseudococcus maritimus) - DELAWARE - Common on grapes locally in Kent County. (Bray).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - Egg laying heavy in poorly treated southwestern vineyards August 20-27; early instars found on grapes August 27-28. (Carpenter).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Increases noted on Valencia oranges and on tangerines in Yuma County. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Continues a problem on tender growth of citrus and on young nursery stock in Yuma County. (Ariz. Coop. Sur.).

MEXICAN FRUIT FLY (Anastrepha ludens) - Three specimens taken from traps at Ensenada, Baja California, MEXICO, July 4; eradication measures started July 8. (PPC, Mex. Reg., July Rpt.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - MEXICO - Total of 3,509 traps inspected 7,013 times in States of Baja California, Sonora, Sinaloa, Chiapas, Tabasco, Guerrero, Campeche, Yucatan, Tamaulipas, Veracruz and the Territory of Quintana Roo; all inspections negative. (PPC, Mex. Reg., July Rpt.).

TRUCK CROP INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Specimens taken in Monroe County in late July determined this species by R. W. Hodges. (cf. CEIR 13 (32): 916 and (35): 1014). This is first time during recent years that this species caused serious economic loss to potatoes in State. Additional farm with infested potatoes found in same county. (Wells, Janes, Nevel).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MARYLAND - Adults and larvae caused noticeable injury to large planting of eggplant at Carmichael, Queen Annes County. (U. Md., Ent. Dept.). OHIO - Immatures caused moderate damage to potato foliage throughout north central area. (Lyon).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - MICHIGAN - Adults common on potatoes in southern areas. (Janes). OHIO - Caused severe feeding damage to potatoes in Medina County; adults heavy and actively feeding. (Lyon).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Generally light this season on peppers in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Very heavy on peppers locally in Sussex County; generally present on cabbage in most areas of State. (Burbutis, Evans). COLORADO - Low to moderate on late potatoes in Weld County; ranged 20-500 per 100 leaves. Prevailing weather conditions will have tendency to increase number. (Berry).

Potato Aphids in Maine - Populations on untreated potato foliage at Aroostook Farm, Presque Isle, Aroostook County, continued to decrease sharply due chiefly to action of entomogenous fungi and insect predators; overall numbers small. In commercial plantings, reports indicate aphids abundant in some plantings in vicinity of St. Agatha, northern Aroostook County. Species involved include BUCKTHORN APHID (Aphis nasturtii), POTATO APHID (Macrosiphum euphorbiae), GREEN PEACH APHID (Myzus persicae) and FOXGLOVE APHID (Acyrtosiphon solani). (Shands et al).

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Appearing in some late-planted beans in Arkansas Valley. (Schweissing). WISCONSIN - Few adults found in Dane County; populations very low but appear larger than in 1962. (Wis. Ins. Sur.). ALABAMA - Heavy on beans in home gardens in Lee, Autauga, Macon and Tallapoosa Counties. (McQueen).

IMPORTED CABBAGEWORM (Pieris rapae) - MAINE - Light and causing moderate damage to cabbage in Bangor, Penobscot County; moderate and causing moderate damage to rutabaga in Dixfield, Oxford County. (Boulanger, Aug. 24). MARYLAND - Eggs noted on broccoli planting at Salisbury, Wicomico County. (U. Md., Ent. Dept.). DELAWARE - Eggs and larvae present to very common on cole crops in many areas of State. (Burbutis, Evans). OHIO - Feeding damage moderate to heavy on untreated cabbage throughout north central area. (Lyon). MICHIGAN - Larval feeding heavy on cabbage and cauliflower in Ingham County. Heavier than usual in Allegan County. (Evans, Janes). UTAH - Commonly damaging in Salt Lake County home gardens. (Knowlton).

CABBAGE APHID (Brevicoryne brassicae) - NEW YORK - Heavy in Suffolk County. (Aug. 20). Serious problem on crucifers in Monroe County; various insecticide mixtures used. Active in most fields in Niagara County; controls underway. (N.Y. Wkly. Rpt., Aug. 26).

A NOCTUID MOTH (Proxenus mindara) - CALIFORNIA - Heavy on cantaloups in Huron, Fresno County. (Cal. Coop. Rpt.).

SQUASH VINE BORER (Melittia cucurbitae) - WISCONSIN - Larvae troublesome in several home gardens in Grant County. (Wis. Ins. Sur.).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - MARYLAND - Adults moderate on late cucumbers at Ingleside, Queen Annes County. (U. Md., Ent. Dept.).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Causing extensive damage in sugar beet fields in Kearny Park area, Fresno County; all stages present. (Dunnegan).

ONION THRIPS (Thrips tabaci) - COLORADO - Populations on onion fields very irregular; ranged 0-20 per plant in Otero, Prowers, Bent, Crowley and Pueblo Counties. (Schweissing).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - LOUISIANA - Infestations general throughout major sweetpotato-growing sections. (Newsom).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Ranged 0-70 per 100 sweeps on sweetpotatoes in East Baton Rouge, St. Martin, St. Landry, Acadia and Lafayette Parishes; larvae heavy in many fields with controls unsatisfactory. (Newsom).

CYCLAMEN MITE (Steneotarsonemus pallidus) - MINNESOTA - Damage to everbearing strawberry plants in Forest Lake area severe. Red Rich and Ogallala varieties often damaged and several large fields of Gem also attacked this year. Fruit often deformed with catfaced appearance. (Minn. Ins. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - NEW YORK - Heavy in Suffolk County; 15-20 eggs per plant and at least 6 first instars per plant Aug. 20. (N. Y. Wkly. Rpt.). NEW JERSEY - Appears more prevalent than in 1962 on cole crops; some fields seriously damaged. (Ins.-Dis. Newsltr., Aug. 27). MARYLAND - Larvae infesting beans, broccoli, cucumbers and squash at several places in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Eggs and larvae present to very common on cole crops in many areas. (Burbutis, Evans). VIRGINIA - Favored by dry weather on Eastern Shore; more of a problem than any other year since 1959. Broccoli suffered most, but cucumbers and late tomatoes also damaged. (Hofmaster). LOUISIANA - Caused considerable injury to cabbage in some areas; up to 5-8 per plant not uncommon. (Newsom). WISCONSIN - Caused considerable damage to planting of commercial potatoes in Portage County; pupation complete on August 27 with many emerged. (Wis. Ins. Sur.).

LEPIDOPTEROUS LARVAE - LOUISIANA - Complex of Pseudoplusia includens, Prodenia eridania and Pilocrocis tripunctata present in many fields in sufficient numbers to cause conspicuous foliage damage. (Newsom).

TOMATO FRUITWORM (Heliothis zea) - VIRGINIA - Caused some damage to late tomatoes on Eastern Shore. (Hofmaster). ARKANSAS - Pest of okra during past weeks on University of Arkansas Farm near Fayetteville. (Ark. Ins. Sur.). COLORADO - Adults and eggs on or around tomatoes in Prowers, Bent, Otero, Crowley and Pueblo Counties remain at noneconomic levels. (Schweissing).

FLEA BEETLES - MARYLAND - Epitrix fuscula and E. hirtipennis infested large garden planting of eggplant at Carmichael, Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Phyllotreta cruciferae present to common on some cabbage in Kent County. (Burbutis, Evans). LOUISIANA - Populations of Systema blanda ranging up to 50 per 100 sweeps in some sweetpotato fields of Acadia Parish. (Newsom).

CUCUMBER BEETLES - LOUISIANA - Populations of Diabrotica balteata, D. undecimpunctata howardi and Acalymma vittata heavy on cucumbers and beans in East Baton Rouge Parish. In experimental planting of lima beans, populations per 100 sweeps as follows: D. balteata - 198, D. undecimpunctata howardi - 2, and A. vittata - 16. On cucumbers, A. vittata occurred at 100 per 100 sweeps and D. balteata at 56 per 100 sweeps. (Newsom).

TOBACCO INSECTS

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - Light to medium on tobacco in St. Marys County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Moderate to heavy on tobacco in St. Marys County. (U. Md., Ent. Dept.).

HORNWORMS (*Protoparce* spp.) - MARYLAND - Generally light in 17 tobacco fields checked in St. Marys County. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (*Heliothis virescens*) - MARYLAND - Generally light on tobacco in St. Marys County. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Squares becoming difficult to find; all punctured in fields checked in Bladen, Duplin, Columbus and Robeson Counties. (Bowers, Lee, Fedoronko, Hayes, Read, Lott). SOUTH CAROLINA - Infestations continue low in upper Piedmont counties where controls still being carried out. Counts of little use now in Coastal Plain counties due to decreasing numbers of squares. Weevils continue to attack bolls less than 3-weeks old in unprotected fields. (Cott. Ltr., Aug. 26). GEORGIA - Weevils abundant on small bolls. Squares scarce. (Johnson). ALABAMA - Infestations in most south and central area counties now at high level, but harvesting well underway in most areas. Controls limited to irrigated cotton or other isolated young and vigorously growing fields. Infestation in northern area increasing slowly, but not to damaging intensity except in few locations. Little if any controls applied in these areas except for other insects. (McQueen et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Attala, Choctaw, Copiah, Lowndes and Monroe Counties; controls applied. In some fields, population threatening to small bolls. (Ouzts). LOUISIANA - Populations increasing generally, but still remain relatively light. (Newsom). OKLAHOMA - Populations generally noneconomic; localized areas with higher populations. Infestation counts 5-23 percent (mostly 5-9 percent) in southwest, 0.5-2 in northwest, 3-14 in south central, 5-50 in southeast and less than 1 percent in experimental plots in Chickasha area. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - NORTH CAROLINA - Terminal counts as follows: Bladen County, 12 percent (Bowers); Robeson County, 16 percent (Hayes); Robeson County, 4 percent and 2 percent (Lott). Small bolls 12 percent damaged in Bladen County field and 20 percent in Duplin County field. (Lee, Fedoronko). GEORGIA - Egg counts made in 21 cotton fields in middle and southern areas; counts ranged 4-19 and averaged 10 per 100 terminals. Larvae ranged 2-15 and averaged 5 per 100 terminals in same areas. (Johnson). ALABAMA - Infestations continue at high level, with moths in flight throughout cotton fields and other crops. Controls necessary in many northern area fields. (McQueen et al.). MISSISSIPPI - Light to heavy infestations in delta area, and in Attala, Choctaw, Copiah, Monroe and Prentiss Counties; controls applied. Localized fields in south delta area with 90 percent *H. virescens*; control failures with materials used. Egg deposition by *Heliothis* spp. heavy over delta on late and growing cotton. (Ouzts). LOUISIANA - Egg deposition continues unusually heavy and moths abundant, especially in fields of young and succulent cotton. Control generally adequate. (Newsom). OKLAHOMA - Populations continue moderate to heavy in most cotton-growing areas; infestation counts 8-16 percent in southwest, 5-28 in south central, 3-30 in southeast, 0.5-1 in northwest and 4 percent in west central. Infestations ranging 20-80 percent (average 42.5 percent) observed in untreated experimental plots in Grady County, with egg laying continuing at high level. (Okla. Coop. Sur.).

BOLLWORM (Heliothis zea) - CALIFORNIA - Some Tulare County fields being treated. (George, Aug. 23). Becoming a more common problem in Kern County. Reports indicate some populations as high as 10-12 small larvae per 100 terminals; however, situation not observed. (Leigh, Aug. 25). NEVADA - Increasing, with few fields being treated in Pahrump Valley, Nye County, but infestations below level of last 2 years. (Slater). ARIZONA - Populations continue heavy in all cotton-producing areas, particularly large increases found in Graham and areas of Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - All stages continue present; eggs and larvae of different instars in Dona Ana County cotton. (N. M. Coop. Rpt.). ARKANSAS - Very heavy moth activity occurred for 2 weeks in southeast and one week in northeast. Activity increased past week in southwest and northwest. (Ark. Ins. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues to cause considerable damage to cotton in Pinal, Graham and Maricopa Counties; larvae 10-25 per 100 plants. (Ariz. Coop. Sur.). NEW MEXICO - Young larvae present in most cotton checked in Dona Ana County, but predators and polyhedrosis virus appear to be preventing larvae from becoming full grown. (N. M. Coop. Rpt.). OKLAHOMA - Counts averaging less than 0.5 per plant noted in Grady County. Light counts also reported from Harmon, Tillman, Choctaw and Bryan Counties. (Okla. Coop. Sur.). MISSISSIPPI - Activity decreased on cotton. (Ouzts). GEORGIA - Light on cotton in middle and southern areas. (Johnson). SOUTH CAROLINA - Appeared in Kershaw and York Counties on cotton. (Cott. Ltr., Aug. 26).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Continues serious problem on cotton in Yuma, Pinal and Maricopa Counties; heavy damage occurred on stub cotton in Pinal County. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - LOUISIANA - Heavy infestations developed in few cotton fields in southwest where insecticide applications discontinued. (Newsom). OKLAHOMA - Moderate to heavy infestations continue to be reported from Marshall and Canadian Counties. None observed in experimental plots in Grady County and only light populations reported in Bryan and Greer Counties. (Okla. Coop. Sur.). NEW MEXICO - Larvae 15-40 per 100 sweeps in heavier infested cotton in Roosevelt County. (N. M. Coop. Rpt.).

BEE T ARMYWORM (Spodoptera exigua) - ALABAMA - Few larvae noted on cotton in Macon County. Pest now reported from Autauga, Elmore, Baldwin and Macon Counties, but not serious to August 30. (McQueen). ARIZONA - Continues to cause heavy damage in some areas of Pinal and Maricopa Counties; 55 per 100 plants in most areas. (Ariz. Coop. Sur.).

AN ARMYWORM (Prodenia sp.) - ARIZONA - Larvae migrating from alfalfa to cotton and causing considerable damage in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Inspection of 400 green cotton bolls on Pace farm, Graham County, revealed 2 bolls with exit holes and one boll with a larva. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Causing light to moderate damage to cotton in Santa Cruz Valley and Stanfield areas of Pinal County, and in Mesa-Chandler area of Maricopa County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - High counts found in many Tulare County cotton fields. Some growers may want to extend period of lygus control because of a late crop or poor boll set earlier in season. (George, Aug. 23). Few Kern County fields showing counts as high as 12-20 adults per 50 sweeps. Nymphs not abundant. High adult counts also encountered in few west Fresno County area. In Dos Palos area of Merced County, some fields show evidence of severe damage. (Leigh, Aug. 25). NEVADA - Increasing in some fields in Pahrump Valley, Nye County, but infestations below previous years and less

controls being applied. (Slater). Counts 0-2 per sweep in Moapa Valley, Clark County. (Bechtel, Cooney). ARIZONA - Populations constant, but still causing damage to many top squares. Damaged squares in Pinal and Maricopa Counties 25-28 per 100 checked. (Ariz. Coop. Sur.).

APHIDS - CALIFORNIA - Honeydew evident on individual plants or in small areas in number of Tulare County cotton fields. Situation should be watched closely as bolls begin to open. (George, Aug. 23). ARIZONA - Aphis gossypii increasing in Maricopa, Yuma and Graham Counties on cotton; 1,000-1,500 per 100 sweeps in areas of Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Spotted, light to relatively heavy infestations of A. gossypii noted on cotton in several fields in Dona Ana County. (N. M. Coop. Rpt.). LOUISIANA - Damaging infestations of A. gossypii developing in some fields of cotton throughout State following applications of certain insecticide mixtures. (Newsom).

LEAFHOPPERS (Empoasca spp.) - CALIFORNIA - Damage to cotton evident in foothill areas of Elderwood and Woodlake, Tulare County. (George, Aug. 23). NEVADA - Heavy infestation in 2 fields in Moapa Valley, Clark County. (Bechtel).

STINK BUGS - CALIFORNIA - Counts range 1-2 per 50 sweeps on cotton in Five Points area of Fresno County. (Leigh, Aug. 25). ARIZONA - Damaging populations of Euschistus impictiventris appearing in Yuma and Graham Counties; averaged 4 per 100 sweeps in Graham County. (Ariz. Coop. Sur.).

SPIDER MITES - NORTH CAROLINA - Tetranychus spp. completely defoliated many cotton fields in Pembroke-Lumberton area of Robeson County. (Bartley). SOUTH CAROLINA - Building up in many Piedmont Counties. Heavy infestations reported few weeks ago on cotton evidently under control in other parts of State. (Cott. Ltr., Aug. 26). GEORGIA - Light to moderate on cotton in middle and southern areas. (Johnson). ALABAMA - Continue to cause considerable damage to cotton in Winston, De Kalb and few other northern area counties. Controls applied in isolated areas. (McQueen). MISSISSIPPI - Light to heavy, isolated infestations on cotton in delta area, and in Prentiss County; controls applied. (Ouzts). LOUISIANA - Tetranychus spp. becoming a problem in few fields of cotton, but of relatively minor importance. (Newsom). OKLAHOMA - Reported heavy in some fields in Granite area of Greer County. (Okla. Coop. Sur.). NEVADA - Increasing slightly in several fields of cotton in Pahrump Valley, Nye County. (Slater). CALIFORNIA - Continue to cause damage in many Tulare County cotton fields. Some growers allowed populations to increase extensively before treating, resulting in erratic control. (George, Aug. 23). In Dos Palos area, Merced County, Tetranychus atlanticus severe in many cotton fields. (Leigh, Aug. 25).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - OKLAHOMA - Heavy populations of Dendroctonus terebrans and Ips spp. reported killing pines in Pushmataha County, southeast. (Okla. Coop. Sur.). LOUISIANA - Populations of Ips avulsus, I. grandicollis and Dendroctonus terebrans high in stumps and slash from logging operations in East Feliciana, St. Helena, Livingston and Ascension Parishes. Tree mortality greatly reduced since adequate moisture has become available. (Newsom). MISSISSIPPI - Ips spp. light in pine in Attala County; controls applied. (Ouzts).

SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - Egg mass survey indicates populations remain at high level in much of area north of Nett Lake in St. Louis and Koochiching Counties. (Minn. Ins. Rpt.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - VIRGINIA - Heavy on ornamental pines at a location in Virginia Beach. (Rowell).

A PHYCITID MOTH (Dioryctria abietella) - LOUISIANA - Infestations common on pine in East Baton Rouge and St. Tammany Parishes. (Newsom).

CONIFER SAWFLIES - MINNESOTA - Second-generation larvae of Diprion similis present in all stages; middle stage predominant. Feeding damage evident in several areas; reports from Brainerd area, Crow Wing County, indicate heavy feeding, especially on large pines. (Minn. Ins. Rpt.). NORTH CAROLINA - Larvae of Neodiprion lecontei damaging small pine trees in a location at Manteo, Dare County. (Spae, Mount).

FALL WEBWORM (Hyphantria cunea) - RHODE ISLAND - Infestations widespread and scattered, but not economic. (Mathewson, King, Cartier). VIRGINIA - Heavy on several species of shade trees in Carroll County. (Helland). LOUISIANA - Populations of orange-headed form on pecan and persimmon relatively light in southeast. (Newsom). MISSOURI - Heavy infestations continue to be reported from areas throughout State. Larvae in extreme southern areas nearly full grown. (Munson, Thomas, Wood). ILLINOIS - Heavy in localized spots in east and northeast districts; however, overall population appears lighter than in 1962. (Ill. Ins. Rpt.). WISCONSIN - Larvae observed in last stage in southern counties August 27-28. Webs conspicuous and more common in areas of Green, Rock and Sauk Counties than in previous few weeks. (Wis. Ins. Sur.). OHIO - Moderate to heavy in northeast area; populations heaviest in Wayne, Stark, Summit, Portage and Columbiana Counties. Single 18-foot wild cherry tree in Stark County contained 18 webs; most webs contained 100-200 late-stage larvae. Hosts included wild cherry, walnut, willow, sycamore, apple, flowering crab apple and hickory. (Lyon).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - RHODE ISLAND - Scattered, light infestations in southern part of State not a problem. Feeding appears to have decreased. Larvae bearing parasite eggs common. (Mathewson).

CATALPA SPHINX (Ceratomia catalpae) - ALABAMA - Appearing more generally on catalpa trees than at any time this year in central part of State. (Parrish et al.).

BOXELDER LEAF FOLLER (Gracilaria negundella) - NEVADA - Medium to heavy on boxelder in Elko, Elko County. (Earnist).

NOTODONTID MOTHS (Datana spp.) - ILLINOIS - D. integerrima and D. ministra appear much lighter than during past several years. (Ill. Ins. Rpt.).

A PSYCHID MOTH (Apterona crenulella) - UTAH - Although common in northern area canyons, mountains and about some homes, has been less damaging generally than usual. (Knowlton).

GYPSY MOTH (Porthetria dispar) - Aerial surveys completed in early July disclosed more extensive areas of defoliation than in 1962 in VERMONT and NEW HAMPSHIRE and less defoliation in MAINE. In Vermont, most defoliation occurred in Bennington and Rutland Counties. Smaller areas also observed in cities of Burlington and Rutland and at 3 locations along Connecticut River in vicinity of Brattleboro and Bellows Falls. Defoliation in Vermont totaled 12,020 acres. In New Hampshire, 8,345 acres of defoliation recorded principally in southwest and northern Lake Winnepesaukee sections. Defoliation in Maine less extensive and less severe; in western sections of State only 2 areas of defoliation were observed, both in southern end of Oxford County (south and east of Fryerburg). Only other area of defoliation in Maine observed in Hancock County northwest of Cherryfield. Total of 1,970 acres of defoliation recorded in Maine. (PPC, East. Reg., July Rpt.). MICHIGAN - No moths found. Most traps removed. (Turner).

BROWN-TAIL MOTH (Nygmia phaeorrhoea) - First adult trapped on July 1 at Loudon, NEW HAMPSHIRE; collections also made at Hooksett and Weare. Traps placed at sites where webs found during past winter and spring in MASSACHUSETTS on Deer

Island and Plum Island. One location on Plum Island yielded 7 adults; other traps negative. (PPC, East. Reg., July Rpt.).

LEAF MINERS - COLORADO - Unknown coleopterous species causing unsightly foliage on cottonwood trees in Arapahoe County. (Hantsbarger). Adults of unknown lepidopterous species numerous on and around privet hedges in Larimer County. (Simpson).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ALABAMA - Heavy feeding and pupation continue on previously affected elms in central counties. (McQueen). CALIFORNIA - Infesting elms in Altaville area, Calaveras County. (Cal. Coop. Rpt.).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ILLINOIS - Collected from black locust in Lake and McHenry Counties on August 28, 1963. These are new county records. (Ill. Ins. Rpt.).

A TWIG GIRDLER (Agrilus arcuatus) - OHIO - Uniform "flagging" over several white oaks noted in Fairfield County, central area. Larvae collected from damaged branches. (Walker).

LEAFHOPPERS - OKLAHOMA - Large populations built up in lawns and grassy areas; also causing considerable discoloration of elm leaves in Stillwater area, Payne County. (Okla. Coop. Sur.).

A CICADA - NORTH CAROLINA - Egg laying damaged many shade trees in Lumberton, Robeson County. (Bartley).

PLUM WEB-SPINNING SAWFLY (Neurotoma inconspicua) - VIRGINIA - Occasional nests noted on wild plum and cherry in Montgomery County. (Kulman, Aug. 19).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Larvae seriously injured ornamental arborvitae and junipers at several locations in Prince Georges and Queen Annes Counties; pupating at Frederick, Frederick County. (U. Md., Ent. Dept.). ILLINOIS - Numbers appear much lighter than during past several years. (Ill. Ins. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - ILLINOIS - Continues to cause light damage to honeylocust trees in Champaign area. (Ill. Ins. Rpt.). MARYLAND - Infesting honeylocust at Frederick, Frederick County. (U. Md., Ent. Dept.).

DOGWOOD TWIG BORER (Oberea tripunctata) - ALABAMA - Attacking ornamental dogwoods in Choctaw County. (Sexton).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - MICHIGAN - Adults common in southern areas on flowers and weeds. (Janes).

COCCIDS - MARYLAND - Asterolecanium puteanum damaging holly at Half Pone Point, St. Marys County. Diaspis caruelli infesting juniper at Frederick, Frederick County. (U. Md., Ent. Dept.). VIRGINIA - Pseudaulacaspis pentagona infested Japanese holly at a location in Battery Park, Isle of Wight County, August 16. (Amos, Grizzard). Chrysomphalus tenebricosus infested boxelder at a location in Chesapeake (Amos), and Unaspis euonymi heavily infested euonymus at a location in Lynchburg, Campbell County (Rowell). OHIO - Aspidiotus liquidambaris light on sweetgum near Canton, Stark County, northeast. (Walker). Lepidosaphes ulmi infesting ash twigs in Parma, Cuyahoga County, northeast. (Holdsworth). LOUISIANA - Damaging populations of Pseudaonidia praenoniae on camellia occurring in East Baton Rouge, Washington and Tangipahoa Parishes. (Newsom). UTAH - Lepidosaphes ulmi heavy on many willows, poplars and lilacs in Salt Lake and Cache Counties. (Knowlton).

Coccids in Florida - Saissetia oleae infested Duranta repens and Achras zapota at Pahokee, Palm Beach County. (Smith, Aug. 16). Ischnaspis longirostris infested Ficus sp. at Pahokee (Smith, Aug. 16), and Phoenix canariensis at Miami, Dade County (Knowles, McLean, Aug. 12). Diaspis boisduvalii infested Cattleya sp. at Ft. Myers, Lee County. (Walsh, Shirah, Aug. 16). Pseudoanidia duplex infested Citrus paradisi and Ligustrum lucidum (Aug. 14) and Citrus sinensis (Aug. 16) at Orange City, and Camellia spp. at Lake Helen (Aug. 13), Volusia County. (Roberts). Parlatoria pergandii infested C. sinensis at Orange City. (Roberts, Aug. 14). Pseudococcus citri infested Sanchezia sp. at Pahokee. (Smith, Aug. 16). Chrysomphalus dictyospermi infested Podocarpus macrophylla var. maki at Deland, Volusia County. (Roberts, Aug. 15). Chrysomphalus aonidium infested Melaleuca leucadendra at Pahokee. (Smith, Aug. 16). Aspidiotus lataniae infested Ficus carica and Pseudaulacaspis major infested Flacourtia sp. at Grant, Brevard County. (Levan, Aug. 15). Phenacoccus gossypii infested Coleus sp. at Otter Creek, Levy County. (Adkins, Aug. 14). Saissetia nigra infested Duranta repens at Pahokee. (Smith, Aug. 16). Parlatoria proteus infested Cattleya sp. at Tampa, Hillsborough County (Simmons, Aug. 13), and Orchis sp. at Ft. Myers (Walsh, Aug. 13). Asterolecanium pustulans infested Murraya sp. and Carissa sp. at Pahokee (Smith, Aug. 16), and Ficus carica at Grant (Levan, Aug. 15). Saissetia hemisphaerica and Coccus hesperidum infested Sanchezia sp. at Pahokee. (Smith, Aug. 16).

CUBAN-LAUREL THRIPS (Gynaikothrips ficorum) - FLORIDA - Found infesting Ficus retusa at Bradenton, Manatee County, August 23. (Bickner).

PEAR-SLUG (Caliroa cerasi) - COLORADO - Caused severe foliage damage to ornamental cherry trees in Denver. (Hantsbarger).

SPIDER MITES - UTAH - Unspecified species discolored many Pfitzer junipers on university campus at Logan, and about homes in Salt Lake City. (Knowlton). KANSAS - Tetranychus sp. damaging Boston-ivy in Haskell County, southwest. (Gates). MICHIGAN - Tetranychus telarius damaging shrubs in dry sites and those showing winter injury. (Carpenter, Mullett, Janes). VIRGINIA - Unspecified species caused heavy damage to ornamentals on Eastern Shore. (Hofmaster).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - ARIZONA - Several species a serious problem to homeowners and livestock in Maricopa, Pinal and Pima Counties. Heavy rains reduced effectiveness of chemical controls. (Ariz. Coop. Sur.). NEW MEXICO - Heavy populations, mostly Aedes vexans, built up following recent rains in McKinley, Bernalillo, Valencia and Dona Ana Counties. (N. M. Coop. Rpt.). UTAH - Annoying campers and fishermen along Logan River in Cache County, and at Wellington, Carbon County. (Knowlton). MINNESOTA - During week August 18-24, total of 3,955 female mosquitoes collected, of which 3,500 were Aedes vexans; balance consisted of 5 species of Culex; 89 Uranotaenia sapphirina also taken. In 38 evening biting collections, 491 specimens obtained; 411 were Aedes vexans and 64 Mansonia perturbans. All M. perturbans taken at one location in Lino Lakes Township, Anoka County. In 330 daytime biting collections, 2,880 adults obtained; of these, 2,686 were Aedes vexans, 91 Aedes trivittatus and 32 Aedes triseriatus. A. triseriatus normally breeds in tree holes, but recently found with increasing frequency in water accumulating in old tires and car bodies in auto junkyards. (Minn. Ins. Rpt.).

TABANIDS - RHODE ISLAND - Chrysops spp. continue to bite heavily in wooded areas of State. (Mathewson, Hannah). OKLAHOMA - Tabanus spp. light on cattle in Marshall County; averaged 4 per head in Pushmataha County. (Okla. Coop. Sur.). LOUISIANA - Tabanus spp. numbers unusually light over most of State. (Newsom). MISSISSIPPI - Tabanus spp. light on livestock in delta counties; controls applied. (Ouzts).

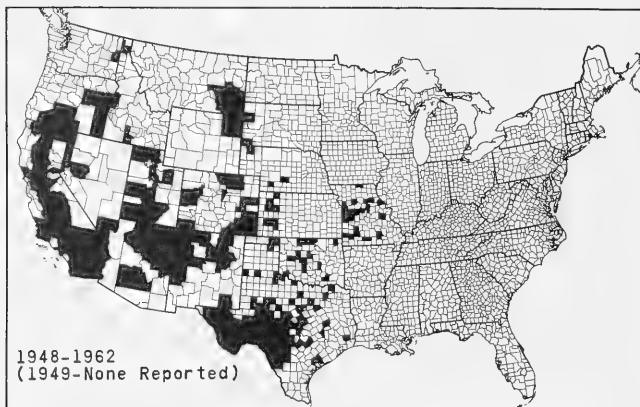
THE INCIDENCE OF BLUETONGUE¹ AS REPORTED IN THE UNITED STATES DURING CALENDAR YEAR 1962

| State | No. of Counties | No. of Infected Flocks | Seasonal Occurrence | Approximate Morbidity | Approximate Mortality | Age of Infected Sheep | No. Flocks Laboratory Confirmed |
|--------------|-----------------|------------------------|---------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| Arizona | 2 | 2 | May-September | 17% | 50% | All Ages | None |
| California | 4 | 4 | September-October | 60% | 1% | All Ages | None |
| Idaho | 3 | 4 | September-October | 8% | 1% | All Ages | 4 |
| Montana | 6 | 71 | August-September | 4% | 15% | All Ages | 7 |
| Nebraska | 1 | 1 | July | 38% | 4% | Lambs | 1 |
| Oregon | 1 | 2 | September | 15% | 2% | Lambs | 2 |
| South Dakota | 2 | 4 | June-September | 11% | 4% | All Ages | 2 |
| Texas | 8 | 34 | February-November | 6% | 2% | Lambs | None |
| Utah | 2 | 4 | September-December | .03% | .02% | Lambs | 2 |
| Wyoming | 3 | 6 | August-October | 1% | .34% | All Ages | 5 |
| TOTAL | 32 | 132 | | | | | 23 |

¹/ Bluetongue, a seasonal disease of sheep, is caused by a virus. A *Culicoides* gnat, *Culicoides variipennis*, is a proven vector of the disease, but other species of biting flies may also be involved. The disease is native to South Africa, but has spread to the United States and countries in the Mediterranean Sea area. The name, bluetongue, describes the characteristic discoloring of the tongue that occurs in some severely infected sheep. Animals with mild forms of bluetongue seldom develop this symptom. An infected animal may become weak and emaciated. It may have a swollen muzzle, inflamed, raw areas in the mouth and high fever. Yearlings are often affected; however, sheep of all ages and all breeds are susceptible. Bluetongue was first found in the United States in 1948. Prior to last year, it was known to occur in Arizona, California, Colorado, Idaho, Kansas, Missouri, Nebraska, Nevada, New Mexico, Oklahoma, Oregon, Texas and Utah.

During the calendar year 1962, bluetongue was reported for the first time in the tri-State areas of Montana, Wyoming and South Dakota. The areas of the three States involved were generally contiguous and surveys in the areas involved indicated that sheep of all ages were affected. However, both morbidity and mortality were low.

COUNTIES IN WHICH BLUETONGUE WAS REPORTED



HORN FLY (*Haematobia irritans*) - MISSISSIPPI - Heavy on livestock in delta counties; controls applied. (Ouzts). LOUISIANA - Numerous reports from dairymen in Tangipahoa Parish concerning failure to obtain control with a certain chlorinated hydrocarbon. (Newsom). OKLAHOMA - Counts of 300 per head noted on animals in Marshall County (south central), 800 per head in Pushmataha County (southeast), and 300-500 per head in Bryan County (south central). Populations per head of 400 on steers and 300 on cows observed in Payne County (north central). (Okla. Coop. Sur.). OHIO - Ranged 60-70 per dairy heifer at Vickery, Sandusky County, north central. This was major pest observed on 13 animals. (Lyon). MARYLAND - Light, 0-8 per head, on dairy cattle checked in Frederick and Howard Counties. (U. Md., Ent. Dept.).

FACE FLY (*Musca autumnalis*) - WISCONSIN - Populations continue to increase; reported as serious problem in marsh area of Portage County and in portions of Sauk, Juneau and Adams Counties. Blind cattle reported in Pepin County; many cattle in Walworth County with pinkeye. (Wis. Ins. Sur.). MICHIGAN - Adults numerous and annoying on livestock and in buildings in Sanilac County. (Sowerby). OHIO - Averaged 8 per dairy heifer at Vickery, Sandusky County, north central. (Lyon). MARYLAND - Ranged 6-25 per head on dairy cattle checked in Frederick and Howard Counties. (U. Md., Ent. Dept.).

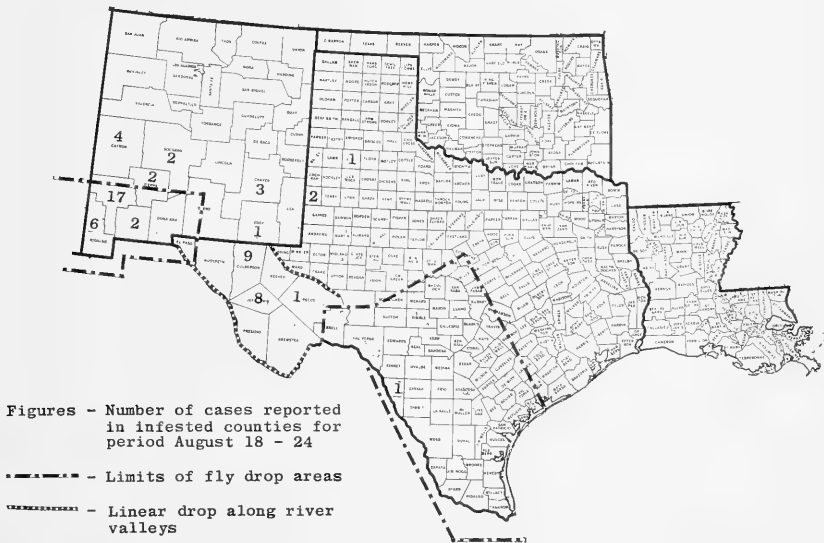
HOUSE FLY (*Musca domestica*) - MICHIGAN - Became annoying and numerous on livestock and in buildings in Sanilac County. (Sowerby). WISCONSIN - Has shown marked increase in numbers in many areas. Reported particularly noticeable in Columbia, Sawyer and Polk Counties. (Wis. Ins. Sur.).

FLIES - NEW MEXICO - Very abundant and annoying around homes, stores and livestock yards in McKinley and Bernalillo Counties. (N. M. Coop. Rpt.).

BLOODSUCKING CONENOSE (*Triatoma sanguisuga*) - OHIO - Specimen noted at Pataskala, Licking County, central area. (Holdsworth).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period August 18 - 24, a total of 21 infestations was reported from TEXAS and 37 from NEW MEXICO. Specimens were reported from 5 counties in Texas and 8 counties in New Mexico. Screw-worm was reported for the first time this year from Hale and Yoakum Counties, Texas. A total of 132,849,450 sterile flies was released during the period August 18 - 24. (Anim. Dis. Erad. Div.).



STABLE FLY (*Stomoxys calcitrans*) - UTAH - Numbers and annoyance about normal in localities where observations made. (Knowlton). MICHIGAN - Recently became numerous and annoying to livestock and about buildings in Sanilac County. (Sowerby). OKLAHOMA - Populations of 25 per head noted on cattle in Pushmataha County (southeast); averaged 2 per head on dairy animals in Stillwater area, Payne County (north central). (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta counties; controls applied. (Ouzts).

TICKS - OKLAHOMA - *Dermacentor albipictus* active in Pushmataha County (southeast); this is first report of season. Moderate to heavy larval populations of *Amblyomma americanum* reported in Le Flore and Pushmataha Counties, southeast. (Okla. Coop. Sur.).

VESPID WASPS - RHODE ISLAND - *Vespa* spp. and *Polistes* spp. constitute major insect problem statewide. One hospital in Providence County reported 15 persons treated in accident room in one day. (Mathewson, King, Cartier, Hannah).

HOUSEHOLD AND STRUCTURAL INSECTS

EUROPEAN EARWIG (*Forficula auricularia*) - MICHIGAN - Male collected August 1, 1963, in home in Lansing, Ingham County. Rather sizable infestation causing annoyance to housewife. Det. by A. B. Gurney. This is a new State record. (Guyer).

CRICKETS - OHIO - Undetermined, small species invading motels and other dwellings in numbers at Columbus, Franklin County, central area. (Lyon). ILLINOIS - Nemobius fasciatus becoming abundant at lights around motels, filling stations and homes in many parts of State. (Ill. Ins. Rpt.). MICHIGAN - Unspecified species invading homes in St. Joseph County. (Rothney). UTAH - Unspecified species a problem about some motels at St. George, Washington County, this summer. (Knowlton).

FLEAS (Ctenocephalides spp.) - RHODE ISLAND - Peak of seasonal complaints apparently subsiding. (Mathewson, Cartier). DELAWARE - Annoying in many homes in an area of New Castle County. (Burbutis, Evans). CALIFORNIA - Heavy yard infestation of C. felis noted in Ukiah, Mendocino County. (Cal. Coop. Rpt.).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - OHIO - Adults entering homes at Canfield, Mahoning County, northeast. (Phillips, Holdsworth).

ANTS - WISCONSIN - Various species continue a problem by flying in and around houses. A particular problem in Sawyer and Eau Claire Counties. (Wis. Ins. Sur.). GEORGIA - Home infestations of Formica fusca in Gwinnett County moderate. (Vanderford).

STORED-PRODUCT INSECTS

COWPEA WEEVIL (Callosobruchus maculatus) - FLORIDA - Infested stored beans at Sanford, Seminole County. (Rueff, Aug. 18).

LARDER BEETLE (Dermestes lardarius) - OHIO - Larvae observed in mink boxes on mink ranch in Wayne County, northeast. (Davidson, Lyon).

POTATO TUBERWORM (Gnorimoschema operculella) - VIRGINIA - Continues a problem in stored potatoes on Eastern Shore. None have been observed in foliage of fall potatoes in area so far this season. (Hofmaster).

INDIAN-MEAL MOTH (Plodia interpunctella) - VIRGINIA - Severe in a home and poultry house on a Lancaster County farm. (Rowell, McSwain).

MEAL MOTH (Pyralis farinalis) - OHIO - Light to moderate adult populations observed at mink ranch in Wayne County, northeast. (Davidson, Lyon).

BENEFICIAL INSECTS

A PREDACEOUS STINK BUG (Brochymena quadripustulata) - OHIO - Eight specimens collected on osage-orange tree in Medina County, northeast. (Triplehorn, Lyon).

A PARASITIC BRACONID (Apanteles congregatus) - MARYLAND - Heavily parasitized several Protoparce spp. larvae infesting staked tomatoes at Carmichael, Queen Annes County. (U. Md., Ent. Dept.).

ALKALI BEE (Nomia melanderi) - UTAH - Activity about ended in Delta and Fillmore areas, Millard County. (Knowlton).

A SCOLIID WASP (Scolia dubia) - NORTH CAROLINA - Flying about lawns in fairly large numbers in a Montgomery County area. Det. by A. M. Garris. (Mount).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Adults continue active in Battle Creek area; approximately 12 per day being taken in 4 traps used to determine population trend. Apparently 1963 infestation roughly delimited on north, south and west sides, but not on east side. On east side, beetles currently being taken in practically all traps. In Kalamazoo County, 5 of 200 traps yielded positive catches; one in Climax, 4 about one mile east of Climax. In other areas, beetle finds still low; none taken in Niles, Grand Rapids and Lansing; one beetle (third of season) taken in Flint. In Ypsilanti area, 2 new finds made; in rural Monroe County 3; and in Metropolitan Detroit 12. (Godlewski, Turner). KENTUCKY - Collected for the first time in Carter and Simpson Counties. (PPC, Cent. Reg., July Rpt.). RHODE ISLAND - Populations dwindling statewide. (Mathewson, Cartier). NEW JERSEY - Adults still present in some areas. Generally, infestations light this season compared with other years. (Ins.-Dis. Newsltr., Aug. 27).

EUROPEAN CHAFER (Amphimallon majalis) - Adult trapped for first time on grounds of hospital in Secaucus, Hudson County, NEW JERSEY. This location approximately 2.75 miles northwest of previously infested area. First collections made in NEW YORK at Plattsburgh, Clinton County, and at Batavia, Genesee County. Extension of previously known infested area found in Cayuga County. (PPC, East. Reg., July Rpt.).

A GROUND BEETLE (Harpalus pennsylvanicus) - OHIO - Adult collections in black-light traps very heavy at Vickery and Hoytville, August 27. (Triplehorn, Lyon).

DRIED-FRUIT BEETLE (Carpophilus hemipterus) - CALIFORNIA - Adults heavy in cull peach fruit in Live Oak, Sutter County. (Cal. Coop. Rpt.).

NOCTUID MOTHS - MICHIGAN - Adults of Heliothis zea, H. virescens, Trichoplusia ni, Prodenia ornithogalli and Alabama argillacea expected to migrate into State in increasing numbers in September when favorable weather occurs. (Newman).

HICKORY HORNED DEVIL (Citheronia regalis) - ALABAMA - Few full-grown larvae 4 inches long noted in Franklin County. (Ponder).

CICADA KILLER (Sphecius speciosus) - MARYLAND - Active in several areas of State. (U. Md., Ent. Dept.).

A MARCH FLY (Philia orbata) - CALIFORNIA - Adults heavy in sod and soil in San Luis Rey, San Diego County. (Cal. Coop. Rpt.).

CORRECTIONS

CEIR 13(33):938 (DETECTION) - Second line should read: "... (Eleodes suturalis) in California (p. 966)."

CEIR 13(33):971 - HAWAIIAN INSECT NOTES - Last line should read: "This is the first record of the family Aradidae in Hawaii. (D. E. Hardy)."

CEIR 13(35):1010 - A YELLOW-STRIPED ARMYWORM (Prodenia sp.) - Second line should read: "... thousand acres of seed and forage alfalfa ..."

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on June 30, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) 5 times in baggage; one time each at Miami, Florida; New Orleans, Louisiana; and Brownsville, Texas; and 2 times at Nogales, Arizona.

MEXICAN FRUIT FLY (Anastrepha ludens (Lw.)) 22 times; 19 times in baggage, 2 times in cargoes of citrus seed and 1 time in stores; 7 times at Hidalgo, 6 times at Roma, 5 times at El Paso, 2 times at Brownsville and 1 time at Houston, all in Texas; and 1 time at Calexico, California.

A SPIDER MITE (Bryobia eharai Pritchard and Keifer) (a species of potential importance in greenhouses) on Chrysanthemum morifolium flowers in baggage at Honolulu, Hawaii.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 10 times; 9 times in baggage and 1 time in mail; 2 times at New York International Airport, New York; 1 time each at Houston, Texas, and Miami, Florida; and 6 times at Honolulu, Hawaii.

ASIATIC RICE BORER (Chilo suppressalis (Wlk.)) in cargo at San Francisco, California. .

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) twice in baggage at Honolulu, Hawaii, and once in stores at San Francisco, California. Dacus sp. (could be D. dorsalis) also in baggage at Honolulu.

SPINY BOLLWORM (Earias insulana Boisdv.) (widely distributed in southern Asia, Africa and Mediterranean area) and Earias fabia Stoll (southern Asia); both these important cotton pests in baggage at New York International Airport, New York.

A WEEVIL (Epicaerus sp., possibly E. cognatus Sharp) 1 time each in baggage and stores at Brownsville, Texas.

A DRYWOOD TERMITE (Incisitermes repandus (Hill)) (an important species in Fiji) in log cargo at Honolulu, Hawaii.

COCKCHAFER (Melolontha melolontha (L.)) in plane quarters at Chicago, Illinois.

WEEVILS (Premnotrypes spp., probably P. solani Pierce in one case) (South American potato weevil genus) 6 times; 5 times in stores and once in baggage; 1 time at Baltimore, Maryland; 3 times at Mobile, Alabama; 1 time each at Miami, Florida, and at Philadelphia, Pennsylvania.

A STENOMID MOTH (Stenoma catenifer Wlsm.) (pest of avocado seed in Mexico and Central and northern South America) 3 times in baggage at Miami, Florida.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 7 times on general cargo; 3 times at Wilmington, North Carolina; 2 times at New York, New York; and 1 time each at Norfolk, Virginia, and at Boston, Massachusetts.

KHAPRA BEETLE (Trogoderma granarium Everts) (or probably that species) 18 times; 3 times in stores, 2 times in ships' holds and 13 times contaminating cargoes of tamarind seed powder, burlap, gum arabic, cotton cloth, gum tarka and guar gum; 6 times at New York, New York; 2 times at Norfolk, Virginia; 5 times at Charleston, South Carolina; 3 times at Wilmington, North Carolina; and 2 times at Seattle, Washington.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cabbage IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|---|-------------------|
| A. Pest or pest complex | <u>Cabbage aphid, cabbage looper, cabbage maggot, harlequin bug</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,860</u> |
| C. Average yield per <u>acres</u> ^a (From CRS) | Units/ | <u>250 cwt.</u> |
| D. Price ^b per unit (cwt.) ^c (From CRS) | \$/ | <u>1.10</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>2,860</u> |
| F. <u>Acres</u> ^a treated | No. | <u>2,380</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>1.</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>2.5 cwt.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>2.75</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>.25</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,200 cwt.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>6.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>14,280.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>1,320.00</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>120.00</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>15,720.00</u> |

Comment: Losses over the entire state have been light and in most fields two control applications were sufficient.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Lettuce IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|--|--------------------|
| A. Pest or pest complex | <u>Cabbage looper, beet webworm, cabbage aphid</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>7,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>198 cwt.</u> |
| D. Price ^b per unit (cwt.) ^c (From CRS) | \$/ | <u>1.50</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>7,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>7,000</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>1.0</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>1.98 cwt.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>2.97</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>.50</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>13,860 cwt.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>9.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>63,000.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>20,790.00</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>6,930.00</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>90,720.00</u> |

Comment: No high losses occurred but there was some loss in all fields due to insects
although controls were applied.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|--|---|----|---------------------|--------------------|-------------|
| ATTACKING | <u>Potatoes</u> | IN | <u>Colorado</u> | DURING | <u>1962</u> |
| | (Commodity) | | (State or District) | | (Year) |
| <p>Potato psyllid, green peach aphid, potato aphid, tuber flea beetle, black cutworm, wireworms</p> | | | | | |
| A. | Pest or pest complex | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | | No. | <u>58,000</u> | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | | Units/ | <u>205 cwt.</u> | |
| D. | Price ^b per unit (<u>cwt.</u>) ^c (From CRS) | | \$/ | <u>1.25</u> | |
| E. | <u>Acres</u> ^a needing control | | No. | <u>57,834</u> | |
| F. | <u>Acres</u> ^a treated | | No. | <u>47,369</u> | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | <u>.9</u> | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | | Units/ | <u>1.84 cwt.</u> | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | | \$/ | <u>2.30</u> | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | | \$/ | <u>negligible</u> | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | | Units | <u>19,255 cwt.</u> | |
| M. | Control cost, \$ per <u>acre</u> ^a | | \$/ | <u>6.00</u> | |
| N. | Control cost for all <u>acres</u> ^a , F x M | | \$ | <u>284,214.00</u> | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | | \$ | <u>24,069.50</u> | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | | \$ | <u>---</u> | |
| Q. | Combined control cost and losses, N + O + P | | \$ | <u>308,283.50</u> | |

Comment: In general, losses due to insects on potatoes in Colorado were light during 1962.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Tomatoes IN Colorado DURING 1962
 (Commodity) (State or District) (Year)

| | | | |
|----|--|---|-------------------|
| A. | Pest or pest complex | <u>Tomato psyllid, tomato hornworm, beet leafhopper</u> | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | <u>No.</u> | <u>3,150</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | <u>Units/</u> | <u>11.7 ton</u> |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | <u>\$/</u> | <u>22.50</u> |
| E. | <u>Acres</u> ^a needing control | <u>No.</u> | <u>3,150</u> |
| F. | <u>Acres</u> ^a treated | <u>No.</u> | <u>3,062</u> |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | <u>%</u> | <u>1.38</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | <u>Units/</u> | <u>.16 ton</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | <u>\$/</u> | <u>3.60</u> |
| K. | Loss in quality, \$ per <u>acre</u> ^a | <u>\$/</u> | <u>negligible</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | <u>Units</u> | <u>14.08 ton</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | <u>\$/</u> | <u>3.00</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | <u>\$</u> | <u>9,186.00</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | <u>\$</u> | <u>316.80</u> |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | <u>\$</u> | <u>---</u> |
| Q. | Combined control cost and losses, N + O + P | <u>\$</u> | <u>9,502.80</u> |

Comment: The area in western Colorado suffered the greatest loss due to the presence
of the beet leafhopper.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
 b. Season average price per unit as given by CRS (describe basis).
 c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Watermelon (seed) IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|--------------------------------|-------------------|
| A. Pest or pest complex | <u>Striped cucumber beetle</u> | |
| B. Number of <u> </u> acres ^a produced (From CRS) | No. | <u>2,513</u> |
| C. Average yield per <u> </u> acre ^a (From CRS) | Units/ | <u>3 cwt.</u> |
| D. Price ^b per unit (cwt.) ^c (From CRS) | \$/ | <u>55.00</u> |
| E. <u> </u> Acres ^a needing control | No. | <u>2,513</u> |
| F. <u> </u> Acres ^a treated | No. | <u>1,760</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>1.</u> |
| I. Loss in yield, units per <u> </u> acre ^a , C x H | Units/ | <u>.03 cwt.</u> |
| J. Loss in yield, \$ per <u> </u> acre ^a , D x I | \$/ | <u>1.65</u> |
| K. Loss in quality, \$ per <u> </u> acre ^a | \$/ | <u>negligible</u> |
| L. Yield loss for all <u> </u> acres ^a , (E-F) x I | Units | <u>22.5 cwt.</u> |
| M. Control cost, \$ per <u> </u> acre ^a | \$/ | <u>3.00</u> |
| N. Control cost for all <u> </u> acres ^a , F x M | \$ | <u>5,280.00</u> |
| O. Yield loss for all <u> </u> acres ^a , (E-F) x J | \$ | <u>1,242.45</u> |
| P. Quality loss for all <u> </u> acres ^a , (E-F) x K | \$ | <u>---</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>6,522.45</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cantaloup IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|--------------------------------|-------------------|
| A. Pest or pest complex | <u>Striped cucumber beetle</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,800</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>6 ton</u> |
| D. Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>40</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>2,800</u> |
| F. <u>Acres</u> ^a treated | No. | <u>1,370</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>1.</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>.06 ton</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>2.40</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>negligible</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>85.8 tons</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>4,110.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>3,432.00</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>---</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>7,530.00</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

SB
C23
C77
Exit

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPER adult survey on cropland in North Dakota showed general infestation up in light rating from 1962, but slightly down in threatening rating; however, severe damage present in scattered fields except in eastern third of State. Grasshoppers migrating in many areas of Wisconsin; mating and egg laying increased. Damage to crops also reported to have increased. CORN EARWORM infested majority of soybean fields in upper Arkansas River Valley, Arkansas. Egg deposition still heavy in cotton in area and younger soybeans may become infested. Also, heavy and defoliating soybeans in parts of Mobile County, Alabama, and ranged medium to heavy on same crop in delta counties of Mississippi. (p. 1073). NORTHERN CORN ROOTWORM adults feeding on corn silks in areas of Indiana, causing incomplete filling of ears; losses as high as 30 percent in few localized areas. TWO-SPOTTED SPIDER MITE continues a principal problem on cereal and forage crops throughout Colorado. (p. 1074). RANGE CATERPILLAR extremely heavy and denuding rangeland in Farley-Abbott area of Colfax County, New Mexico. PEA APHID building up in Maryland, and increased in many alfalfa fields where regrowth lush in Wisconsin; increases noted in alfalfa in several Arizona counties. (pp. 1075-1076). BEAN LEAF BEETLE damaging soybeans in areas of Alabama and Maryland. (p. 1076).

WOOLLY APPLE APHID caused considerable damage to terminal growth of apple trees in several orchards in San Juan County, New Mexico. (p. 1077). BLACK PECAN APHID infestations on pecans heaviest in decade in Mobile County, Alabama. (p. 1078).

In Arizona, LYGUS BUGS continue to cause considerable damage to cotton, particularly on late developing top bolls; increases of SALT-MARSH CATERPILLAR noted in Yuma and Pinal Counties, and BEET ARMYWORM increased in Pinal and Maricopa Counties. (p. 1081). BOLLWORMS continue a problem in young and late cotton throughout most of northern Alabama, and infestations have been more severe in Georgia this season than for past several years. Egg deposition of CABBAGE LOOPER continues heavy in upper Arkansas River Valley of Arkansas. (p. 1082). SPIDER MITE populations heavy in Clovis area of Fresno County, California, where problem worse than in 1962. (p. 1083).

ELM LEAF BEETLE caused heavy damage to elms in areas of Arizona and New Mexico, and continues damaging throughout Oklahoma. LOCUST BORER heavy in many stands of black locust in areas of Alabama. (p. 1084).

DETECTION

New State records were SHEEP BOT FLY in Delaware and a NONSUBTERRANEAN TERMITE (*Incisitermes minor*) in Ohio. (p. 1087). New county/parish records were WHITE-FRINGED BEETLES in Lee County, Alabama; Chattahoochee, Early, Lowndes and Warren Counties, Georgia; Leon County, Florida; Lafourche Parish, Louisiana; Calhoun County, South Carolina; and Lincoln County, Tennessee. (p. 1089). ASIATIC OAK WEEVIL reported for first time from Scioto, Pike, Lawrence, Jackson, Vinton and Ross Counties, Ohio, and IMPORTED FIRE ANT from Coffee County, Georgia. (p. 1089).

CORRECTIONS

See page 1089.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1086).

Occurrence of Periodical Cicadas in Tennessee - 1963. (map). (p. 1088).

Hawaiian Insect Notes. (p. 1093).

Spring and Early Summer Observations on the Alfalfa Weevil and Other Forage Crop Insects in Massachusetts - 1963. (p. 1095).

Estimated Losses and Production Costs Attributed to Insects and Other Arthropods Attacking Peaches, Pears, Sugar Beets and Onions in Colorado in 1962, and Alfalfa Hay and Cotton in New Mexico in 1962. (pp. 1097-1102).

Reports in this issue are for week ending September 6, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

SEPTEMBER 1963

The Weather Bureau's 30-day outlook for September calls for temperatures to average below seasonal normals over the eastern half of the country except for near to above normal along the gulf and south Atlantic coasts. Above normal averages are predicted over the western third of the Nation and near normal in unspecified areas. Rainfall is expected to exceed normal in a broad band extending from the Southern Plains through the Ohio Valley into the Northeast. Sub-normal amounts are anticipated west of the Continental Divide and along the gulf coast. In the remainder of the country, precipitation should not depart greatly from normal.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 9

At the beginning of the week, high pressure dominated the weather over the eastern third of the Nation. Skies were clear and winds were calm or light. A low pressure area, centered over central South Dakota, caused general cloudiness from the eastern slope of the Northern Rockies to Lake Michigan and southward over the Central Plains. Rain fell over much of the Dakotas, Minnesota, and Iowa. Scattered thunderstorms occurred in Kansas. Variable cloudiness prevailed from the Rocky Mountains westward to the Pacific. As the low pressure area moved eastward, it triggered a few tornadoes in southern Wisconsin and heavy thunderstorm activity from Michigan to Kansas. Hail fell from some of the thunderstorms. Cloudiness and severe weather increased eastward to New England. Sunshine predominated over the western, central, and southern portions of the country. By Saturday, the cold front associated with the low pressure area had moved to the Atlantic and storm activity was limited to some cloudiness along the northern Atlantic seaboard and a few showers farther south. Fog, which developed in the cool air mass, blanketed much of the Ohio Valley, the Lake region, the Appalachians, and parts of the Atlantic coast and New England on two or three forenoons over the weekend. In most areas, the fog dissipated by noon.

Scattered thunderstorms dumped an inch or more of rain at spots in the north-central Rockies, the west-central and southern Plains, and Florida on Saturday morning. But most of the Nation enjoyed pleasant weekend weather. Most areas (Continued on page 1081)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - UTAH - Especially numerous and damaging at Bountiful, Davis County. (Rogers, Knowlton). NEBRASKA - Approximately 7-8 *Melanoplus* sp. per square yard in field margins in Otoe County, with light damage to corn. (Roselle). NORTH DAKOTA - Adult grasshopper survey on cropland completed. General infestation up in light rating from 1962, but slightly down in threatening rating; however, severe damage present on scattered fields throughout State except in eastern third of State. Heaviest economic damage occurred in southwest; corn, alfalfa, flax and late small grains involved. In this area, few alfalfa fields with up to 90 percent defoliation observed. (Wilson). WISCONSIN - Grasshoppers, principally *Melanoplus femurrubrum*, migrating in many areas; mating and egg laying increased. Reports of damage to crops also increased, although rains rejuvenated many alfalfa fields, masking extent of injury. Reports from Juneau and Kewaunee Counties indicate considerable clipping of alfalfa flowers in fields retained for seed. More pronounced incidence of diseased grasshoppers present in areas along Mississippi River. Populations in Washington, Waukesha, Jefferson and Sheboygan Counties showed marked increase from 1962, with 15-25 per square yard present in many alfalfa fields. (Wis. Ins. Sur.). OHIO - Heaviest *M. differentialis* populations observed in Pickaway, Ross and Fayette Counties. In Ross County (central area), soybeans 35 percent defoliated and field corn 45 percent defoliated along outer rows of field. *M. differentialis* ranged 20-25 per square yard along grassy roadside ditches. (Lyon). ALABAMA - Numerous grasshoppers noted feeding on soybeans. (McQueen).

CORN EARWORM (*Heliothis zea*) - NEVADA - Larval infestations lowest in several years in corn ears in southern Washoe County. (Gardella). NEW MEXICO - Generally light to moderate on field corn in San Juan County. A problem on home-garden corn throughout State; ruined planting of sweet corn at Bloomfield, San Juan County. (N. M. Coop. Rpt.). OKLAHOMA - Continues to feed on peanuts in south central areas; larvae ranged 1-4 per plant in Bryan County. (Okla. Coop. Sur.). ARKANSAS - Infestations observed in upper Arkansas River Valley where majority of soybean fields infested; treatments applied to most infested fields. Conditions indicate peak infestation occurred week ending August 31. Egg deposition still heavy in cotton in area and younger soybeans may become infested. Infestations have occurred in Lonoke and Arkansas Counties (east central) in addition to southeast area reported previous week. Infested 140-acre field in Washington County (northwest); very few soybeans grown in area. Larvae ranged 0-89 per 30 row feet in 10 of 13 soybean fields surveyed in Lonoke County. (Ark. Ins. Sur.). MISSISSIPPI - Medium to heavy on soybeans in delta counties. (Ouzts). SOUTH CAROLINA - Larvae mostly full grown in some soybean fields in Barnwell County. Larvae numerous in soybeans in Bamberg County; many still small. (Nettles et al.). NORTH CAROLINA - Heavy in one of 8 soybean fields examined in Martin, Washington and Beaufort Counties. Larvae averaged 48 per 25 feet of row in heavily infested Washington County field. Ranged 0-5 per 25 feet of row in other fields. (Mount). MARYLAND - Eggs light on stems, leaves and pods of soybeans in Wicomico and Worcester Counties; few small larvae also present. Infestations in pods may increase, as moth flights appear to be heavy. (U. Md., Ent. Dept.). ALABAMA - Heavy and defoliating soybeans in parts of Mobile County; some control difficulty noted. No larvae found on soybeans in northern counties. (Seibels et al.). OHIO - Little or no damage to sweet corn to September 6; adult flights continue low, with egg laying underway in southern area. (Richards).

FALL ARMYWORM (*Laphygma frugiperda*) - RHODE ISLAND - Probably this species, infested silage corn in Woodville section of Hopkinton, Washington County, August 8. Damage estimated at one thousand dollars. (Mathewson). DELAWARE - Present on young corn in an area of Sussex County. (MacCreary). MARYLAND - Larvae infesting 81 percent of plants in field of late corn for silage at Frederick, Frederick County. (U. Md., Ent. Dept.). GEORGIA - Light on millet in northwest area. (Johnson). ALABAMA - Light on Sudan grass in Marion County. (McQueen). ARKANSAS - None noted in 13 soybean fields checked in Lonoke County. (Ark. Ins. Sur.). OKLAHOMA - Continues to damage small grains in panhandle areas. (Okla. Coop. Sur.). ARIZONA - Larvae ranged 20-50 per 100 sweeps in Graham County alfalfa. (Ariz. Coop. Sur.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Late corn in Otoe County approximately 25 percent infested with fourth and fifth stage larvae. (Roselle). NORTH CAROLINA - Caused some damage to corn in northeastern Duplin County. (Federonko). DELAWARE - Infestation averaged 42 percent in 4 corn fields in Kent County. (Burbutis).

CORN LEAF APHID (Rhopalosiphum maidis) - MARYLAND - Moderate to heavy infestations continue conspicuous on field corn checked in Frederick County. Declining on field corn in Wicomico County. (U. Md., Ent. Dept.). OHIO - Populations decreasing substantially on field corn tassels near Chillicothe, Ross County; however, many aphids still found on ear silks. (Lyon). WISCONSIN - Alates commonly found in most alfalfa; small colonies present in oat and rye fields in Iowa and La Crosse Counties. (Wis. Ins. Sur.). WYOMING - Small numbers present on corn plants in Fremont and Hot Springs Counties, August 30. Ranged light to medium in Carbon County corn fields September 6. (Marks). ALABAMA - Heavy on Sudan grass in Marion County. (McQueen).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MICHIGAN - Adults heavy and active on silks in a Branch County field continuously in corn. (Wiggins). INDIANA - Adults feeding on corn silks in Greene, Henry and Randolph Counties reported causing incomplete filling of ears. Losses in few localized areas reported as high as 30 percent. Adults also feeding on kernels on ear tips. (Gould, Matthew). OHIO - Light to moderate numbers noted feeding on silks of field corn in Jackson County, southern area. Adults ranged 3-5 per corn ear and 6-7 per 50 sweeps in alfalfa. (Lyon).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Survey conducted in heavily infested area of Berrien County September 3-4; no immature forms found; few adults feeding on orchardgrass, switchgrass, foxtail, corn and reed canary grass. Significant numbers found only on reed canary grass; averaged 10 adults per 100 sweeps. Hibernating adults found in wide variety of places. (Ruppel, Ring).

SAP BEETLES - MICHIGAN - Adults of unspecified species common in injured corn-stalks and damaged corn kernels in Ingham and Eaton Counties. (SeEVERS, Johnson).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Survey in Lonoke County indicated slight reduction in numbers; counts in 18 fields checked regularly averaged 4 adults and 0.5 nymph per 100 rice heads, compared with 5 adults and 1 nymph previous week. (Ark. Ins. Sur.).

HESSIAN FLY (Phytophaga destructor) - INDIANA - Field populations of Race B, capable of infesting wheat varieties Dual, Monon, Redcoat and Reed, increasing in size and virulence. Samples from 180 certified wheat fields showed an increase over 1962 of W38 resistant wheats becoming infested by this species. No infested samples collected from Knox 62, a wheat having different source of resistance than W38, which indicates this variety maintaining resistance against Race B populations of P. destructor. (Gallun, Hatchett).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Growers treating infested grain sorghum fields southeast of Clovis, Curry County. (N. M. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - NEW MEXICO - Damage severe on foliage of field corn in many areas of San Juan County. (N. M. Coop. Rpt.). UTAH - Damage by T. telarius severe in few corn fields in Davis County, but light in most fields. (Knowlton, Rogers). COLORADO - T. telarius continues a principal problem on cereal and forage crops throughout State. (Bulla). MARYLAND - Tetranychus sp. caused serious damage to 10 acres of soybeans at Cambridge, Dorchester County. (U. Md., Ent. Dept.).

BANKS GRASS MITE (Oligonychus pratensis) - NEBRASKA - Damaged corn in panhandle area. (Hagen). Localized populations in south central areas ranged noneconomic to damaging in corn. (Roselle).

SOD WEBWORMS (*Crambus* spp.) - WASHINGTON - Adults abundant in Merion bluegrass lawns in Yakima, Yakima County, and Pullman, Whitman County. (Landis, Telford). NEBRASKA - Scattered populations causing moderate damage in Lancaster County. (Bergman). VIRGINIA - Severe in turf in cemetery at Clay Pool Hill, Tazewell County (Rowell, McDonald, Aug. 28); caused extensive damage to lawn in Wytheville, Wythe County (Grayson); severe in bluegrass lawn in Lexington, Rockbridge County (Tarpley, Craun). MARYLAND - Larvae caused heavy injury to several lawns in Bowie area, Prince Georges County. (U. Md., Ent. Dept.).

RANGE CATERPILLAR (*Hemileuca oliviae*) - NEW MEXICO - Extremely heavy numbers denuding rangeland in Farley-Abbott area, Colfax County. Movement almost army-like; denuding range of grass. (N. M. Coop. Rpt.).

SAGEBRUSH DEFOLIATOR (*Aroga websteri*) - NEVADA - Adults heavy in Elko area, Elko County; entering homes. (Earnist).

A BERMUDA GRASS MITE (*Aceria cynodonis*) - CALIFORNIA - Damaging Bermuda grass in Sacramento, Sacramento County, by causing failure of upper leaves to separate. Lawns cut regularly appear not to develop heavy infestations of this mite. (Cal. Coop. Rpt.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Large adult flights still occurring in Graham and Yuma County alfalfa. (Ariz. Coop. Sur.). NEW MEXICO - Larvae ranged 0-40 per 100 sweeps in alfalfa checked in San Juan County. Some damage noted in heavier infested fields. (N. M. Coop. Rpt.). WISCONSIN - Larvae continue prevalent in most alfalfa; generally range 1-3 per sweep. (Wis. Ins. Sur.). OHIO - Larvae light in most alfalfa throughout southern area. (Lyon). MARYLAND - Light on alfalfa in Frederick County. (U. Md., Ent. Dept.).

CABBAGE LOOPER (*Trichoplusia ni*) - ALABAMA - Few noted on soybeans. (McQueen). MISSISSIPPI - Medium to heavy on soybeans in delta counties. (Ouzts). ARKANSAS - Ranged 0-3 per 30 feet of row in one of 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.). OKLAHOMA - Light in alfalfa in Major County, northwest; 3 per 10 sweeps. (Okla. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Light to moderate on soybeans checked in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). ARKANSAS - Ranged 0-66 per 30 feet of row in 12 of 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.).

GARDEN WEBWORM (*Loxostege similalis*) - OKLAHOMA - Light counts of 5 per 10 sweeps noted in Major County alfalfa. Heavy numbers reported in localized areas of Washington County, northeast. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - OKLAHOMA - Damaging peanuts in most peanut-growing areas of State. (Okla. Coop. Sur.).

A LEAF ROLLER MOTH (*Platynota stultana*) - ARIZONA - Infestations spotty in Yuma County; controls applied to one field of alfalfa in Wellton area. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - MARYLAND - Building up; highest count over 200 per sweep on alfalfa in Thurmont area, Frederick County. (U. Md., Ent. Dept.). OHIO - Light to moderate in alfalfa near McArthur, Vinton County. Nymphs and adults ranged 200-275 per 50 sweeps. (Lyon). WISCONSIN - Increased in many fields where regrowth lush; 20-30 per sweep common. Winged forms becoming common in lower populated fields and general buildup expected. (Wis. Ins. Sur.). NORTH DAKOTA - Populations built up in some southeastern areas; ranged 30-50 per sweep. Moderate numbers of lacewings and lady beetles also present. (N. D. Ins. Sur.). WYOMING - Averaged 550 per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, week ending August 30. Counts per 100 sweeps in alfalfa averaged 600 in Sublette and Uinta Counties and 475 in Carbon and Sweetwater Counties. (Marks). OKLAHOMA - Light populations of 100 per 10 sweeps noted on

alfalfa in Major County, northwest. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate in alfalfa in northern San Juan County. (N. M. Coop. Rpt.). ARIZONA - Increases noted in alfalfa in Graham, Pinal and Maricopa Counties; ranged 3,000-4,000 per 100 sweeps. (Ariz. Coop. Sur.). WASHINGTON - Unusually scarce in eastern area alfalfa. (Landis).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Alates decreased at site of initial infestation in Brodhead area, Green County; numbers decreased by one-third, due possibly to dispersal and/or rains. Few found at location in southern Grant County, several locations in Sauk County, along Wisconsin River in Iowa County, and in at least one field near Mazomanie, western Dane County. Search along Mississippi River as far north as Buffalo County failed to reveal any specimens. (Wis. Ins. Sur.). COLORADO - Populations very high in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Swink, Schweissing). Ranged 50-100 per 100 sweeps in Mesa County; trace numbers noted in Montrose County. (Bulla). OKLAHOMA - Continues light in Major County, northwest; 100 per 10 sweeps. (Okla. Coop. Sur.). NEW MEXICO - Ranged light to moderate in alfalfa in San Juan and Bernalillo Counties. (N. M. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Averaged 60 adults and 54 nymphs per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, week ending August 30. Averaged 42 adults and 36 nymphs per 100 sweeps in same crop following week in Carbon, Sweetwater, Sublette and Uinta Counties. (Marks). COLORADO - Abundant in Delta County alfalfa. (Bulla). UTAH - Mostly *L. elisus*, very numerous on sunflower and weeds in Weber-Davis County fields; nymphs of various sizes sometimes present in conspicuous numbers. (Knowlton). NEW MEXICO - Nymphs and adults abundant in alfalfa in San Juan and Bernalillo Counties. (N. M. Coop. Rpt.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - WYOMING - Adults averaged 26 per 100 sweeps in Hot Springs and Washakie County alfalfa, week ending August 30; averaged 24 per 100 sweeps in same crop in Carbon, Sweetwater, Sublette and Uinta Counties currently. (Marks). OHIO - Nymphs and adults averaged 12 per 50 sweeps in field of alfalfa at Friendship, Scioto County. (Lyon).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults ranged 0-2 per sweep in 10 fields of alfalfa checked in Frederick County. (U. Md., Ent. Dept.). OHIO - Very low adult populations noted in southern counties. (Lyon).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Continues to increase, particularly in area along Mississippi River; as many as 12 nymphs per sweep and yellowing prevalent in many fields. (Wis. Ins. Sur.). MARYLAND - Nymphs and adults caused heavy damage to 9-acre field of alfalfa at Eden, Wicomico County. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Ranged 300-800 per 100 sweeps in alfalfa in Yuma, Graham and Maricopa Counties. (Ariz. Coop. Sur.). ARKANSAS - Ranged 0-10 per 30 feet of row in 9 of 13 soybean fields checked in Lonoke County. (Ark. Ins. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEW MEXICO - Ranged light to heavy in San Juan County alfalfa. Counts per 100 sweeps as follows: La Plata - 0-8 larvae; Kirtland - 16-35 larvae, 2-8 adults; Farmington - 12 to over 100 larvae. (N. M. Coop. Rpt.). MARYLAND - Larvae ranged 0-5 per sweep in 10 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - ALABAMA - Causing considerable leaf damage to soybeans in Limestone, Morgan and Madison Counties. (McQueen). ARKANSAS - Ranged 3-33 per 30 feet of row in 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.). MARYLAND - Adults causing light to moderate damage to soybeans in Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

MARGINED BLISTER BEETLE (*Epicauta pestifera*) - GEORGIA - Moderate to heavy on soybeans in Bryan County. (Freeman).

THRIPS - MARYLAND - Heavy numbers of an undetermined species noted on alfalfa near bloom at Eden, Wicomico County. (U. Md., Ent. Dept.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Collected in Fayette County for the first time. (PPC, South. Reg., July Rpt.).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NEW MEXICO - Apples checked at packing sheds and orchards in San Juan and Lincoln Counties showed 5-85 percent damage; damage especially bad in untreated or improperly treated orchards. (N. M. Coop. Rpt.). UTAH - Untreated apples at Logan, Cache County, sometimes 95 percent "wormy" which was very different from observations made at Coalville, Summit County, where only 5 percent of fruit with larvae. (cf. CEIR 13(35): 1012). (Knowlton). MICHIGAN - Adult flight appears almost over; only 4 specimens taken in Livingston County blacklight trap and only 3 emerged in Kent County cage during week ending September 2. Few new "stings" seen since August 20. Problems in commercial orchards low in southwestern area. (Newman, Gilmore, Tatter).

ORIENTAL FRUIT MOTH (Gropholitha molesta) - MICHIGAN - Larvae causing less damage than during other recent years; Amber Gem peaches from infested research plots in Allegan County showed only 6 larval entries in 1,181 fruits dissected September 4. Larvae of undetermined species, possibly G. prunivora, working under skin of apples in Allegan County research plots. (Pshēa).

FALL WEBWORM (Hyphantria cunea) - OHIO - Heavy in several apple orchards in north-eastern area. (Forsythe). NEW MEXICO - Problem in spots in pear and other fruit trees in Farmington area, San Juan County. (N. M. Coop. Rpt.).

A PEACH TREE BORER (Synanthedon sp.) - NEW MEXICO - Light to moderate and injuring peach trees in orchards in Bloomfield area, San Juan County. (N. M. Coop. Rpt.).

SHOT-HOLE BORER (Scolytus rugulosus) - NEW MEXICO - Attacking healthy peach trees; where populations are heaviest, considerable damage occurring at Bloomfield, San Juan County. (N. M. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - MARYLAND - Continues troublesome on commercial apples in Hancock area, Washington County. (U. Md., Ent. Dept.). OHIO - Low in treated orchards at Columbus, Franklin County. (Lyon). MICHIGAN - Numbers trending downward in southwestern orchards since August 20. (Tatter, Pshea).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Continues as principal pest problem in State. Ranged up to 100 per leaf on apples in Mesa County. (Bulla). MICHIGAN - Numbers declining in southwestern orchards since August 27. (Tatter, Pshea).

A SPIDER MITE (Tetranychus mcdanieli) - NEW MEXICO - Damaged foliage of apple trees in most northern counties; some orchards still have heavy infestations. (N. M. Coop. Rpt.).

SAN JOSE SCALE (Aspidiotus perniciosus) - RHODE ISLAND - Heavy on pear in Saunderstown, Washington County; few crawlers noted. (Mathewson, Sheehan).

PEAR-SLUG (Caliroa cerasi) - COLORADO - Active on cherry, plum and pear throughout State. (Hantsbarger). UTAH - Damage to pears and cherries in Davis County moderate. (Rogers, Knowlton).

WOOLLY APPLE APHID (Eriosoma lanigerum) - NEW MEXICO - Caused considerable damage to terminal growth of apple trees in several orchards in San Juan County. Lighter infestations found in most apple orchards in this area. (N. M. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Adults common in neglected orchards in Oakland and Macomb Counties; of 25 collected September 4, males numbered 21 and females 4. (Siefert). WISCONSIN - Larvae numerous in apples in Walworth and Kewaunee Counties; few adults continue to be trapped; one specimen collected in Brodhead, Green County, September 30. (Wis. Ins. Sur.).

VINEGAR FLIES (Drosophila spp.) - MICHIGAN - Adults abundant in peach and apple packing sheds and causing more problems in southwestern area than during other recent years. (Tatter).

GRAPE LEAFHOPPERS (Erythroneura spp.) - OHIO - Nymphs moderate to heavy on grape foliage at home garden in Jackson County. (Lyon).

GRAPE BERRY MOTH (Paralobesia viteana) - OHIO - Larvae noted on grape foliage in Jackson County home garden. (Lyon).

A WEEVIL (Brachyrhinus sp.) - WASHINGTON - Adults severely notching leaves of blueberries at Montesano, Grays Harbor County. (Telford).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Heaviest infestations in decade on pecans of this species and Monellia spp. in Mobile County; also damaging in some orchards in Tallapoosa County. (Deakle, Robinson, Seibels, Burton).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Light on pecans in Limestone, Madison, Marshall and Cherokee Counties; heavy on nuts of hickory trees. (McQueen).

SADDLEBACK CATERPILLAR (Sibine stimulea) - ALABAMA - Few larvae noted on pecans in Limestone County. (McQueen).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Heavy emergence reported in Jefferson County (south central). (Okla. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (Ceratitidis capitata) - FLORIDA - One adult female collected in Steiner trap in guava at Village of El Portel, Dade County. (Hollenberger, Aug. 28).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Moderate damage still found on terminal growth of young citrus trees in Yuma County. (Ariz. Coop. Sur.).

CAMPBOR SCALE (Pseudonida duplex) - FLORIDA - Collected on sweet orange at Deland, Volusia County. (Roberts, Aug. 29).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Chemical Control Zone - Total of 88,418 citrus trees inspected on 878 properties in States of Nuevo Leon and Sonora; results negative. (PPC, Mex. Reg., July Rpt.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Light on citrus nursery stock in Woodland, Yolo County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Buildups occurring on tangerines in Yuma County; ranged 8-10 per fruit. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - End of August - On leaves, CITRUS RUST MITE (Phyllocoptryta oleivora) infested 69 percent of groves (norm 59 percent); 48 percent economic (norm 38 percent). On fruit, CITRUS RUST MITE infested 68 percent of groves (norm 68 percent); 46 percent economic (norm 48 percent). Despite decrease past month, population above average and at high level. Little further decrease expected in cold-damaged groves. Undamaged groves will show greater decrease, but injurious infestations will be present in about 30 percent of such groves. Highest districts upper east coast, Gainesville, Bartow, Orlando, west coast and Brooksville. CITRUS RED MITE (Panonychus citri) infested 53 percent of groves (norm 39 percent); 21 percent economic (norm 20 percent). Although

population decreased and is at moderate level, scattered groves, especially cold-damaged groves, may harbor heavy infestations. Highest districts upper east coast and Orlando. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 39 percent of groves (norm 20 percent); 18 percent economic (norm 7 percent). Population dropped to moderate level, but is above average for time of year and higher in cold-defoliated groves. Further decrease expected. Highest districts Gainesville and Orlando. PURPLE SCALE (*Lepidosaphes beckii*) infested 59 percent of groves (norm 60 percent); 8 percent economic (norm 3 percent). Little change expected for current average level. All districts low and most infestations light. GLOVER SCALE (*L. gloverii*) infested 49 percent of groves (norm 18 percent); 17 percent economic (norm 1 percent). Population will continue above average and with little change. CHAFF SCALE (*Parlatoria pergandii*) infested 52 percent of groves (norm 26 percent); 13 percent economic (norm 1 percent). Population continued above average and will increase. YELLOW SCALE (*Aonidiella citrina*) infested 29 percent of groves (norm 9 percent); 2 percent economic (norm 1 percent). Population continued above normal. Infestations will become heavier. BLACK SCALE (*Saissetia oleae*) infested 39 percent of groves (norm 38 percent); 22 percent economic (norm 18 percent). Population slightly above average and at moderate level. Gradual decrease expected. FLORIDA RED SCALE (*Chrysomphalus aonidum*) present as light infestations in a few warm-location groves. WHITEFLIES are near normal, moderate level; population increasing gradually. Where mites are increasing in cold-damaged groves, further increase is likely unless control measures are taken at this time. In most undamaged groves, high mite infestations are expected to decrease and fall mite spray can be delayed. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

POTATO APHID (*Macrosiphum euphorbiae*) - OHIO - Red form heavy on tomatoes in Jackson County; caused severe damage. (Lyon). COLORADO - Light to medium in some potato fields in Costilla, Conejos, Alamosa, Rio Grande and Saguache Counties; ranged 0-100 per leaf. (Jenkins). UTAH - Generally light this season in fields examined. (Knowlton).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adult counts per 100 sweeps in potato fields averaged 1 in Fremont and Washakie Counties and 2 in Hot Springs County. (Marks, Aug. 30).

TOMATO FRUITWORM (*Heliothis zea*) - UTAH - Occurrence in northern canning areas very light. (Knowlton).

POTATO TUBERWORM (*Gnorimoschema operculella*) - MICHIGAN - Larvae causing injury to exposed tubers in infested potato fields in Monroe County. (Guyer).

A SCARAB (*Aphodius distinctus*) - WASHINGTON - Larvae and pupae in harvested potato field at Basin City, Grant County; damage to potatoes not apparent. (Onsager).

GREAT BASIN WIREWORM (*Ctenicera pruninia*) - WASHINGTON - Larvae causing 30 percent damage to potato tubers at Basin City, Grant County, and Mesa, Franklin County. (Onsager).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - COLORADO - Noticeable numbers continue damage in treated fields in Weld and Larimer Counties. (Berry).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - OHIO - Groups of 40-50 adults feeding on potatoes at South Bloomfield, Pickaway County. (Richards).

BEEF LEAFHOPPER (*Circulifer tenellus*) - NEW MEXICO - Populations were high in most tomato-growing areas of State; curly top virus an important factor in reducing yields in Valencia, San Juan, Rio Arriba, Dona Ana and Luna Counties. (N. M. Coop. Rpt.).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Averaged 1 larva per 100 sugar beet plants in Fremont, Hot Springs and Washakie Counties. (Marks, Aug. 30).

GARDEN WEBWORM (Loxostege similalis) - ARIZONA - Larvae damaging fields of table beets in Yuma County; controls underway in most fields. (Ariz. Coop. Sur.).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Larvae heavy on sugar beets in Fresno, Fresno County. (Cal. Coop. Rpt.).

AN EPHYRID FLY (Psilopa leucostoma) - WASHINGTON - Rare species mining sugar beet leaves at Walla Walla, Walla Walla County; larvae collected July 8 and reared to adults July 29. Det. by M. T. James. (Landis).

MEXICAN BEAN BEETLE (Epilachna varivestis) - OHIO - Severe feeding damage observed on most garden beans throughout southern area; new adults emerging in Lawrence County. (Lyon). COLORADO - Causing damage in several gardens in vicinity of Fort Collins, Larimer County. (Hantsbarger).

COWPEA CURCULIO (Chalcodermus aeneus) - ALABAMA - Few adults noted on southern peas in Autauga, Lee and Elmore Counties. (McQueen).

IMPORTED CABBAGEWORM (Pieris rapae) - MARYLAND - Larvae extremely destructive to garden cabbage at Powellville, Wicomico County. (U. Md., Ent. Dept.).

CABBAGE APHID (Brevicoryne brassicae) - DELAWARE - Building up on cole crops in Kent County. (Bray). UTAH - Infestations about normal in Salt Lake and Weber Counties in home gardens. (Knowlton).

SQUASH BEETLE (Epilachna borealis) - RHODE ISLAND - Adults continue numerous on squash in Peace Dale, Washington County, gardens. (Mathewson).

A LEAFHOPPER (Empoasca filamenta) - UTAH - Damage below normal this season on squash. (Knowlton).

SQUASH BUG (Anasa tristis) - RHODE ISLAND - Not seen nor reported again this year. (Mathewson).

ASPARAGUS BEETLE (Crioceris asparagi) - CALIFORNIA - Adults heavy on asparagus planting in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - CALIFORNIA - Heavy in rhubarb plants locally in Riverside, Riverside County. (Cal. Coop. Rpt.).

A FLEA BEETLE - MICHIGAN - Undetermined species heavy in Branch County mint field. (Durren).

WEEVILS (Brachyrhinus spp.) - UTAH - Caused conspicuous damage to a few strawberry fields in Davis County. (Rogers, Knowlton).

POTATO LEAFHOPPER (Empoasca fabae) - NORTH DAKOTA - Remains abundant on potatoes in Grand Forks area, Grand Forks County. Counts ranged 20-25 per sweep. (N. D. Ins. Sur.). MARYLAND - Heavier than usual on snap and lima beans on Eastern Shore. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Buildup continuing on late potatoes in areas of Weld County; generally light to moderate. (Simpson). WASHINGTON - Apterae and alatae unusually scarce on potatoes and sugar beets in eastern area. (Landis).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Numerous in some gardens in Salt Lake City. (Knowlton).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WASHINGTON - Populations diminishing on potatoes but increasing slightly on sugar beets in eastern area. (Landis).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Several moderate to heavy infestations occurring on tobacco in Anne Arundel and St. Marys Counties. (U. Md., Ent. Dept.).

A FLEA BEETLE - OHIO - Undetermined species ranged 8-10 adults per lower tobacco leaf at Friendship, Scioto County; caused moderate economic damage. (Lyon).

HORNWORMS (Portoparce spp.) - MARYLAND - Generally light on tobacco in Anne Arundel and St. Marys Counties; few eggs noted on tobacco at Hollywood, St. Marys County. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Highest infestation recorded on tobacco in St. Marys County was 2 percent. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Several light to moderate infestations on 20-34 percent of plants on tobacco in St. Marys County. (U. Md., Ent. Dept.).

SUCKFLY (Cyrtopeltis notatus) - VIRGINIA - Severe on tobacco on farm in Farmville, Prince Edward County. (Rowell, Peery, Aug. 29).

COTTON NOTES FROM ARIZONA

Considerable damage from LYGUS BUG (Lygus spp.) still being found, particularly on late developing top bolls. Counts remain same as previous week except in Yuma County where reductions found. COTTON APHID (Aphis gossypii) populations increasing in Yuma and Graham Counties; appearing on terminal growth. Increases of SALT-MARSH CATERPILLAR (Estigmene acrea) noted in Yuma and Pinal Counties; some controls applied in Yuma County. Few larvae of COTTON LEAFWORM (Alabama argillacea) found in Stanfield area of Pinal County. BEET ARMYWORM (Spodoptera exigua) infestations increased in Pinal and Maricopa Counties; ranged 16-20 per 100 plants. A STINK BUG (Euschistus impictiventris) ranged light to moderate in Pinal, Maricopa and Graham Counties. (Ariz. Coop. Sur.).

Weather of the week ending September 9 (Continued from page 1072)
from the Pacific Ocean to the Rocky Mountains, and much of the country east of the Rockies received less than 0.50 inch of rain during the week. Showers produced more than an inch at a few isolated locations, mostly scattered from the Great Lakes to the gulf, in Florida, and along the middle and northern Atlantic coast. Temperatures averaged above normal over most of the Nation from the Pacific to the Mississippi River. The main exceptions were over Arizona and nearby parts of adjoining States and small areas in Nebraska and Iowa. Temperatures averaged below normal over the northern prairie, the Ohio River Valley, and from Georgia northeastward to New England. Temperature departures ranged from -6° in the Norfolk, Virginia, vicinity to +10° at Havre and Glasgow, Montana. (Summary supplied by U.S. Weather Bureau).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Punctured all squares examined in a Harnett County field on August 30. (Vinson). SOUTH CAROLINA - Young bolls still require protection from numerous weevils in fields in Florence area to make full potential crop; however, weevil numbers remain low in adequately protected fields. (Taft et al.). GEORGIA - Square counts in 15 northwest area cotton fields ranged 7-75 percent punctured squares; average 43 percent. (Johnson). ALABAMA - Although of no immediate concern to cotton growers in central and southern areas, weevils numerous. Recent "hatch outs" in some northern counties, especially Fayette, Marion, Lawrence and others caused considerable damage to half and three-quarter grown bolls; 1-6 bolls per stalk noted damaged in some fields. Dry weather caused squares and small bolls to shed; weevils used larger bolls for food and egg laying. Controls ended in practically all cotton-producing areas as harvest underway in most counties. (McQueen et al.). MISSISSIPPI - Light to heavy in delta counties and in Attala, Choctaw, Copiah, Lowndes, Monroe and Montgomery Counties on cotton. Controls applied. (Ouzts). OKLAHOMA - Continues generally light in west central and southwest areas; check in nonirrigated field showed 80 percent infestation. Ranged 0-6 percent in Bryan County (south central). (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Numbers on decline although some fields of younger cotton heavily infested with large, difficult-to-kill larvae in Florence area. (Taft et al.). GEORGIA - Egg counts in 15 northwest area cotton fields ranged 0-21 per 100 terminals or plants; average 15. Larvae ranged 0-42 per 100 terminals or plants; average 9. Infestations have been more severe this season than in past several years. (Johnson). ALABAMA - Continue a problem in young and late cotton throughout most of northern part of State. Unusually large numbers of eggs and small larvae in most fields. H. zea adults common in all fields. (McQueen et al.). MISSISSIPPI - H. zea and H. virescens range light to heavy on cotton in Attala, Choctaw, Copiah, Monroe, Montgomery and Prentiss Counties and in delta counties. Controls applied. H. virescens a problem in isolated areas from Coahoma County to Issaquena County. (Ouzts). ARKANSAS - Determination of larvae collected from cotton during first half of August were 137 H. zea, 7 H. virescens; 4.2 percent were H. virescens. (Ark. Ins. Sur.). OKLAHOMA - Light in Beckham County (west central) and in Jackson and Greer Counties (southwest). Infestation ranged 8-30 percent in Bryan County (south central), with medium counts reported in McCurtain County (southeast). (Okla. Coop. Sur.). CALIFORNIA - H. zea increasing in Fresno County, except far westside area where few fields above economic level. Counts per 100 plants, in other areas, as follows: Clovis, 10; Tranquillity-San Joaquin, 4-15, with much treatment underway; Fowler, 3-7; Reedley, 4. (Ferris). Generally light in Kern County for time of year. Localized problems where counts of 6-8 small larvae per 100 plants can be found. (Black).

CABBAGE LOOPER (Trichoplusia ni) - ARKANSAS - Egg deposition continues heavy on cotton in upper Arkansas River Valley. (Ark. Ins. Sur.). MISSISSIPPI - Light on cotton in delta counties; controls applied. (Ouzts).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Medium population of 10 per plant noted on cotton in Major County, northwest. (Okla. Coop. Sur.). NEW MEXICO - Adults and larvae noted in several Dona Ana County cotton fields. In pupal stage in most fields in Roosevelt County. (N. M. Coop. Rpt.).

BEEET ARMYWORM (Spodoptera exigua) - GEORGIA - Light on cotton in Pike, Meriwether and Polk Counties. (Johnson).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ARKANSAS - Single specimen collected from white cotton bloom in Pope County (west central), September 4. (Ark. Ins. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Infestations common in cotton adjacent to or near rose nurseries in Kern County; square and boll feeding evident. Severe infestation may cause early defoliation and boll damage. (Leigh).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Populations at or near treatment level in many areas of Fresno County. In Clovis area, counts increased rapidly; nymphs and adults present. (Ferris). Counts not extremely high in Kern County, but adults and nymphs present in sufficient numbers to warrant control in some fields. Such populations can be damaging to small bolls and squares, particularly in late maturing fields. (Black, Leigh).

APHIDS - CALIFORNIA - Infestations spotty in some fields in Reedley area, Fresno County. (Ferris). Evident throughout Kern County; as bolls are opening, growers and field checkers should be particularly alert for these pests. (Leigh).

A THRIPS (Leucothrips piercei) - CALIFORNIA - Nymphs and adults medium on cotton in El Centro, Imperial County. (Cal. Coop. Rpt.).

WHITEFLIES - ALABAMA - Adults and nymphs extremely heavy; 30-60 per leaf on some older cotton in Limestone and Madison Counties. (McQueen et al.).

SPIDER MITES - CALIFORNIA - Populations heavy in Clovis area, Fresno County, where problem worse than in 1962; some treatment underway in San Joaquin-Tranquillity area. (Ferris). Infestations continue to appear in tops of plants in Kern County; however, development slowed by cool nights, and severity of problem becoming questionable. (Black). Evident in Kern, Kings and Fresno County areas. With exception of very severe infestations of Tetranychus atlanticus, doubtful that controls at this time will result in increased yield or quality. (Leigh). MISSISSIPPI - Isolated infestations of Tetranychus spp. range light to heavy in Prentiss County and in delta counties; controls applied. (Ouzts). ALABAMA - Seriously damaged cotton at Sand Mountain and the Tennessee Valley during past 15-20 days; many fields 10-80 percent defoliated, most prematurely. Some fields noted with 2-10 young bolls per stalk in damaged fields that will not open properly, or not at all. (McQueen et al.). GEORGIA - Light to moderate on cotton in 15 northwest area cotton fields. (Johnson).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Heavy damage to isolated and small groups of loblolly and short leaf pine especially on lawns and small volunteer groups in Marion, Lawrence, Marshall and Cherokee Counties. (Parris et al.). OKLAHOMA - Moth emergence marking beginning of fourth generation in Stillwater area. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Light to moderately heavy populations defoliating poplar and other shade trees in San Juan County. Populations much heavier in Rio Arriba County on poplars along Rio Grande and streams. (N. M. Coop. Rpt.). ALABAMA - Very few infestations in central area. Most noticeable infestation on pecans in Limestone County. Few persimmon and sweetgums affected. (McQueen).

AMERICAN DAGGER MOTH (Acrionicta americana) - NEVADA - Generally light to medium, with larvae heavy on some boxelders in Reno-Sparks area, Washoe County. Entire trees defoliated in some instances. Many persons suffered severe rash after handling larvae. (Coop. Rpt.).

YELLOW-NECKED CATERPILLAR (Datana ministra) - NORTH CAROLINA - Larvae feeding on willow oak in Wayne County. (Lamm, Robertson).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - Trapping completed for 1963 with no males being collected. This is second consecutive year no adults taken in State. Intensive trapping for 1-2 more years necessary to determine if species eradicated from State. (Ring). OKLAHOMA - Traps checked in 15 central and eastern counties with negative results. (Okla. Coop. Sur.).

SILVER-SPOTTED SKIPPER (Epargyreus clarus) - ALABAMA - Numerous larvae feeding on black locust throughout State. (McQueen).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ARIZONA - Caused heavy damage to foliage of Chinese elms in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy and defoliating elms near Glenwood, Catron County. (N. M. Coop. Rpt.). COLORADO - Damaging elms in Fremont County. (Hantsbarger). OKLAHOMA - Damage continues throughout State. Heavy numbers of Chrysopa sp. eggs (1.5 per leaf) on elms in Stillwater area. (Okla. Coop. Sur.). ALABAMA - Continues to defoliate trees throughout northern area. Controls applied. (McQueen).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ALABAMA - Common on black locust throughout northern area. (McQueen).

LARGER ELM LEAF BEETLE (Monocesta coryli) - ALABAMA - Defoliating American elms in lowland areas of Lee County in vicinity of Opelika. (McQueen).

LOCUST BORER (Megacyllene robiniae) - ALABAMA - Quite heavy in many stands of black locust in Marion, Lawrence, Limestone, Morgan, Madison and Marshall Counties. Few adults taken. (McQueen).

OAK LACE BUG (Corythucha arcuata) - NORTH DAKOTA - Caused moderate to heavy damage to burr oak foliage in Kindred area, Cass County. (N. D. Ins. Sur.).

LEAFHOPPERS - OKLAHOMA - Caused heavy damage to elms and redbud trees in Stillwater area. (Okla. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Heavy injury to ornamental arborvitae at locations in Prince Georges and Worcester Counties. (U. Md., Ent. Dept.). ALABAMA - Continues to damage arborvitae, redcedar, black locust, hackberry and many other shrubs and trees throughout northern counties. (Parris et al.).

MIMOSA WEBWORM (Homadaula albizziae) - OHIO - Populations building up on honeylocust in central and southwestern areas. Leaf webbing severe on wild honeylocust in Morrow County. (Lyon). NORTH CAROLINA - Caused browning of honeylocust locally in Wake County. (Mount). ALABAMA - New and overlapping generations on mimosa throughout northern area. Many trees completely defoliated, presenting unsightly appearance. Heavy in Mobile County area. (Seibels et al.).

WHITE-LINED SPHINX (Celerio lineata) - ARIZONA - Larvae numerous and causing problems to homeowners in Pima, Pinal, Maricopa and Yuma Counties. (Ariz. Coop. Sur.).

APHIDS - CALIFORNIA - Cinara curvipes heavy on deodar cedar locally in Santa Cruz, Santa Cruz County. Aphis nerii heavy on oleander nursery stock in Concord, Contra Costa County. (Cal. Coop. Rpt.). WISCONSIN - Lachnus salignus populations abundant locally in Dane County. Numbers apparently less than last year. (Wis. Ins. Sur.). NEW JERSEY - Various species on many ornamentals and shade trees. (Ins.-Dis. Newsltr., Sept. 3).

SPRUCE APHID (Aphis abietina) - CALIFORNIA - Heavy population on Picea sp. in Golden Gate Park, San Francisco. (Cal. Coop. Rpt.).

PHLOX PLANT BUG (Lopidea davisi) - OHIO - Moderate to heavy damage on phlox plants in Jackson County; nymphs and adults present. Averaged 15-20 bugs per plant. (Davidson, Lyon).

A SUBTERRANEAN TERMITES (Reticulitermes sp.) - CALIFORNIA - Heavy in Mexican sedum plants in St. Helena, Napa County. (Cal. Coop. Rpt.).

SPIDER MITES - WYOMING - Tetranychus sp. building up in Pinedale area, Sublette County, on evergreens near homes. Discolored foliage noted in some instances. (Marks). NORTH DAKOTA - Tetranychus telarius damaged spruce and arborvitae in nursery and yard plantings in southeast; continues to feed. (N. D. Ins. Sur.). OKLAHOMA - Panonychus ulmi damaged elms repeatedly treated. (Okla. Coop. Sur.).

COCCIDS - NEW JERSEY - Toumeyella liriodendri and Neolecanium cornuparvum crawlers active. (Ins.-Dis. Newsltr., Sept. 3). CALIFORNIA - T. liriodendri currently under eradication on tuliptrees in San Jose, but an unusual occurrence of a heavy infestation found on Magnolia soulangeana in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

Coccids in Florida - Ceroplastes cirripediformis moderate on Gardenia jasminoides at Pembroke, Polk County (McLeod, Nelson, Aug. 15). Ceroplastes floridensis and Chrysomphalus dictyospermi moderate on Ilex sp. at Cocoa, Brevard County. (Levin, Aug. 23). Chrysomphalus aonidium heavy on Ficus pandurata at Apopka, Orange County. (Musgrove, Aug. 14). Phenacaspis cockerelli moderate on Archontophoenix alexandrae at Bradenton, Manatee County (Bickner, Aug. 21) and severe on Michelia fuscata at Fairville, Orange County (Griffith, Aug. 28). Pseudaulacaspis pentagona severe on Carya sp. at Daytona Beach, Volusia County. (Pott, Aug. 29). Pulvinaria psidii moderate on Ixora coccinea at Bradenton, Manatee County. (Bickner Aug. 21). Saissetia oleae moderate on Gardenia jasminoides at Pembroke, Polk County. (Nelson, Barber, McLeod, Aug. 15). Toumeyella parvicornis severe on Pinus sp. at Daytona Beach. (Holley, Pott, Aug. 29).

BULB MITE (Rhizoglyphus echinopus) - CALIFORNIA - Heavy on gladiolus in San Carlos, San Mateo County. (Cal. Coop. Rpt.).

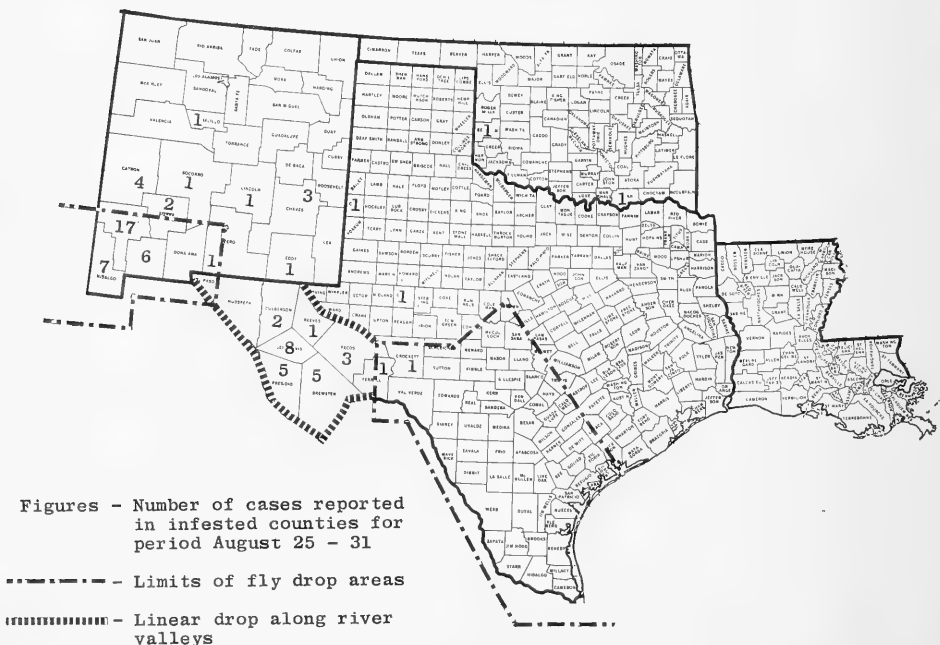
ERIOPHYID MITES - CALIFORNIA - Heavy populations of Aceria parapopuli on quaking aspen trees in Lake Mary, Mono County. (Cal. Coop. Rpt.). WISCONSIN - Nalepella sp. prevalent on seedling white and black spruce in central and northern counties. (Wis. Ins. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (Haematobia irritans) - WYOMING - Adults remain source of annoyance to livestock in Fremont, Hot Springs and Washakie Counties. Populations estimated at 175 per animal. (Marks, Aug. 30). UTAH - Causing considerable annoyance to several cattle herds in Plain City-Roy area, Weber County. (Knowlton). Numerous to very numerous on cattle along Wasatch Front, from Syracuse through Tremonton, northern area. (Knowlton, Hanson). OKLAHOMA - Populations up somewhat in Stillwater area with counts of 500 per head on cows. In Kay County, counts of 1,500-2,000 per head and some with 3,000 per head. (Okla. Coop. Sur.). MISSISSIPPI - Medium to heavy on livestock in delta counties. Control applied. (Ouzts). MICHIGAN - Continues as a pest in Sanilac County. (Sowberly). MARYLAND - Counts of 0-10 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period August 25 - 31, a total of 28 confirmed cases was reported from TEXAS; 44 from NEW MEXICO; and 1 from OKLAHOMA. Specimens were reported from 10 counties in Texas, 11 counties in New Mexico and 1 county in Oklahoma. A total of 101,511,450 sterile flies was released in Texas, 8,778,000 in New Mexico and 800,000 in Oklahoma during the period August 25 - 31. (Anim. Dis. Erad. Div.).



STABLE FLY (*Stomoxys calcitrans*) - WYOMING - Continues active and bothersome to livestock herds in Fremont, Hot Springs and Washakie Counties. Estimated counts ranged 35-40 per animal week ending August 30. Adults averaged 12-14 per animal in Sublette County. (Marks). UTAH - Troublesome about several dairy farms at Hooper, Ogden and Willard in Weber and Box Elder Counties. (Knowlton, Hanson). OKLAHOMA - Counts of less than 1 per head on animals in Stillwater area. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta areas. Control applied. (Ouzts). MICHIGAN - Continues as a pest in Sanilac County. (Sowerby). MARYLAND - Counts of 4-15 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - MARYLAND - Counts ranged 3-75 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.). MICHIGAN - Continues as pest in Sanilac County. (Sowerby).

HOUSE FLY (Musca domestica) - OKLAHOMA - Populations up somewhat from previous week's counts in Stillwater area. (Okla. Coop. Sur.). OHIO - Many residents of Wayne County complained of population buildup. (Lyon). MICHIGAN - Continues as a pest in Sanilac County. (Sowerby).

HORSE BOT FLY (Gasterophilus intestinalis) - UTAH - Continues annoying to some horses in Plain City-Hooper area, Weber County. (Knowlton).

SHEEP BOT FLY (Oestrus ovis) - DELAWARE - Adults emerging in laboratory from pupae and larvae collected August 29 and 30, 1963, at Newark, New Castle County. This is a new State record. (MacCreary).

TABANIDS - UTAH - Tabanus punctifer and other species seriously annoying horses and cattle in Brigham City, Hooper, Syracuse areas. Annoyance most severe at Syracuse. (Knowlton, Hanson). MISSISSIPPI - Tabanus spp. light on livestock in delta counties. Control applied. (Ouzts).

MOSQUITOES - UTAH - Annoyance moderate in Davis County recently but severe in few local areas. (Rogers, Knowlton). Largely Aedes dorsalis annoying in Syracuse-Hooper fields, Davis-Weber Counties. (Hanson, Knowlton). MISSISSIPPI - Psorophora spp. light on livestock in delta counties. (Ouzts). NORTH CAROLINA - Mosquito complaints few in number recently. Two complaints came from Thomasville-Lexington area and another from Waynesville. (Ashton).

WOOL MAGGOTS - OHIO - Unidentified species in several sheep flocks in central area. One flock in Morrow County with 2 infested ewes and 3 infested lambs. Maggots abundant on one ewe near tailhead and up back. Larvae feeding on flesh and blood. (Lyon).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - C. canis and C. felis collected near Cincinnati, Hamilton County. (Rowe, Holdsworth). MARYLAND - Adults of C. felis heavy locally in Andora, Cecil County. (U. Md., Ent. Dept.).

WASPS - RHODE ISLAND - Statewide complaints of Vespa spp. and Polistes spp. normal for season. (Mathewson, Cartier, King, Hannah).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Continues to cause considerable concern in Oklahoma City area. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

CRICKETS - NORTH DAKOTA - Gryllus spp. adults and nymphs continue a problem in and around homes in outlying residential areas in southeastern area. (N. D. Ins. Sur.). WISCONSIN - Crickets, probably Acheta domesticus, troublesome in houses in Walworth and Burnett Counties. (Wis. Ins. Sur.). MICHIGAN - Field crickets in many counties. (Sowerby). MARYLAND - Undetermined species causing a nuisance in homes in several localities over State. (U. Md., Ent. Dept.).

A NONSUBTERRANEAN TERMITE (Incisitermes minor) - OHIO - Collected from a wooden ceiling at Wright-Patterson Air Force Base, near Fairborn, Greene County, June 18, 1963. This is a new State record. Det. T. E. Snyder. (Adams).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Entering homes in Salt Lake City area, Salt Lake County. (Knowlton).

BOXELDER BUG (Leptocoris trivittatus) - DELAWARE - Very annoying in and around homes in several areas of New Castle County. (Burbutis).

COCKROACHES - UTAH - A number of homes at Bountiful, Davis County, infested. Species usually Blatta orientalis. (Knowlton, Rogers).

STORED-PRODUCT INSECTS

CIGARETTE BEETLE (Lasioderma serricorne) - FLORIDA - This species and Oryzaephilus surinamensis infested corn meal and popcorn at Macclenny, Baker County, August 28. (Collins).

INDIAN-MEAL MOTH (Plodia interpunctella) - NEBRASKA - Damaging milo in bin in Seward County. (Bergman).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults of several species numerous in alfalfa in Fremont, Hot Springs and Washakie Counties; averaged 46 per 100 sweeps, August 30. Adults averaged 44 per 100 sweeps in same crop in Carbon, Sweetwater, Sublette and Uinta Counties, September 3. (Marks). MICHIGAN - Larvae and pupae of unspecified species abundant where aphids present in Shiawassee County. (Search).

DAMSEL BUGS (Nabis spp.) - WYOMING - Averaged 42 adults per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, August 30. Averaged 56 per 100 sweeps in Carbon, Sweetwater, Sublette and Uinta Counties, September 6; increasing in alfalfa in southern areas. (Marks). MARYLAND - Adults common in alfalfa and soybeans in Wicomico County. (U. Md., Ent. Dept.).

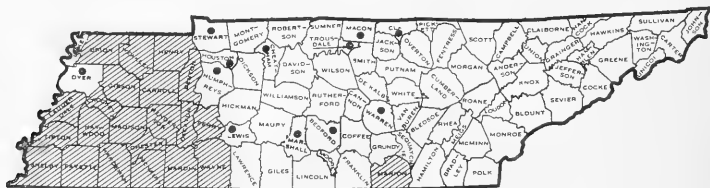
BIG-EYED BUGS (Geocoris spp.) - WYOMING - Adults averaged 28 per 100 sweeps in Sublette and Uinta County alfalfa fields. (Marks).

A FLOWER BUG (Orius sp.) - MARYLAND - Nymphs common in soybeans in Wicomico and Worcester Counties. May be important in checking numbers of corn earworm eggs. (U. Md., Ent. Dept.).

LACEWINGS - RHODE ISLAND - Numerous about lights at night. (Mathewson).

MISCELLANEOUS INSECTS

Occurrence of Periodical Cicadas in Tennessee - 1963



Degree of Infestation
▨ General
● Spotted

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Rapidly dwindling generally, although occasional observations of apparent new concentrations on isolated favorite food plants noted. (Mathewson, King, Peabody, Howard). OHIO - Females still laying eggs in laboratory tests; many early instars present. (Davidson). MICHIGAN - Some adults continue to be recovered from traps in Battle Creek area; in other areas of State trap collections low with only one per trap pattern when new finds made. In Ypsilanti area, 18 single collections made during week. In Metropolitan Detroit, 25 single collections made. In rural Monroe County, few single catches made in localities outside of area treated in 1962. Very few collections made in area treated in 1962. Traps in Lansing, Flint, Grand Rapids and rural Berrien County negative during week. (Ring). OKLAHOMA - All traps in central and eastern counties inspected; results negative. (Okla. Coop. Sur.). NEW MEXICO - Traps operated in areas of heavy traffic at Albuquerque, Roswell, and Las Cruces yielded no specimens. (N. M. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Found for the first time in Leon County, FLORIDA. Inspections in GEORGIA revealed new infestations in several known infested counties and extensions of infestations. New county records for Georgia include Chattahoochee, Early, Lowndes and Warren. Reinfestation found in Evans County, Georgia, which was believed free of infestations. Lee County, ALABAMA, found infested for the first time and new finds made outside of regulated area of Calhoun, Perry, St. Clair and Elmore Counties. Migration of adults in Mobile area nurseries serious problem this year. Collected for the first time in Lafourche Parish, LOUISIANA. New infestation found in town of Lepanto, Poinsett County, Arkansas, and small extensions found at several other infested areas. Collected for the first time in Lincoln County, TENNESSEE, and extensions found in several other counties. Collected for the first time in Calhoun County, SOUTH CAROLINA. Small extensions found in several other counties of the CAROLINAS. (PPC, South. Reg., July Rpt.). ALABAMA - Large portion of Hartselle, Morgan County, now infested. (Smith).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - OHIO - Moderate to heavy populations throughout southern area. Specimens found in Scioto, Pike, Lawrence, Jackson, Vinton and Ross Counties. These are all new county records. In Scioto County, 8-10 adults per tobacco leaf, 4-5 adults per corn leaf and 80-90 adults per 50 sweeps in alfalfa. Many invaded homes or buildings and accumulated in large numbers around lights in evening. (Triplehorn, Lyon).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - GEORGIA - Collected for the first time in Coffee County in July. (PPC, South. Reg., July Rpt.).

NOCTUID MOTHS (Feltia spp.) - WISCONSIN - Increase in catches of F. ducens and F. herilis noted in Madison and Middleton blacklight trap collections. (Wis. Ins. Sur.).

A NOCTUID MOTH (Catocala maestosa) - VIRGINIA - Larvae this species or near this species covering trunks of 2 pecan trees in Heathsville, Northumberland County; det. by D. M. Weisman. (Coggsdale, July 16). Similar specimens collected on pecan tree trunks in other localities; no records of damage to tree foliage. (Tarpley, Rowell).

BUTTERFLIES - ALABAMA - Populations increased considerably throughout State since August 23; Junonia evarete subsp. coenia, Colias philodice and Danaus plexippus among more common species. All sulfer butterflies moving in southeasterly direction. (McQueen).

CORRECTIONS

CEIR 13(35):1012 - CODLING MOTH (Carpocapsa pomonella) - UTAH - Last line should read: "... show damage at Coalville, Summit County. (Knowlton)."

LIGHT TRAP COLLECTIONS

| State | County | Locality | Threatened species | Traps | Time of day | Type of trap | Major crop** |
|-----------|-------------|----------|-----------------------|-------|----------------|-----------------|-----------------|
| TEXAS | Waco | 8/31-9/6 | | | | BL | 2285 |
| WISCONSIN | Janesville | 8/27-9/2 | | | | BL | 141 |
| | Darien | 8/27-9/2 | | | | BL | 40 |
| | Delavan | 8/27-9/2 | | | | BL | 20 |
| | Evansville | 8/27-9/2 | | | | BL | 16 |
| | Madison | 8/27-9/2 | | | | BL | 33 |
| | Madison | 8/27-9/3 | | | | BL | 30 |
| | De Forest | 8/27-9/2 | | | | BL | 44 |
| | Arlington | 8/27-9/2 | | | | BL | 68 |
| | Beaver Dam | 8/27-9/2 | | | | BL | 25 |
| | Fox Lake | 8/27-9/2 | | | | BL | 32 |
| | Oakfield | 8/27-9/2 | | | | BL | 35 |
| | Wayne | 8/27-9/2 | | | | BL | 14 |
| | Theresa | 8/27-9/2 | | | | BL | 16 |
| | Nenno | 8/27-9/2 | | | | BL | 18 |
| | Cedar Grove | 8/27-9/2 | | | | BL | 23 |
| | Waldo | 8/27-9/2 | | | | BL | 63 |
| | | | | | | BL | 14 |

* BL = blacklight; I = incandescent; BV = mercury vapor; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; peas. = peas (unspecified); pot. = potato; sil. = silage; soy. = soybeans; sun. = sunflower; tab. = tobacco; tom. = tomato; unsp. = unclassified plants (unspecified); wpt. = wheat; wpt. = wheat crops (unspecified or mixed); soy. = tobacco; tom. = tomato.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 692nd meeting of the Hawaiian Entomological Society held on August 12, 1963.

SPOTTED GARDEN SLUG (Limax maximus) was found for the first time on the Island of Maui on July 11, 1963. A large specimen was collected by Nobuo Miyahira at Haleakala acres, crawling on the outside wall of a building. On Oahu, this species was first collected in upper Manoa Valley in 1949. Det. by C. E. Pemberton. (Mabel Chong).

SCARABS (Onthophagus catta and Copris incertus) - Investigation of damage to roofing paper on a home in Pupukea, Oahu, during early July showed these 2 species to be responsible. Approximately 90 percent of beetles involved were O. catta. The section of roof damaged was part of a sun deck that had been railed off and in which had been placed a large electrocuting-type light trap. Numerous dead beetles were piled up in the corners. Live beetles had moved to the corners and chewed through roofing made of 3 layers of 40# roofing felt and a top of 70# fiber glass felt, with asphalt binder between each layer. The beetles had chewed holes of 2-3 inches in diameter, exposing the lumber underneath. (H. Nakao).

AN ENSIGN SCALE (Arctothezia occidentalis) - Several specimens (one mature female and 4 pre-adult and nymphal females) were collected at 8,000 feet elevation on rim of Haleakala Crater, Haleakala National Park, Island of Maui, on July 15, 1963. The specimens were found associated with roots of a bunchgrass (Agrostis sandwicensis), which is common in the area. This is a new insect record for Hawaii, and only the second ortheziid scale known to be established in Hawaii; the other being GREENHOUSE ORTHEZIA (Orthezia insignis). (J. W. Beardsley).

A ROOT APHID (Rhopalosiphum rufiabdominalis) collected from roots of yellow nut sedge (Cyperus esculentus) near Pepeeko, Hawaii, on May 23, 1963. This is a new island record and a new host plant record for this species previously known in the State only from Oahu on Cyperus sp. (J. W. Beardsley).

A MANTID (Tenodera australasiae) - Adult and an empty ootheca were collected on Molokai during June 1963; the first at the airport and the second at Mapulehu, 25 miles distant. An ootheca, containing viable eggs which hatched in Honolulu, was collected near Lahaina, Maui, on July 11, 1963. These constitute new island records for T. australasiae, which was previously known only from Oahu. (J. W. Beardsley).

A MYMARID (Patasson calendrae) - This minute hymenopterous parasite of eggs of Sphenophorus spp. is being reared from parasitized eggs received from F. A. Bianchi in Columbia, Missouri. It is hoped that this parasite will become established in Hawaii and aid in the control of a billbug (Sphenophorus venustus vestitus), which has damaged zoysia lawns and sugarcane seedlings in the State. (J. W. Beardsley).

A CHRYSOMELID (Octotoma scabripennis) was recovered from lantana in the White Sands Beach area, Kailua-Keauhou Road, Kona, Hawaii, on July 13, 1963, and was subsequently discovered at Kahauloa, Kona, where it was the dominant species on one lantana clump. This latter location was the release point for a cerambycid (Plagiohammus spinipennis) in late December 1960. The presence of O. scabripennis in both locations indicates that the species is well adapted to both dry and wet habitats. O. scabripennis was first released in 1902, but apparently failed to become established. It was reintroduced in 1954 and 1955 from Mexico; recovery 9 years later was approximately 18 miles from the nearest release point. (C. J. Davis).

PUNCTUREVINE WEEVILS (Microlarinus spp.) - Shipments of the stem feeding species, M. lypriformis, were received from California on July 7, 1963, and released at west Kauai for control of the weed pest, Tribulus terrestris. Riker mounts

showing seed damage to native puncturevine, Tribulus cistoides, by the seed feeding species, M. lareynii, were exhibited. (C. J. Davis).

SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula) - In addition to infestations found between Kailua and Keauhou, Kona, this pest was also found at Napoopoo, Honaunau, Hookena, Hilo and at Paauhau, Hamakua Coast. Chemical eradivative measures discontinued; biological control station established at Honaunau through cooperation of City of Refuge National Historical Park. Other stations are being organized in Hilo and the Hamakua Coast. An appropriation of \$13,300 was made from the Governor's contingent fund to increase laboratory production and distribution of parasites of this pest on Oahu, Hawaii and Kauai. Maui is also included in the program. (C. J. Davis).

A CERAMBYCID (Plagithmysus newelli) - Specimens of this interesting endemic species were reared from Nicotiana glauca collected at Auwahi, Maui, by Nobuo Miyahira. K. Maehler bred P. newelli from the same host on Maui in 1948 and this was the first record of this native beetle breeding in an exotic host. The native host of this species is not known. (C. J. Davis).

Spring and Early Summer
Observations on the Alfalfa Weevil and Other Forage Crop Insects
in Massachusetts-1963

F. R. Shaw and W. Ziener

Alfalfa weevil (*Hypera postica*) has caused extensive damage in some untreated alfalfa fields in Massachusetts in 1963. Population of 2,440 individuals per 100 standard sweeps with a 15-inch net has been recorded.

The following observations are based on population studies made primarily in Hampden and Hampshire Counties. We first observed adults and first and second-stage larvae on May 1 but did not find overwintering eggs. By May 8, up to ten adults and four larvae per 100 sweeps were recorded. On May 17, the first egg punctures were found in stems; these contained an average of 8.0 eggs. The same day 28 adults and 13 larvae, mainly third instar, were obtained per 100 sweeps. On May 22, the populations had increased up to 44 adults and 90 larvae per 100 sweeps, with most of the larvae being third and fourth instars. Up to 37 adults and 477 larvae per 100 sweeps were obtained on May 31. The first pupae in Hampden and Hampshire Counties were noted on the same day. Pupation in Bristol County was noted on May 27 and in southern Berkshire County on June 5.

The maximum population of alfalfa weevil ever recorded in the State, 2,440 specimens per 100 sweeps, was found on June 5 in Berkshire County. This total included 39 adults, 1 pupa, 4 prepupae, 4 first instar, 189 second instar, 984 third instar and 1,219 fourth instar. On the same day, in a count of one-hundred stems, 83 egg punctures were found with an average of 10.6 eggs per puncture. Sixty-seven percent had one, twenty-four percent had two and nine percent had three punctures per stem.

Newly emerged adults were observed on June 13 in Hampden County. Of 29 females captured that day, 18 were old and gravid representing the overwintering brood and 11 lacked developed eggs and were obviously of the new generation.

We recorded also the presence of other insects injurious to forage crops and some of the more important beneficial arthropods as well. A total of 11,688 insects and insect relatives was determined and the data are summarized below.

Abundance of Forage Crop Insects in Massachusetts, Spring, 1963

| <u>Insect Name or Group</u> | <u>Percent of Total</u> |
|---|-------------------------|
| Aphids: | |
| Pea aphid - <u>Acyrtosiphon pisum</u> | 43.6 |
| Beetles: | |
| Alfalfa weevil - <u>Hypera postica</u> | 38.0 |
| Clover root curculio - <u>Sitona hispidula</u> | 2.5 |
| Wireworms - Elateridae | 1.4 |
| Miscellaneous beetles | 1.0 |
| <u>Hypera punctata</u> | |
| <u>Hypera nigrirostris</u> | |
| <u>Sitona scissifrons</u> | |
| Plant Bugs: | 4.1 |
| Mainly the tarnished plant bug, <u>Lygus lineolaris</u> , with <u>Leptopterna dolabratus</u> and <u>Trigonotylus ruficornis</u> being secondary in importance | |

| | |
|--|-----|
| Leafhoppers: | 3.7 |
| The principal species in order of abundance include | |
| <u>Aceratagallia sanguinolenta</u> , <u>Macrosteles fascifrons</u> , | |
| <u>Draeculacephala</u> spp., and in Berkshire County | |
| <u>Errastunus ocellaris</u> | |
| Miscellaneous Insects: | 2.1 |
| Includes grasshoppers, sawflies and caterpillars | |
| Beneficial Arthropods: | |
| Lady beetles - Coccinellids | 1.6 |
| Spiders and harvestmen | 1.1 |
| <u>Nabis ferus</u> | 0.8 |
| <u>Chrysopids</u> | 0.1 |

Of particular note is the great increase in the alfalfa weevil. In 1961, this weevil represented only 1.4 percent of all insects; in our 1962 fall survey it comprised 1.8 while in 1963 it rose to 38 percent.

The potato leafhopper (Empoasca fabae) thus far has not been particularly abundant. It was first noted in the area on May 16 in Hadley, Hampshire County.

Spittlebug nymphs were first noted on May 8. In Bristol and Berkshire Counties, heavy infestations have been found. In Hampden, Franklin and Hampshire Counties, their abundance was about average.

Alfalfa Weevil Parasite Established in Massachusetts

In May 1962, we released Bathyplectes curculionis in two alfalfa fields in Massachusetts. One site was in Franklin County, the other in Bristol County. The parasites were furnished to us by James Huggans and Dr. Carl Blickenstaff, Alfalfa Weevil Investigations, ARS, USDA.

This spring we obtained larvae of the alfalfa weevil from the two release sites. These were sent to James Huggans who reared them and determined the percent parasitism. From the site in Franklin County we obtained 5.6 percent parasitism and 2 percent from the Bristol County release.

This recovery of parasitized weevil larvae in 1963 demonstrated the ability of released Bathyplectes to attack the 1962 generation of weevil larvae and to survive the 1962-63 winter season in Massachusetts.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Peaches IN Colorado DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|--|--------|--|--|
| A. Pest or pest complex | | <u>Lygus bugs, peach twig borer, green peach aphid, two-spotted spider mite, a fruit-tree mite, peach silver mite, a leaf roller</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>7,320</u> | |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>165 bu.</u> | |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.00</u> | |
| E. <u>Acres</u> ^a needing control | No. | <u>6,920</u> | |
| F. <u>Acres</u> ^a treated | No. | <u>6,405</u> | |
| G. Reduction due to not treating where needed: | | | |
| H. Loss in yield, percent | % | <u>4.0</u> | |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>6.6 bu.</u> | |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>13.20</u> | |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>.10</u> | |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>3,399 bu.</u> | |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>12.00</u> | |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>76,860.00</u> | |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>6,798.00</u> | |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>51.50</u> | |
| Q. Combined control cost and losses, N + O + P | \$ | <u>83,709.50</u> | |

Comment: The major loss was due to the peach twig borer, two-spotted spider mite and peach silver mite.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING _____ Pears _____ (Commodity) | IN _____ Colorado _____ (State or District) | DURING _____ 1962 _____ (Year) |
|--|--|-----------------------------------|
| A. Pest or pest complex <u>Codling moth, two-spotted spider mite, pear leaf blister mite</u> | | |
| B. Number of <u> </u> acres ^a produced (From CRS) | No. | <u>580</u> |
| C. Average yield per <u> </u> acre ^a (From CRS) | Units/ | <u>382 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.00</u> |
| E. <u> </u> Acres ^a needing control | No. | <u>580</u> |
| F. <u> </u> Acres ^a treated | No. | <u>580</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>3.9</u> |
| I. Loss in yield, units per <u> </u> acre ^a , C x H | Units/ | <u>14.89 bu.</u> |
| J. Loss in yield, \$ per <u> </u> acre ^a , D x I | \$/ | <u>29.78</u> |
| K. Loss in quality, \$ per <u> </u> acre ^a | \$/ | <u>2.00</u> |
| L. Yield loss for all <u> </u> acres ^a , (E-F) x I | Units | <u>8,636 bu.</u> |
| M. Control cost, \$ per <u> </u> acre ^a | \$/ | <u>12.00</u> |
| N. Control cost for all <u> </u> acres ^a , F x M | \$ | <u>6,960.00</u> |
| O. Yield loss for all <u> </u> acres ^a , (E-F) x J | \$ | <u>17,272.40</u> |
| P. Quality loss for all <u> </u> acres ^a , (E-F) x K | \$ | <u>1,160.00</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>25,392.40</u> |

Comment: Mites caused considerable loss although controls were applied.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Sugar Beets (Commodity) | IN | Colorado (State or District) | DURING | 1962 (Year) |
|-----------|---|---|---------------------------------|--------|----------------|
| A. | Pest or pest complex | Army cutworm, seed-corn beetle, flea beetles, beet webworm, beet leafhopper, garden symphylan | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 170,000 | | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 16.2 ton | | |
| D. | Price ^b per unit (ton) ^c (From CRS) | \$/ | 14.00 | | |
| E. | Acres ^a needing control | No. | 35,816 | | |
| F. | Acres ^a treated | No. | 24,418 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | 1. | | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | .162 ton | | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | 2.27 | | |
| K. | Loss in quality, \$ per acre ^a | \$/ | negligible | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | 1,846.5 ton | | |
| M. | Control cost, \$ per acre ^a | \$/ | 2.00 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 48,836.00 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 25,873.46 | | |
| P. | Quality loss for all acres ^a , (E-F) x K | \$ | --- | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 74,709.46 | | |

Comment: Major loss occurred in western Colorado where beet webworm and beet leafhopper occurred in economic numbers.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Onions IN Colorado DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|---|---|---------------------|
| A. Pest or pest complex | <u>Onion thrips, onion maggot, onion bulb fly</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>9,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>287 cwt.</u> |
| D. Price ^b per unit (cwt.) ^c (From CRS) | \$/ | <u>3.00</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>9,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>7,906</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>1.09</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>3.1 cwt.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>9.30</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>negligible</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>3,391.4 cwt.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>6.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>47,436</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>10,174.20</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>---</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>57,610.20</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa hay IN New Mexico DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|----|--|--|-------------------|
| A. | Pest or pest complex | <u>Pea aphid, spotted alfalfa aphid, alfalfa caterpillar</u> | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>156,000</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>4.6 tons</u> |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | <u>30.00</u> |
| E. | <u>Acres</u> ^a needing control | No. | <u>24,000</u> |
| F. | <u>Acres</u> ^a treated | No. | <u>6,000</u> |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | % | <u>2</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>.092 ton</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>2.760</u> |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>.75</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,656 tons</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>5.25</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>31,500</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>49,680</u> |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>13,500</u> |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>94,680</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Gerald L. Nielsen, Entomologist

Date 2-8-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Cotton | IN | New Mexico | DURING | 1962 |
|-----------|---|---|---------------------|----------------|--------|
| | (Commodity) | | (State or District) | | (Year) |
| A. | Pest or pest complex | Bollworm, fleahoppers, lygus bugs, thrips | | | |
| B. | Number of acres ^a produced (From CRS) | | No. | 201,000 | |
| C. | Average yield per acre ^a (From CRS) | | Units/ | 657 lbs. | |
| D. | Price ^b per unit (lb.) ^c (From CRS) | | \$/ | .30 | |
| E. | Acres ^a needing control | | No. | 180,000 | |
| F. | Acres ^a treated | | No. | 130,000 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | 11 | |
| I. | Loss in yield, units per acre ^a , C x H | | Units/ | 72.27 lbs. | |
| J. | Loss in yield, \$ per acre ^a , D x I | | \$/ | 21.68 | |
| K. | Loss in quality, \$ per acre ^a | | \$/ | 2.00 | |
| L. | Yield loss for all acres ^a , (E-F) x I | | Units | 3,613,500 lbs. | |
| M. | Control cost, \$ per acre ^a | | \$/ | 12.00 | |
| N. | Control cost for all acres ^a , F x M | | \$ | 1,560,000 | |
| O. | Yield loss for all acres ^a , (E-F) x J | | \$ | 1,084,000 | |
| P. | Quality loss for all acres ^a , (E-F) x K | | \$ | 100,000 | |
| Q. | Combined control cost and losses, N + O + P | | \$ | 2,744,000 | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Gerald L. Nielsen, Entomologist

Date 2-8-63

September 20, 1928.

SB
923
C77
Ent

1928-29

1929-30

1930-31

1931-32

1932-33

1933-34

1934-35

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SORGHUM WEBWORM heavy on heads of pearl millet in northeast, southeast and south central Georgia; **WESTERN CORN ROOTWORM** adults building up on alfalfa adjacent to corn in Goshen County, Wyoming; **NORTHERN CORN ROOTWORM** adults quite prevalent in Franklin, Sandusky, Marion, Wood and Hardin Counties, Ohio; and **SORGHUM MIDGE** adults ranged 60-90 per 100 sweeps on sorghums in Soloman area of Graham County, Arizona. (p. 1106). **PEA APHID** light to heavy on alfalfa in areas of Arizona, building up in Maryland, and heavy on alfalfa in northwest Lower Peninsula of Michigan and in southwest Ohio. (p. 1107). **ALFALFA CATERPILLAR** adults abundant in alfalfa fields in areas of Arizona, New Mexico, Wyoming and Nebraska; populations much higher than last year in Minnesota; and larvae heavy locally in Oklahoma. (p. 1108).

Extreme buildup of **PEAR PSYLLA** on pears noted in Lane County, Oregon, first two weeks of September. (p. 1110). **WALNUT HUSK FLY** adults being trapped in many locations of California; some heavy infestations reported locally in both California and Utah. (p. 1111). **APHIDS** extremely heavy on pecans in Tallapoosa, Lee, Chambers, Baldwin and Mobile Counties, Alabama; many trees in Tallapoosa County up to 75 percent defoliated. (p. 1111).

POTATO TUBERWORM abundant in many potato fields throughout northwestern Ohio, and controls applied in Monroe County, Michigan. (pp. 1111, 1112). **SUGARBEET ROOT APHID** and **LEAF MINERS** damaging sugar beets locally in Ohio. (p. 1113).

BOLLWORMS continue major pest of cotton in many areas; **CABBAGE LOOPER** increasing on cotton in Graham, Pinal and Maricopa Counties, Arizona; and **COTTON LEAFWORM** continues damaging in areas of Texas and Oklahoma. (p. 1115). **COTTON LEAF PERFORATOR** continues to increase in Arizona, and **SALT-MARSH CATERPILLAR** increase rapid in areas of same State. Damage by **LYGUS BUGS** still noticeable to top bolls in Arizona, and populations potentially damaging in California. (p. 1116).

ELM LEAF BEETLE continues to defoliate elms in Oklahoma, Missouri and Kansas, and pest more widespread than in 1962 in Bernalillo County, New Mexico, though less damaging. (p. 1116). Most pin oaks half to two-thirds skeletonized by **OAK SKELETONIZER** locally in Trumbull County, Ohio. (p. 1117). Defoliation of white and Scotch pines by **INTRODUCED PINE SAWFLY** severe in Brainerd-Crosby area of Minnesota. (p. 1122).

MOSQUITOES remain nuisance over most of North Dakota, and populations continue annoying along Sacramento River and rice-growing areas of California; also causing much irritation in Yuma County, Arizona, and outbreak numbers reported in several Prince Georges County, Maryland, communities. (p. 1119). **HOUSE FLY** populations unusually high in California, and numerous in areas of Utah, Colorado, Michigan and Ohio around cattle. (p. 1120).

DETECTION

APPLE RUST MITE collected for first time in Maine. (p. 1110). New county records of significance were **EUROPEAN CORN BORER** in Macon County, Georgia (p. 1105); **WESTERN CORN ROOTWORM** in Pope, Yellow Medicine and Murray Counties, Minnesota (pp. 1106, 1122), and in Todd and Bennett Counties, South Dakota (p. 1106); **ALFALFA WEEVIL** in Sandoval County, New Mexico (p. 1108); **WALNUT HUSK FLY** in Madera County, California; and **ELM LEAF BEETLE** in Ottawa County, Kansas (p. 1116).

ADDITIONAL NOTES

See page 1122.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1119).

Estimated Losses and Production Costs Attributed to Insects and Other Arthropods Attacking Wheat, Corn for Grain and Sorghum in Kansas in 1962. (pp. 1125-1131).

Insects Not Known to Occur in the United States (Natal fruit fly (Ceratitis rosa Karsch)). (p. 1132).

Reports in this issue are for week ending September 13, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-SEPTEMBER TO MID-OCTOBER 1963

The Weather Bureau's 30-day outlook for the period mid-September to mid-October calls for temperatures to average above seasonal normals over the eastern half of the Nation, except near normal in the Tennessee Valley and over the Middle and South Atlantic States. Below normal temperatures are indicated for the western half of the country except near to above normal in southern portions. Precipitation is expected to exceed normal along the Atlantic Seaboard and over the north-west quarter of the Nation. Subnormal amounts are predicted for the Great Lakes region, Gulf States, and far Southwest. In unspecified areas rainfall should be near normal.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 16

Mild temperatures and abundant sunshine prevailed over most of the Nation on Monday, September 9. Some early morning fog covered parts of the Ohio River Valley and eastward, but this was mostly dissipated by midforenoon. Scattered thunderstorms produced light showers from Oklahoma to Nebraska. A few isolated thunderstorms occurred along the gulf in the afternoon. By Tuesday, a cold front was pushing across the Northeast, followed by cooler, less humid air. Typical summertime, afternoon thunderstorms built up in the western mountains and in the warm moist air along the gulf. Pressures fell over the middle of the Nation on Wednesday and early morning thunderstorms dumped generous rains over Iowa, northern Missouri, and some nearby areas. As the disturbance moved eastward, the rains spread to Wisconsin, Illinois, and the Lakes region. By Thursday, temperatures were tumbling in the Northern Border States and cloudy skies and thunderstorms covered the northeast quarter of the Nation. By the weekend, high pressure and scattered clouds prevailed over most of the eastern half of the Nation. An elongated low pressure area paralleled the Atlantic coast. This area intensified, causing cloudiness, moderate to heavy rain, and some strong winds from New England to the Carolinas. Weekend showers and thunderstorms also fell along the gulf coast in connection with a stationary front that stretched from Texas to northern Florida. (Continued on page 1114).

CEREAL AND FORAGE INSECTS

CORN EARWORM (*Heliothis zea*) - IDAHO - Infestations in sweet corn in southwest heavy, ranging 50-100 percent in individual fields. A blacklight trap operated within 100 yards of one field (about 85 percent infested) attracted no moths for most of nights in July and August, with a top catch of 9 for any 3 successive nights. (Scott, Bechtolt). ARIZONA - Larvae causing some damage to field corn in Yuma and Maricopa Counties; averaged 3 per plant in infested Maricopa County fields. (Ariz. Coop. Sur.). COLORADO - Larvae 2-10 per 10 ears of field corn in Montezuma, Larimer, Weld and Yuma Counties. Larvae leaving ears to pupate. In southeast, second brood of moths active. (Jenkins, Schweissing). NEBRASKA - A 5-percent infestation occurs in Lincoln County field corn. (Pruess). MICHIGAN - Early reports from blacklight trap catches indicate a rather general flight of adults in sweet corn areas of Lower Peninsula on evening of September 11; earlier collections light and spotty. This is first season during recent years when general flights did not occur in State early enough to coincide with silking of considerable late sweet corn acreage. Young larvae found infesting small percentage of a Monroe County sweet corn field September 9; reported very light in Wayne County. (Newman, Janes, Kidd). DELAWARE - Adult collections in blacklight trap remain high in Sussex County. (Burbutis). MARYLAND - No increase in eggs noted on soybeans in Dorchester and Wicomico Counties. Only light pod injury by small larvae occurred in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.). VIRGINIA - Local, medium larval infestation on soybeans in Carrsville, Isle of Wight County. Damaged pods average 4-5 per hill. This field more heavily infested than any other field checked in immediate area. (Stith, Sept. 6). GEORGIA - Light on peanuts in southeast, but heavy on heads of pearl millet in southeast and heavy on pods of soybeans in southeast and northeast. (Johnson). ALABAMA - Continues to cause serious damage to soybeans in Baldwin County; controls difficult. (Buttram, Boulter). ARKANSAS - Averaged 30 per 100 sweeps on alfalfa in Washington County. Of larvae collected from soybeans August 28-September 3 in Lonoke County, 1 was *H. virescens* and 128 *H. zea*. Twenty-nine larvae collected in Monroe County September 3 were all *H. zea*. Total of 121 larvae taken from soybeans in Desha County June 26-30 all *H. zea*. Collections during September of 1962 in southeast area were all *H. zea* (238 larvae). Only prior records of these two species on soybeans show 260 *H. zea* and 9 *H. virescens* collected during July-September 1952. (Ark. Ins. Sur.). Ranged 0-69 per 30 feet of row of soybeans in Lonoke County compared with 0-89 previous week. Twelve of 15 fields infested compared with 10 of 13 previous week. (Sharp). OKLAHOMA - Moderate, 5 per 10 sweeps, in Choctaw County (southeast) and 10 per 10 sweeps present in Tillman County (southwest). Ranged 1-6 per 10 sweeps in east central area alfalfa. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - GEORGIA - Light to moderate infestations in corn in Bibb, Peach, Houston and Macon Counties. This is first report for Macon County. (Brightwell). DELAWARE - Adult collections in blacklight trap in Sussex County remain high. (Burbutis). MICHIGAN - Egg masses, with a higher percentage hatched than unhatched, common in Macomb County research plots. Eggs, first instars and recent feeding injury evident in Ingham County. Some larvae found in sweet corn ears in southern counties; adults still being taken at blacklight traps. (Evans, Janes, Kidd, Newman). MINNESOTA - Stalk breakage very noticeable in west central district where infestations highest. (Minn. Ins. Rpt.). SOUTH DAKOTA - Development advanced to second and third instars in extreme northern areas. (Hintz). NEBRASKA - Infested 40 percent of corn ears in Lincoln County. (Pruess). Infestations ranged 25-60 percent of fourth and fifth-stage larvae in Fillmore and Saline Counties. (Bergman).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ARKANSAS - Larvae girdling stalks and boring below ground level in Washington County, northwest area; lodging showing up. (Ark. Ins. Sur.).

SOUTHERN CORNSTALK BORER (*Diatraea crambidoides*) - GEORGIA - Light to moderate infestations on corn in Bibb County. (Brightwell).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Larvae infesting less than one percent of corn ears in Lincoln County. (Pruess).

SORGHUM WEBWORM (Celama sorghiella) - GEORGIA - Heavy on heads of pearl millet in northeast, southeast and south central areas. (Ratcliffe, Johnson).

FALL ARMYWORM (Laphygma frugiperda) - NEBRASKA - One percent of corn ears infested in Lincoln County. (Pruess). WISCONSIN - Adults being caught in fair numbers in light trap at Middleton. (Wis. Ins. Sur.). GEORGIA - Light on peanuts in southeast. (Johnson).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MINNESOTA - Found for first time in Pope and Yellow Medicine Counties. (Minn. Ins. Rpt.). SOUTH DAKOTA - Observed in Todd and Bennett Counties; 48 of 65 counties now infested. (Hintz). NEBRASKA - Adults averaged 3 per 10 sweeps in Cedar County alfalfa. (Roselle). WYOMING - Adults building up in alfalfa adjacent to corn in Goshen County; averaged 21 per 100 sweeps. Only few adults found in corn fields. (Marks).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - Populations quite prevalent in Franklin, Sandusky, Marion, Wood and Hardin Counties. (Blair). WISCONSIN - This species believed responsible for considerable goosenecking of corn in Pepin County. Condition very uncommon in other areas of northwest, although one field with an estimated 90 percent goosenecking in Barron County had only D. undecimpunctata howardi adults present. (Wis. Ins. Sur.). NEBRASKA - Adults averaged 15 per 10 sweeps in Cedar County alfalfa. (Roselle).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NEBRASKA - Adults commonly found in alfalfa adjacent to corn in southeast; averaged 1 per 10 sweeps in Cedar County. (Roselle). NORTH DAKOTA - Adults found on roadside adjacent to cornfield near Ellendale; ranged 1-3 per sweep. (N. D. Ins. Sur.).

RICE WEEVIL (Sitophilus oryzae) - ALABAMA - One to 10 adults feeding in maturing grain sorghum heads, with lesser numbers in maturing corn, in Lee, Chambers, and Tallapoosa Counties. (McQueen).

SORGHUM MIDGE (Contarinia sorghicola) - ARIZONA - Adults ranged 60-90 per 100 sweeps in sorghums in Solomon area, Graham County. (Ariz. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - IDAHO - Aphids, probably this species, extremely abundant in most corn fields in southwest. (Scott). COLORADO - Very numerous on sorghum in research plots at U.S. Great Plains Field Station. (Hinze).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Continues to decrease in rice fields scouted regularly in Lonoke County; 2.4 adults and 0.3 nymph per 100 heads compared with 4 adults and 0.5 nymph previous week. Rice maturing, with some fields ready for harvest. (Sharp).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - ALABAMA - Considerable numbers, 1 per 5 feet of row, feeding on maturing grain sorghum in Tallapoosa County. This field has been damaged to some extent by lesser cornstalk borer (Elasmopalpus lignosellus), corn earworm (Heliothis zea), fall armyworm (Laphygma frugiperda) and an extremely high population of corn leaf aphid (Rhopalosiphum maidis). (McQueen).

BANKS GRASS MITE (Oligonychus pratensis) - KANSAS - Destroyed new stand of rye in Scott County, west central; moved from adjacent sorghum. (Gates).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Populations decreased on corn in all areas of Otero, Crowley, Pueblo, Larimer, Weld, Montezuma, Mesa, Montrose and Delta Counties. Some fields in Bent and Prowers Counties continue to have high populations. (Schweissing, Bulla, Jenkins).

GARDEN SYMPHYLAN (*Scutigerella immaculata*) - OREGON - Common under sweet corn in infested areas of Linn County; averaged 15-20 per shovel of dirt. (Rosenstiel).

PEA APHID (*Acyrtosiphon pisum*) - MARYLAND - Building up, ranging 25-200 per sweep, in some alfalfa in Dorchester and Frederick Counties. (U. Md., Ent. Dept.). MICHIGAN - Populations very high on alfalfa in northeast part of Lower Peninsula. (Janes). OHIO - Heavy on alfalfa in southwest; highest counts 700-1,500 per 50 sweeps in Clark County. (Lyon). MINNESOTA - Ranged 5-30 per sweep (average 20) on alfalfa in west central and central districts. (Minn. Ins. Rpt.). SOUTH DAKOTA - Generally present throughout areas surveyed. Low populations generally encountered except in irrigated areas of Butte County where counts averaged 2,500 per 100 sweeps on alfalfa. (Hintz). NEBRASKA - Light in Lancaster and Saline County alfalfa; ranged 0-25 per 10 sweeps. (Bergman). None found in Hall, Howard and Webster County alfalfa. Ranged 49-250 per 10 sweeps in counties bordering Kansas from Franklin west to Dundy. (Manglitz). MISSOURI - Ranged 3-21 (average 8) per sweep on alfalfa in north central area. (Munson, Thomas, Wood). WYOMING - Average per 100 sweeps in alfalfa 1,200 in Goshen County and 850 in Laramie County. (Marks). UTAH - Becoming more numerous on alfalfa in Slaterville area, Weber County. (Knowlton). NEW MEXICO - Generally light on alfalfa throughout State; little damage noted. (N. M. Coop. Rpt.). ARIZONA - Light to moderate increases continue in Graham County. Heavy infestation found in Maricopa and Pinal Counties; 7,000-12,000 per 100 sweeps. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - COLORADO - Ranged 0-1,000 per 100 sweeps in La Plata and Montezuma Counties. In Larimer, Weld and Yuma Counties, counts 40-100 per 100 sweeps. In Bent, Otero, Crowley and Pueblo Counties, populations decreased and vary 100-2,000 per 100 sweeps. Populations as high as 10,000 per 100 sweeps in dry areas of Prowers County. (Jenkins, Schweissing). NEW MEXICO - Generally light on alfalfa throughout State. (N. M. Coop. Rpt.). TEXAS - Ranged 30-40 per sweep on alfalfa in Yoakum County; predators abundant. (Tex. Coop. Rpt.; Hanson). OKLAHOMA - Moderate infestation of 600 per 100 sweeps noted locally in Tillman County, southwest; honeydew present. Lighter counts, 25-75 per 10 sweeps, observed in central and southwest areas. Counts per 10 sweeps on alfalfa in east central and southeast areas 50-75 and 10-300, respectively. (Okla. Coop. Sur.). ARKANSAS - Higher than normal numbers present in northwest area; 1,000-1,500 per 100 sweeps collected with 15-inch net. (Ark. Ins. Sur.). NEBRASKA - Counts 4-22 per 10 sweeps in southeast. (Bergman). Averaged 6-7 per 100 sweeps in Hall and Howard Counties, and ranged 5-78 per 100 sweeps in counties bordering Kansas from Franklin west to Hitchcock, with Dundy County having 474 per 100 sweeps. Populations down from one month ago. A pathogenic fungus found on aphids in Franklin County. (Manglitz). SOUTH DAKOTA - Collected in Bon Homme and Gregory Counties on alfalfa; counts 520 and 64 per 100 sweeps, respectively. Not observed in fields as far west as western edge of Tripp County where pest present earlier in year. Latter situation probably due to harvesting of alfalfa for seed and lack of regrowth. (Hintz). VIRGINIA - Three specimens detected in one 7-15 square foot sample of alfalfa at Blacksburg, Montgomery County. Both alates and apterous forms present. (Pienkowski).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Infestations increased slightly in Graham, Pinal, Maricopa, Pima and Yuma Counties; averaged 800 per 100 sweeps on alfalfa. (Ariz. Coop. Sur.). UTAH - Has been numerous in "Dixie" area of Washington County again this summer. (Knowlton). OKLAHOMA - Light on alfalfa in east central and central areas, with higher counts of 80 per 100 sweeps noted in Choctaw County, southeast. Also light on soybeans in east central area. (Okla. Coop. Sur.). ARKANSAS - Ranged 0-7 per 30 feet of row of soybeans in 15 fields checked in Lonoke County compared with 0-10 previous week. (Sharp). ALABAMA - Nymphs and adults extremely heavy on small alfalfa planting in Tallapoosa County. (McQueen).

LYGUS BUGS (*Lygus* spp.) - IDAHO - Both adults and nymphs increasing in some seed alfalfa fields in Canyon County; 40-60 per sweep not uncommon. (Waters). WYOMING - Adults averaged 40 per 100 sweeps in Goshen and Laramie County alfalfa. (Marks). ARIZONA - Averaged 360 per 100 sweeps in seed alfalfa fields in Yuma

County. (Ariz. Coop. Sur.). NEW MEXICO - Relatively light in State; range per 25 sweeps 5-8 in Sandoval County and 4-6 in Chaves County. (N. M. Coop. Rpt.). NORTH DAKOTA - L. lineolaris adults 1-4 per sweep in southeast area alfalfa. (N. D. Ins. Sur.). MICHIGAN - L. lineolaris low on alfalfa in northeast Lower Peninsula. (Janes).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults averaged 14 per 100 sweeps on Goshen and Laramie County alfalfa. (Marks). MICHIGAN - Low on alfalfa in northeast part of Lower Peninsula. (Janes).

MEADOW SPITTLEBUG (Philaenus spumarius) - MICHIGAN - Low on alfalfa in northeast part of Lower Peninsula. (Janes).

POTATO LEAFHOPPER (Empoasca fabae) - NEBRASKA - Counts 0 in Hall County and 17 per 100 sweeps in Howard County alfalfa. Counts in counties along Kansas border from Webster west to Dundy 0-33 per 100 sweeps in alfalfa. (Manglitz).

ALFALFA WEEVIL (Hypera postica) - COLORADO - Adults appearing in some Larimer County fields. (Jenkins). NEW MEXICO - One adult found in 3 fields swept in Sandoval County. (N. M. Coop. Rpt.). First ARS record for county. ALABAMA - Few specimens swept from alfalfa in Tallapoosa and Chambers Counties. (McQueen). MARYLAND - Larvae ranged 2-8 per sweep, with some adults present, in 9 fields of alfalfa checked in Frederick County; larvae absent from alfalfa at Linkwood, Dorchester County. (U. Md., Ent. Dept.).

BLISTER BEETLES - MINNESOTA - Unspecified species averaged 6 per sweep in alfalfa with high grasshopper infestations in west central district. Feeding confined to alfalfa blossoms. (Minn. Ins. Rpt.). OHIO - Infestations of Epicauta pennsylvanica observed in alfalfa in Seneca County; also plentiful at Troy, Miami County. (Brown, Blair, Arnold, Holdsworth). ALABAMA - E. pestifera, E. pennsylvanica and Epicauta sp. feeding heavily locally on alfalfa, kudzu and common lespedeza in Tallapoosa and Lee Counties. Epicauta sp. appearing rather heavy near lights in Sumter County. (Buttram, Barwood et al.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Ranged 3-8 pe. 25 sweeps on alfalfa in Sandoval County. (N. M. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Large adult flights continue in Graham, Maricopa and Pinal Counties. Larval counts continue to increase; 100-400 per 100 sweeps in Graham County and 500-600 per 100 sweeps in Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Adults abundant in Chaves and Eddy County alfalfa. (N. M. Coop. Rpt.). OKLAHOMA - Heavy populations reported present in localized area of Choctaw County, 125 per 10 sweeps. Only light larval counts, but considerable adult activity, noted in Sequoyah and Muskogee Counties, east central area. Light, 3 per 10 sweeps, noted in Tillman County, southwest. (Okla. Coop. Sur.). NEBRASKA - Adult activity noticeable in Antelope and Boone Counties. (Bergman). WYOMING - Large flights of adults noted in Goshen and Laramie County alfalfa; larvae averaged 16 per 100 sweeps. (Marks). MINNESOTA - Populations much higher than in 1962; average 3 per sweep in west central and central districts. (Minn. Ins. Rpt.). ILLINOIS - Fairly abundant, 2 per sweep, in some fields of alfalfa in east-southeast and west-southwest districts. (Ill. Ins. Rpt.). MARYLAND - Averaged 1 per 10 sweeps on alfalfa near Linkwood, Dorchester County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - MISSOURI - Ranged 0-9 per 10 sweeps on soybeans and alfalfa in northwest. (Munson, Thomas, Wood). ILLINOIS - Varied 0-2 per sweep in clover and alfalfa in east-southeast and west-southwest districts. (Ill. Ins. Rpt.). OKLAHOMA - Light on alfalfa and soybeans in east central area; also light on alfalfa in Grady County, central area. (Okla. Coop. Sur.). ARKANSAS - Ranged 0-109 per 30 feet of row of soybeans in 15 fields checked in Lonoke County compared with 0-66 previous week. Eight of 15 fields checked infested compared with 12 of 13 previous week. (Sharp).

- ALFALFA LOOPER (Autographa californica) - UTAH - Populations low in northern and central areas. (Knowlton).
- LESPEDEZA WEBWORM (Tetralopha scortealis) - ALABAMA - Feeding on serecia lespedeza and Kobe lespedeza in Lee County. (Barwood).
- A LEAF ROLLER (Platynota stultana) - ARIZONA - Averaged 150 per 100 sweeps on alfalfa in Yuma Valley area, Yuma County. (Ariz. Coop. Sur.).
- WEBWORMS (Loxostege spp.) - NEBRASKA - Adult activity very common in southeast area alfalfa. Counts 3-8 per square yard in some fields. Larvae in Antelope and Boone Counties ranged 5-25 per 10 sweeps. (Bergman). MARYLAND - Larvae averaged 2 per 10 sweeps on alfalfa at Linkwood, Dorchester County. (U. Md., Ent. Dept.).
- SPIDER MITES - VIRGINIA - Continue to damage forage crops on Eastern Shore. (Hofmaster). IDAHO - Tetranychus spp. causing damage to seed alfalfafield north of Parma; adults 2-4 per leaflet, eggs numerous. (Waters).
- MEXICAN BEAN BEETLE (Epilachna varivestis) - OHIO - Light to moderate damage observed on soybeans near Friendship, Scioto County, south central area. Both late instars and newly emerged adults present. (Wells, Lyon). GEORGIA - Light to moderate on soybeans in northeast and southeast areas. (Johnson).
- BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adults caused conspicuous foliage injury to some late soybeans in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.). ARKANSAS - Ranged 0-27 per 30 feet of row of soybeans in 15 fields checked in Lonoke County compared with 3-33 previous week. (Sharp).
- VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Light to moderate on soybeans in southeast and northeast areas. (Johnson). FLORIDA - Collected on soybean at Gainesville, Alachua County. (Mead).
- RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Moderate, 27 per 100 terminals, observed on peanuts in Marshall County. (Okla. Coop. Sur.).
- A LOOPER (Pseudoplossia includens) - FLORIDA - Collected on soybean at Gainesville, Alachua County. (Mead).
- CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light to moderate on soybeans in southeast and northeast areas. (Johnson). ALABAMA - Continues to cause serious damage to soybeans in Baldwin County; controls difficult. (Buttram, Bouler). OKLAHOMA - Ranged 1-10 per 10 sweeps on alfalfa in Choctaw County. (Okla. Coop. Sur.).
- WHITEFLIES - MARYLAND - Undetermined species abundant in many soybean fields in Dorchester and Wicomico Counties. (U. Md., Ent. Dept.).
- STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - MARYLAND - Populations declined rapidly in several previously heavily infested soybean fields in Wicomico County. (U. Md., Ent. Dept.).
- GREEN JUNE BEETLE (Cotinis nitida) - ARKANSAS - Larvae destroyed a new seeding of fescue and brome grass in Washington County. Infestation treated and field reseeded. (Ark. Ins. Sur.).
- A TWO-LINED SPITTLEBUG (Prosapia bicincta) - GEORGIA - Heavy on St. Augustine grass in Waynesboro, Burke County. (Fortson).
- SOD WEBWORMS (Crambus spp.) - NEBRASKA - Adult activity increased very much in Lincoln (Lancaster County) during period September 8-12. (Bergman). VIRGINIA - Severly damaging lawns locally in Rockbridge and Henry Counties. (Tarpley, Craun, Pollard).

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Causing moderate, local damage to Bermuda grass lawns in Hockley County. (Tex. Coop. Rpt.; Hanson).

GRASSHOPPERS - MINNESOTA - Egg laying by Melanoplus femurrubrum, Melanoplus differentialis and M. bivittatus observed in central and west central districts. High infestations observed along roadsides in Lac qui Parle County. Heavy margin damage to corn noted in some fields, due principally to M. differentialis. Fungus disease, affecting primarily M. differentialis, widespread in west central district. (Minn. Ins. Rpt.). WISCONSIN - Grasshoppers, primarily M. femurrubrum, continue to damage crops. Considerable feeding on corn observed in few fields in northwest. Feeding on snap beans reported from Portage County and on flower beds in Walworth County. (Wis. Ins. Sur.). ILLINOIS - Annual adult grasshopper survey completed. In general, moderate populations in northern areas and light numbers elsewhere. (Ill. Ins. Rpt.). ALABAMA - Grasshopper intensity increased throughout State, with Schistocerca americana and M. differentialis noted in Clay County on grasses and legumes. (Barwood et al.).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - RHODE ISLAND - Larval infested apples noted in home orchards in suburban areas in diverse parts of State. (Mathewson). MICHIGAN - Larvae caused more injury to blueberries in 1963 than in other recent years. No adults trapped in Berrien County since September 1; few adults still taken in Ottawa County. (Burger). In apple orchards in southwest, adults not trapped recently. Specimens collected from crab apples on Michigan State University campus on September 11 showed 66 males and 27 females. Several pairs observed mating; females contained eggs and were ovipositing. Collection made in one hour with aspirator. (Dowdy).

WOOLLY APPLE APHID (Eriosoma lanigerum) - OHIO - Light on apple trees near Wilmington, Clinton County (southwest). No economic damage estimated. (Lyon). COLORADO - Very numerous on apple trees in Arapahoe County. (Hantsbarger). NEW MEXICO - Light on apple trees at Rinconado, Rio Arriba County. (N. M. Coop. Rpt.).

PEAR PSYLLA (Psylla pyricola) - OREGON - Extreme buildup on pears in Lane County first 2 weeks of September. (Tinker).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Defoliating apple trees in Hondo Valley, Lincoln County; also nuisance to pickers harvesting fruit. (N. M. Coop. Rpt.). GEORGIA - Light to moderate on pecans in northeast and southeast areas. (Johnson).

SPOTTED CUTWORM (Amathes c-nigrum) - OREGON - Specimens attacking pear tree leaves in Jackson County in July reared and determined this species. (Larson).

CODLING MOTH (Carpocapsa pomonella) - OHIO - Injury appears very low in 4 southern commercial orchards. (Forsythe).

APPLE RUST MITE (Aculus schlechtendali) - MAINE - Specimens collected in Winterport, Waldo County, on July 18; this is a new State record. (Boulanger).

SPIDER MITES - OREGON - Buildup of Tetranychus telarius heavy on sour cherries in Lane County; early defoliation of many trees noted. (Larson). NEW MEXICO - Caused severe damage to foliage of apple trees in Hondo Valley, Lincoln County, and Espanola Valley, Rio Arriba County; species probably T. mcdanieli. (N. M. Coop. Rpt.). OHIO - Panonychus ulmi bronzed occasional tree in southern orchards; occurred later than in 1962. (Forsythe).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Seventh bait spray application of season nearing completion; survey activities remain normal with approximately 3,000 traps in service in State. No specimens recovered. (Cal. Coop. Rpt.).

A LEAFHOPPER (Homalodisca coagulata) - FLORIDA - Collected on Citrus sp. at Dade City, Pasco County (Williams, Sellers, Aug. 28) and on trifoliolate orange at Gainesville, Alachua County (Mead).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Heavy on citrus in nursery in Yuba City, Sutter County. (Cal. Coop. Rpt.).

BLUEBERRY BUD MITE (Aceria vaccinii) - NEW JERSEY - Caused moderate to severe damage during past season, particularly in Pemberton area, Burlington County, to Weymouth and Rancocas varieties. (Ins.-Dis. Newsltr., Sept. 10).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Third seasonal application of insecticide in Kerman area completed; 1 additional treatment scheduled for late September. Unless additional specimens found, treatment will not be resumed in 1964; no larval forms taken since 1961. Surveys in Fresno County repeated for fourth time this year with negative results. In Alameda County, special survey attention given to areas east of Livermore where single, but new, infestation found. Entire valley now covered for third time; fourth and final treatment scheduled for week of September 14. (Cal. Coop. Rpt.). UTAH - Caused only local damage this year in parts of "Dixie" area of Washington County. (Knowlton).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - ALABAMA - Infestations considerable on grapes in Lee and Chambers Counties. (McQueen).

GRAPE LEAF FOLDER (Desmia funeralis) - KANSAS - Folding 50 percent or more of leaves of untreated grapes in Doniphan County area (northeast). (Eshbaugh, Sept. 4).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Occurring in yard and commercial walnuts locally in Yolo County; orchard in West Sacramento area quite heavily infested. Trapping of adults continues in many locations over State. Some infestations in commercial walnuts now showing in Sacramento Valley areas. Taken for the first time in Madera, Madera County. (Cal. Coop. Rpt.). UTAH - Severe in Brigham City walnuts and in some nearby localities. Maggots in peaches at Brigham City probably this species. (Knowlton, Allred).

A FALSE POWDER-POST BEETLE (Xylobiops basilaris) - ALABAMA - Numerous on limbs 1.5-inches and under on injured pecans. Branches being circled internally in Lee and Tallapoosa Counties. Resulting damage appears as though sawed off with entrance hole as only exterior damage noted. (McQueen).

A WEEVIL (Brachyrhinus cribricollis) - CALIFORNIA - Medium in almond fruit in Chico, Butte County. (Cal. Coop. Rpt.).

APHIDS - ALABAMA - Melanocallis caryaefoliae and Monellia spp. extremely heavy in Tallapoosa, Lee, Chambers, Baldwin and Mobile Counties on pecans. Many trees in Tallapoosa County being defoliated up to 75 percent. (Webb, Bice, Eden, et al.). NORTH CAROLINA - Longistigma caryae collected on pecan trees in Davidson County. (Johnson, Robertson).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Nymphs and adults light on pecan trees in nursery in San Diego, San Diego County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - OHIO - Abundant in many potato fields throughout northwestern area, (Wagner). MICHIGAN - Excellent control obtained in field originally found infested in Monroe County; very few adults and practically no larvae can be found in field heavily infested in early August. At least 5 farms in southern Monroe County now known to harbor light to moderate

infestations; farmers in area applying control measures. Larvae infesting tomatoes in Samaria area of county. A previous infestation in State is indicated by adult specimens in the Michigan State University Entomology Museum labeled from Bay County in 1932 by Professor Hutson. (Janes, Laser, Newman). UTAH - None encountered in State to date this season. (Knowlton, Sjoblom, Huber).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Adults increasing and egg depositions on tomato leaves increasing in Bent, Otero, Crowley and Pueblo Counties. Eggs average 1.5 per 100 leaves per field. (Schweissing).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Heavy in tomato plantings in Sunnyside, San Diego County, and damaging fruit in Niland, Imperial County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Several very heavy infestations noted on peppers in areas of Sussex County. (Burbutis). MICHIGAN - Colonies of nymphs and adults very numerous on potatoes, peppers and tomatoes in Monroe, Wayne, Macomb and Ingham Counties. (Laser, Kidd, Janes, Evans). COLORADO - Increase on potatoes in Weld County apparently halted due to maturing of vines. (Jenkins).

POTATO APHID (Macrosiphum euphorbiae) - RHODE ISLAND - Heavy on potatoes in field in Slocum, Washington County. (Mathewson, Stessel).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Found on potatoes in Montezuma County; recent rains created conditions favorable for pest in area. (Felton).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - RHODE ISLAND - Adults converging on homes near fields in Portsmouth, Washington County, and at Middletown, Newport County. (Peabody, Mathewson).

A LEAF MINER FLY (Liriomyza munda) - CALIFORNIA - Damage medium on tomato leaves in tomato plantings in Sunnyside, San Diego County. (Cal. Coop. Rpt.).

TOMATO RUSSET MITE (Aculus lycopersici) - CALIFORNIA - On tomato plantings generally in Yolo, San Joaquin and Sacramento Counties. (V. Strombler).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Heavy on late commercial snap beans at Mardela Springs, Wicomico County. (U. Md., Ent. Dept.). KANSAS - Causing severe damage to many late-planted snap beans in home gardens in Doniphan County area (northeast); complete destruction noted in some gardens. All stages present. (Eshbaugh, Sept. 4). NEW MEXICO - Completely defoliating many plantings of pinto and pole beans in Belen, Valencia County. (N. M. Coop. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adults caused light to moderate damage to late commercial snap beans at Mardela Springs, Wicomico County. (U. Md., Ent. Dept.).

COWPEA CURCULIO (Chalcodermus aeneus) - ALABAMA - Damaging snap beans in Lauderdale County. (Wagnon).

LIMA-BEAN VINE BORER (Monoptilota pergratialis) - MARYLAND - Larvae causing conspicuous injury to research plot lima beans at Salisbury, Wicomico County. (U. Md., Ent. Dept.).

COTTON SQUARE BORER (Strymon melinus) - ALABAMA - Damaging snap beans in Lauderdale County. (Wagnon).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Range 1-2 per sweep on late lima beans in eastern Sussex County. (Burbutis). MARYLAND - Light to heavy on late commercial snap beans in northern Wicomico County. (U. Md., Ent. Dept.).

GREEN STINK BUG (Acrosternum hilare) - VIRGINIA - All stages light on beans in home garden in Gate City, Scott County (Tarpley, Rich); damaged butterbeans earlier in home garden in Kenbridge, Lunenburg County (Tarpley, Powers, Sept. 3).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - IDAHO - Defoliated some home garden beans in Arena Valley area. (Waters).

SUGAR-BEET ROOT APHID (Pemphigus betae) - OHIO - Damage spots, up to 0.5-acre, noted in Sandusky County. (Blair).

SPINACH LEAF MINER (Pegomya hyoscyami) - WYOMING - Small numbers of larvae present in sugar beet fields of Goshen County. (Marks).

LEAF MINERS - OHIO - Unidentified species moderate to heavy on sugar beets in Seneca County (north central); approximately 20 percent of leaf surface damaged in 15-acre field. (Blair).

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Adult catches increasing in black-light traps. (Newman). NEW MEXICO - Continues problem on cabbage at Corrales, Sandoval County. (N. M. Coop. Rpt.).

IMPORTED CABBAGEWORM (Pieris rapae) - MICHIGAN - Larval damage moderate to severe in untreated research cole crop plots in Clinton County. (Evans).

CABBAGE APHID (Brevicoryne brassicae) - RHODE ISLAND - Infested brussels sprouts in Riverdale, Providence County; evidence of abundant hymenopterous and dipterous parasites and predators. (Mathewson).

CELERY LEAF TIER (Udea rubigalis) - IDAHO - Probably this species attacking celery and table beets near Parma. (Scott).

SYMPHYLANS - OHIO - Unidentified species present in lettuce field at Hartsville, Stark County. (Brooks, Holdsworth).

SWEETPOTATO LEAF ROLLER (Pilocrocis tripunctata) - ALABAMA - Damaging sweetpotatoes in Escambia County. (Vickery, Buttram).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Heavy on vines of sweetpotatoes in Bacon County. (Camp, Sept. 3).

A LEAFHOPPER - GEORGIA - Heavy on vines of sweetpotatoes in Tift, Turner and Irwin Counties. (Goolsby, Sept. 6).

Insect Conditions on Eastern Shore of Virginia - CUTWORMS, FALL ARMYWORM (Laphygma frugiperda) and FLEA BEETLES (Epitrix spp.) damaging young collards, kale, spinach, turnips and mustard greens. Some CABBAGE LOOPER (Trichoplusia ni) damage noted on fall potatoes. SPIDER MITES continue damage to vegetable crops although cooler weather reduced pace somewhat; inspection of borders urged. (Hofmaster).

STRAWBERRY ROOT PESTS - MICHIGAN - Colonies of Aphis forbesi and a mealybug, tentatively identified as Rhizococcus falcifer, infesting strawberry roots near Keeler, Van Buren County. (Wooley, Carpenter).

CUTWORMS - MINNESOTA - Undetermined species feeding on strawberries near Minneapolis; eggs presumably carried in on mulch. Late hatch probably due to heavy mulch forming insulation which did not permit hatching at usual time. About 10 percent of crop lost. (Minn. Ins. Rpt.).

A WEEVIL (Trachyphloeus bifoveolatus) - OREGON - Adults collected in strawberry patch near Estacada, Clackamas County, August 20; no larvae present. (Rosenstiel).

EUROPEAN RED MITE (Panonychus ulmi) - MINNESOTA - Heavy on strawberries in northern area; occurrence unusual for area. (Minn. Ins. Rpt.).

CYCLAMEN MITE (*Steneotarsonemus pallidus*) - MINNESOTA - Continues most troublesome problem on everbearing strawberries; yield reduced and market quality low because of deformed, seedy and nubbin berries. (Minn. Ins. Rpt.).

TOBACCO INSECTS

SUCKFLY (*Cyrtopeltis notatus*) - VIRGINIA - All stages light to medium in 7-acre field of tobacco in Pittsylvania County (Dominick, Sept. 3); heavy in field of tobacco in Greensville County (Rowell, Flippen, Sept. 4). NORTH CAROLINA - Adults noted in Person County. (Reams, Robertson).

GREEN PEACH APHID (*Myzus persicae*) - OHIO - Light on tobacco plants in southern area; no economic damage apparent. (Lyon).

Weather of the week ending September 16 (continued from page 1104)

Rainy weather also prevailed over the Northwest from the Pacific Ocean to the Rocky Mountains. A few scattered thunderstorms sprinkled spots in the desert areas. Weekend thundershowers were general over the Northern Plains. They produced mostly light amounts of rain. However, from central Nebraska came reports of heavier amounts. One report, from a vicinity southwest of North Platte, stated that 7 to 8 inches of rain had fallen. Temperatures averaged above normal from the Pacific Ocean eastward to the Northern Plains, the Central Plateau, the Southern Plains and along the Gulf of Mexico. Temperatures averaged below normal from Iowa and Missouri northeastward to New England and southeastward to Georgia. Temperature departures ranged from +7° at Boise, Idaho, and Sheridan, Wyoming, to -7° at Binghamton, New York, and Burlington, Vermont. The below normal temperatures were produced by the vigorous cold front that pushed southward across the eastern United States on Friday, dropping temperatures to 32° or lower at scattered localities from North Dakota, Minnesota, and Iowa, eastward to New England, to the 40's as far south as the Ohio River, and to the 50's as far south as the Carolinas. In general, above normal temperatures occurred early in the week followed by much colder on Friday and Saturday. By Monday, September 16, a warming trend had started over much of the Nation. Rainfall was generally light from the Pacific Ocean to the Missouri River. Some exceptions were in northwestern Oregon and in central Texas, where weekly totals exceed 1 inch, and from Oklahoma to central Nebraska, where several inches of rain fell over the weekend. Amounts of an inch or more were scattered over the eastern half of the Nation. A few eastern localities received generous rains from thunderstorms. Several inches fell along the Virginia coast.

Hurricane Cindy developed on September 16 in the northwestern Gulf of Mexico about 140 miles south-southeast of Galveston, Texas. Moving slowly toward the north and north-northwest, the ill-defined eye of the storm area passed inland about 8 a.m., c.s.t., Tuesday, September 17, midway between Port Arthur and Galveston. Gale force winds and high tides were reported from the extreme upper Texas and west Louisiana coastal areas, with winds of hurricane force locally in a few squalls. Heavy rains were spreading northward through extreme eastern Texas and the western and northern portions of Louisiana on Tuesday morning. (Summary supplied by U.S. Weather Bureau).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - MISSISSIPPI - Isolated infestations present in late fruiting cotton in delta region. (Ouzts). ALABAMA - Full-grown larvae and pupae found in 1-5 larger top bolls in cotton fields in Tallapoosa, Shelby and other counties, indicating loss of lint; chemical controls probably stopped 1-2 applications short of good, economic production practices. (Henderson). ARKANSAS - Weevil activity unchanged during past 3 weeks. Boll protection is chief concern at present. (Ark. Ins. Sur.). TEXAS - Light to moderate infestations reported on cotton in Collingsworth, Kent, Childress, Garza, Briscoe and eastern portions of Floyd and Crosby Counties. Heaviest infestations in Dickens County. Increased movement of weevils within infested counties noted. (Rummel). OKLAHOMA - Continues generally light in areas checked in southeast, south central and southwest sections. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - GEORGIA - Heavy in cotton bolls in many fields in northeast and southeast areas. (Johnson). MISSISSIPPI - Isolated infestations noted in late fruiting cotton in delta region. (Ouzts). ALABAMA - Cotton active on cotton although potential damage to crop almost over. (McQueen). ARKANSAS - Activity decreased, compared with previous week. Green, succulent fields and irrigated cotton should be watched; eggs and larval activity high in these fields. Moth flight continues heavy; many moths being attracted to soybeans; activity remains high in green cotton. Larvae collected from cotton during late August determined as 260 *H. zea*, 11 *H. virescens*; those collected during early September determined as 224 *H. zea* and 17 *H. virescens*. (Ark. Ins. Sur.). OKLAHOMA - Heavy infestations of 35-40 percent continue in Choctaw County (southeast), with lighter counts of 10-18 percent in Tillman County (southwest). (Okla. Coop. Sur.).

BOLLWORM (*Heliothis zea*) - TEXAS - Light to moderate on cotton in Wheeler, Collingsworth, Dawson, Swisher, Lubbock, Garza, Lamb, Motley, Kent and Hall Counties; moderate to heavy in Howard, Childress and Dickens Counties. Good control noted in areas where growers conducting recommended, well-timed spray programs. (Rummel). NEW MEXICO - Generally light to medium in cotton-growing areas of State. Most cotton maturing; larval numbers decreasing. (N. M. Coop. Rpt.). CALIFORNIA - Reported in many Kern County cotton fields; however, populations generally low. (Leigh, Sept. 5). ARIZONA - Continues high in Graham, Pinal and Maricopa Counties. Averaged 2-5 larvae per cotton plant. Expected peaks have not occurred in Yuma County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEW MEXICO - Young larvae present in most all fields checked, but predators and virus keeping numbers below damaging levels. (N. M. Coop. Rpt.). ARIZONA - Populations continue to increase in Graham, Pinal and Maricopa Counties. Counts per 100 sweeps ranged 40-80 in Graham County and 35-40 in Pinal and Maricopa Counties. (Ariz. Coop. Sur.). CALIFORNIA - Present in most cotton fields in Kern County, particularly where cotton is rank and succulent. Most infestations do not appear to require controls. (Leigh, Sept. 5).

BEE T ARMYWORM (*Spodoptera exigua*) - ARIZONA - Ranged 4-5 per 25 plants in cotton fields in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - ARKANSAS - Larvae increasing and egg deposition heavy on cotton at University farm, Washington County. (Ark. Ins. Sur.). OKLAHOMA - Building up on succulent cotton in Beckham County, west central. Heavy in irrigated cotton in Greer County, southwest. Completely defoliated untreated experimental plot in Stillwater area, Payne County, north central. (Okla. Coop. Sur.). TEXAS - Infestations present throughout many high and rolling plains counties and extend into panhandle area. Infestations light to moderate in Lamb, Scurry, Borden, Hockley, Terry and Kent Counties; moderate to heavy in Collingsworth, Dawson, Lubbock, Howard, Garza, Hall and Childress Counties. (Rummel). NEW MEXICO - Generally light, spotted infestations reported in Artesia area, Eddy County. (N. M. Coop. Rpt.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Continues to increase in Pinal, Maricopa and Yuma Counties; severe damage noted in Stanfield and Coolidge areas in Pinal County and in Rainbow Valley and Goodyear areas of Maricopa County. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Rapid increases noted in Maricopa, Pinal, Graham and Yuma Counties. Ranged 6-8 per 25 plants in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - ARIZONA - Light damage observed to squares and leaves in Pinal County; averaged 3 larvae per 25 plants. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Damage still noticeable to top bolls in Pinal, Maricopa and Graham Counties. Averaged 20-25 percent damaged bolls in areas of Pinal and Maricopa Counties. (Ariz. Coop. Sur.). CALIFORNIA - Present in many Kern County cotton fields; some infestations as high as 11 adults and 16 nymphs per 50 sweeps. Boll damage can result from populations as high as these. (Leigh, Sept. 5).

APHIDS - ARKANSAS - Building up in some fields. (Ark. Ins. Sur.). ARIZONA - Aphis gossypii continues to damage terminal growth in Graham, Pinal and Maricopa Counties. Ranged 200-300 per 100 sweeps. (Ariz. Coop. Sur.). CALIFORNIA - Aphids evident in most cotton fields and sufficiently numerous to justify controls in some instances. (Leigh, Sept. 5).

WHITEFLIES - CALIFORNIA - Abundant in some cotton fields in northern Kern County. Where honeydew is falling on fiber and will result in growth of sooty mold, control should be attempted. (Leigh, Sept. 5).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Light to moderate on cotton in Webbers Falls area, Muskogee County, east central. No damage expected, as cotton maturing rapidly. (Okla. Coop. Sur.). CALIFORNIA - Evident in many cotton fields throughout San Joaquin Valley. Control this late would not be practical. (Leigh, Sept. 5).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

ZIMMERMAN PINE MOTH (Diorycytria zimmermani) - MICHIGAN - Adult emergence practically complete in Ottawa County; this about one week later than in 1962. Eggs found on Scotch pine since August 27 in same county. (Carlson, Butcher).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - RHODE ISLAND - Very heavy infestation noted on property in Riverside, Providence County. (Cartier).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEW MEXICO - Infestation not quite as heavy as last year; however, more widespread than in 1962 on elms in Bernalillo County. (N. M. Coop. Rpt.). OKLAHOMA - Continues to cause widespread damage over State. Entering homes in Hughes County, east central. (Okla. Coop. Sur.). KANSAS - Completely defoliated some elms in Ottawa County, north central. This is a new county record. (Marvin, Sept. 9). MISSOURI - Defoliation of elms reported from areas throughout State. Present larval generation mostly full grown in northern areas. (Munson, Thomas, Wood).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - OHIO - Populations appear to be leveling off in southern counties. Counts substantially lower in forages, cereals and weedy plants. (Lyon).

TWIG GIRDLER (Oncideres cingulata) - KANSAS - Girdled elm branches dropping in Dickinson and Riley Counties. (Charlton, Thompson, Sept. 5).

- LOCUST BORER (Megacyllene robiniae) - OHIO - Adults abundant on locust trees and goldenrod near Hillsboro, Highland County, southeast. (Lyon).
- TWIG PRUNERS - MISSOURI - Numerous reports of limbs pruned off elms in north-west area. (Munson, Thomas, Wood).
- A TWIG BORER (Amphicerus cornutus) - CALIFORNIA - Adults medium in maple twigs at Bakersfield, Kern County. (Cal. Coop. Rpt.).
- A LEAF MINING BEETLE - COLORADO - Damaging foliage of cottonwood trees in Boulder County. (Hantsbarger).
- BORERS - TEXAS - Unspecified species causing heavy damage to Arizona ash trees locally in De Witt County. (Tex. Coop. Rpt.; Smith).
- OAK SKELETONIZER (Bucculatrix ainsliella) - OHIO - Most pin oaks half to two-thirds skeletonized near Bloomfield, Trumbull County, northeast; heavy damage occurred in same area during 1962. (Kelly).
- VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - ARKANSAS - Becoming active in southwest portion of State. (Ark. Ins. Sur.).
- WALKINGSTICK (Diaperhomeria femorata) - ARKANSAS - Heavy at higher elevations in western part of State. Few adults present; mating beginning. (Ark. Ins. Sur.).
- GRASSHOPPERS (Melanoplus spp.) - NEW MEXICO - Medium to heavy feeding by M. bivittatus, M. differentialis and M. packardii noted on various trees and shrubs in Valencia, Valencia County. (N. M. Coop. Rpt.).
- SYCAMORE LACE BUG (Corythucha ciliata) - MARYLAND - Infestations common on sycamores in Prince Georges County. (U. Md., Ent. Dept.).
- A CICADA - NEW MEXICO - Unspecified species heavy in trees in Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).
- A SAWFLY (Caliroa sp.) - ILLINOIS - Larvae skeletonized leaves in tops of many oaks in northern and western areas. (Ill. Ins. Rpt.).
- GALL MITES (Eriophyes spp.) - CALIFORNIA - E. laevis extremely heavy on alder trees in Lake Mary, Mono County. Infestations so heavy that leaves over considerable area appeared pinkish. (Cal. Coop. Rpt.). OHIO - E. abnormis heavy on linden trees in Franklin County, central area. (Triplehorn).
- MIMOSA WEBWORM (Homadaula albizziae) - MARYLAND - Heavy webbing noted on mimosas in sections of Prince Georges and Wicomico Counties. (U. Md., Ent. Dept.).
- SADDLEBACK CATERPILLAR (Sibine stimulea) - GEORGIA - Heavy on roses in Atlanta area. (Ridley). ALABAMA - Rather large numbers feeding on trees and shrubs in Tuscaloosa County area. (Ledbetter).
- AZALEA LEAF MINER (Gracilaria azaleella) - CALIFORNIA - Adults heavy on azalea nursery stock in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).
- LILAC LEAF MINER (Gracilaria syringella) - IDAHO - Infestations noted among lilac trees in Shoshone, Lincoln County. (Griggs).
- IRIS BORER (Macronoctua onusta) - WISCONSIN - First adult of season taken in blacklight trap at Madison September 8. (Wis. Ins. Sur.).

PUSS CATERPILLAR (Megalopyge opercularis) - MARYLAND - Several larvae found on Chinese holly at Queenstown, Queen Annes County. (U. Md., Ent. Dept.).

A CHRYSAUGID MOTH (Galasa nigrinodis) - MARYLAND - Larvae forming webs on boxwood at Easton, Talbot County. (U. Md., Ent. Dept.).

NOTODONTID MOTHS - KANSAS - Schizura ipomeae larvae defoliated pyracantha and other rosaceous plants in Dickinson County. (Charlton, Thompson, Sept. 5). OHIO - S. concinna larvae infested shade trees in Trumbull County, northeast. (Strausbaugh, Blair). GEORGIA - Datana major heavy on azaleas in southeast area of State. (Freeman).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - NEVADA - Light, spotted larval infestation present on young poplar trees at State Tree Nursery in Sparks, Washoe County. (Bechtel, Lauderdale).

A ROOT WEEVIL (Sciopithes obscurus) - OREGON - Causing considerable damage to rhododendrons in Clackamas County. (Larson).

LEAF BEETLES - FLORIDA - Altica ludoviciana infested crapemyrtle at Orlando, Orange County. (Griffith, Sept. 3). CALIFORNIA - Lema trivittata medium on datura plants in Modesta, Stanislaus County. (Cal. Coop. Rpt.).

APHIDS - RHODE ISLAND - Complaints concerning aphids on willows, honeydew and sooty mold, and concentrations around bases of buildings normal for season in North Providence and Cranston, Providence County, and in Warwick, Kent County. (Mathewson, Cartier, King). VIRGINIA - All stages of Longistigma caryae causing medium damage to branches and foliage of young oaks at a location in Stuart, Patrick County. (Tarpley, Reed). All stages of unspecified species severe on sugar maple at a location in Kenbridge, Lunenburg County. (Tarpley, Waddell). OHIO - Macrosiphum rosae moderate on roses in Clark County, southwest; found 40-60 nymphs and adults per terminal. (Lyon). WISCONSIN - Lachnus salignus troublesome in Winnebago County. Apparently not as prevalent as in 1962. (Wis. Ins. Sur.). OKLAHOMA - Unspecified species heavy on crapemyrtle in Okfuskee County, east central. (Okla. Coop. Sur.). UTAH - Unusually severe and sustained infestations of Periphyllus lypticus occurred on Norway maples in northern part of State this season. Infestation now increasing in Cache County. (Knowlton). OREGON - Large populations, probably Lachnus salignus, noted on many weeping willows in Lane County. (Tinker).

AZALEA LACE BUG (Stephanitis pyrioides) - GEORGIA - Ranged light to moderate on azaleas in Moultrie area, Colquitt County. (Sheffield, Crownover).

COCCIDS - CALIFORNIA - Aspidiotus perniciosus adults heavy on ceanothus nursery stock on a property at Torrence, Los Angeles County. This species has been prevalent this season on fruit trees at many locations over State. Parlatoria camelliae heavy on camellia nursery stock in Yuba City, Sutter County. (Cal. Coop. Rpt.). NEW MEXICO - Unaspis euonymi ranged light to heavy on euonymus in Albuquerque, Bernalillo County. (N. M. Coop. Rpt.). FLORIDA - Chrysomphalus aonidum infested Camellia japonica at Orlando, Orange County. (Griffith, Sept. 3). VIRGINIA - Unaspis euonymi heavy on euonymus at a location in Arlington County. (Rowell).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Infested crab apple in Orofino, Clearwater County. (Fitzsimmons).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Adults medium on privet in Black Point, Marin County. (Cal. Coop. Rpt.).

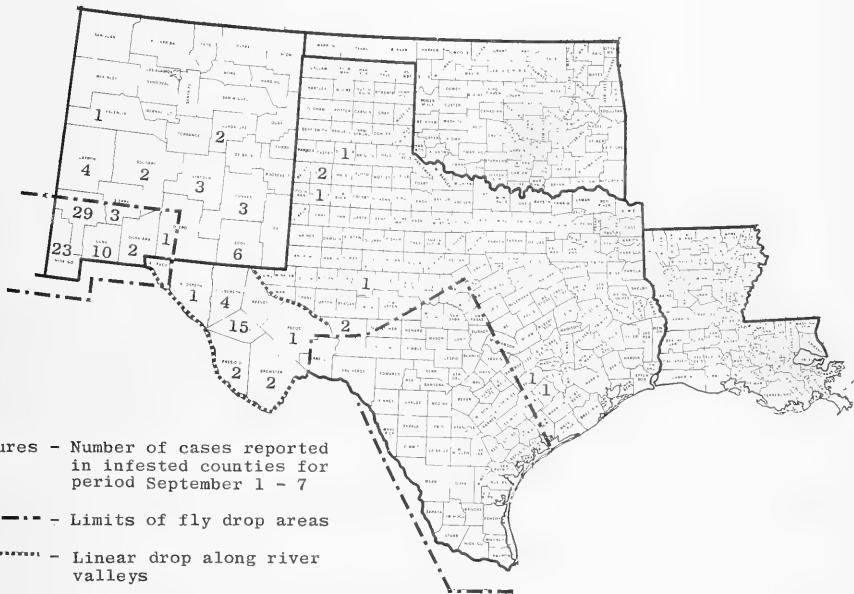
SPIDER MITES - MARYLAND - Caused heavy damage to hydrangea at University Park, Prince Georges County. (U. Md., Ent. Dept.). VIRGINIA - Continue damaging to ornamentals. (Tarpley). GEORGIA - Light to moderate on azaleas in Moultrie area, Colquitt County. (Sheffield, Crownover). OKLAHOMA - Tetranychus spp.

heavy on ornamentals in Okfuskee and Okmulgee Counties, east central. (Okla. Coop. Sur.). CALIFORNIA - *Tetranychus hydrangeae* medium on hydrangea plants locally in San Diego, San Diego County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period September 1 - 7, a total of 34 infestations was reported from TEXAS and 91 from NEW MEXICO. Specimens were reported from 13 counties in Texas and 13 counties in New Mexico. A total of 125,008,250 sterile flies was released during the period September 1 - 7. (Anim. Dis. Erad. Div.).



MOSQUITOES - MARYLAND - *Aedes* spp. and *Culex* spp. occurred in outbreak numbers in several Prince Georges County communities. Salt-marsh species on lower Eastern Shore relatively light. (U. Md., Ent. Dept.). MICHIGAN - Populations of various species unusually low in Lower Peninsula since late July; few adults now appearing in traps. (Morrow, Newman). NORTH DAKOTA - Mosquitoes remain nuisance over most of State; *Aedes vexans* and *Aedes dorsalis* primary species involved. *Aedes nigromaculis* abundant in some northwestern areas. (Noetzel). TEXAS - Populations ranged light to moderate in Lubbock County, with *Culex tarsalis* dominant species. (Breedlove). ARIZONA - *Culiseta inornata* increasing rapidly and causing much irritation in Yuma County. (Ariz. Coop. Sur.). CALIFORNIA - Populations continue in annoying numbers; heavier than at any time this season in areas along Sacramento River and in rice-growing areas. (Cal. Coop. Rpt.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Moderate to heavy generally over eastern third of State, with 1,000-1,500 per head noted on cattle in Sequoyah (east central) and Choctaw (southeast) Counties. Continue at about same level previously reported in Stillwater area, Payne County. (Okla. Coop. Sur.). WYOMING - Large numbers a constant annoyance to livestock in Goshen and Laramie Counties; 250-300 per animal estimated. (Marks).

HOUSE FLY (Musca domestica) - MICHIGAN - Heavy adult populations noted on some Ingham County dairy farms where insecticidal controls have been inadequate. (Mulvany). OHIO - Populations built up substantially in livestock barns near Hillsboro, Highland County, southwest. (Sanders). OKLAHOMA - Increased somewhat in Stillwater area, Payne County. (Okla. Coop. Sur.). COLORADO - A severe problem in feedlots in northeastern part of State since recent rains. (Hantsbarger). UTAH - Very numerous about some beef herds in Ogden-Hooper area, Weber County. (Knowlton, Hanson). CALIFORNIA - Populations unusually high. This first time in 4 years high populations have occurred generally in many areas. (Cal. Coop. Rpt.).

FACE FLY (Musca autumnalis) - ILLINOIS - Varied 0-35 per face on cattle in east and east-southeast districts. None found in 2 herds in Massac and Pulaski Counties, southern area. (Ill. Ins. Rpt.).

HORSE FLIES (Tabanus spp.) - OKLAHOMA - Light in Sequoyah, Okmulgee, Le Flore, Pushmataha and Latimer Counties; heavy in Choctaw County. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - COLORADO - Has become a severe problem in northeastern area feedlots since recent rains. (Hantsbarger).

BLACK FLIES - UTAH - Annoying fishermen at locations along Logan River in Cache County. (Knowlton).

FLIES - NEW MEXICO - Various species very annoying to man and animals in Belen and Los Lunas, Valencia County, and in Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Causing considerable concern in eastern portion of State as far west as Oklahoma City. (Okla. Coop. Sur.).

DOG FLEA (Ctenocephalides canis) - ALABAMA - Annoying in homes in Lee County; numerous on dogs. (McQueen).

WASPS AND HORNETS - UTAH - Yellow jackets and white-faced hornets troublesome to campers and fishermen in some northern canyons. (Knowlton). ALABAMA - Yellow jackets numerous and annoying in congested city areas of Lee County; feeding on all kinds of food scraps around open patios, play areas and pet feeding stations. (Hurst, Barwood).

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Continues to cause some concern in Oklahoma City, Guthrie, Stillwater and Tulsa areas. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

SUBTERRANEAN TERMITES (Reticulitermes spp.) - NORTH DAKOTA - Identified species of the State include R. flavipes and R. tibialis, the latter being more common. Distribution of R. flavipes includes one location in east central McKenzie County and one in central Billings County. R. tibialis found in east central McKenzie County, central Billings County (2 locations), southwestern Slope County and northwestern Slope County (2 locations). An unidentified species of Reticulitermes found in eastern Emmons County. This is the eastern limit of known distribution. (Wheeler). RHODE ISLAND - R. flavipes alates emerged week ending September 6. (Cartier).

GRASSHOPPERS AND CRICKETS - TEXAS - Heavy flights of unspecified species causing annoyance to residents of Hamilton. (Gordon). NEW MEXICO - Acheta domesticus very annoying to householders and business owners in Belen, Valencia County. (N. M. Coop. Rpt.). RHODE ISLAND - Home infestations of Gryllus spp. noted in Warwick, Kent County; Barrington, Bristol County; and Pawtucket, Providence County. (Mathewson, Cartier, King).

COCKROACHES - NEW MEXICO - Periplaneta americana and Blatta orientalis abundant in and around homes in Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

SPRINGTAILS - COLORADO - Nuisance in and around homes in northeastern area. (Hantsbarger).

BOXELDER BUG (Leptocoris trivittatus) - WISCONSIN - Adults nuisance in various sections as they seek hibernation quarters. (Wis. Ins. Sur.).

LARDER BEETLE (Dermestes lardarius) - VIRGINIA - All stages heavy on stored hams locally in Upperville, Fauquier County. (Tarpley, Sept. 6).

PAVEMENT ANT (Tetramorium caespitum) - NORTH CAROLINA - Infested home in Pitt County. (Wray, Sept. 5).

A MILLIPED (Oriulus venustus) - NORTH CAROLINA - Heavy in home in Duplin County. (Wray, Sept. 6).

STORED-PRODUCT INSECTS

GRANARY WEEVIL (Sitophilus granarius) - NEVADA - Heavy in stored barley in Lovelock, Pershing County. (Ferraro).

DERMESTID BEETLES - UTAH - Numerous in grain at Garland, Box Elder County. (Davis, Knowlton).

BENEFICIAL INSECTS

LADY BEETLES - CALIFORNIA - Coleomegilla vittigera adults heavy in alfalfa hay in Doyle area, Lassen County. (Cal. Coop. Rpt.). WYOMING - Adults of several species averaged 32 and larvae 8 per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Marks). OHIO - Hippodamia convergens larvae and adults averaged 30 per 50 sweeps in field of alfalfa in Clark County, southwest. (Lyon). ALABAMA - Unusually large numbers of Coleomegilla maculata fuscilabris and Hippodamia convergens feeding on corn leaf aphid (Rhopalosiphum maidis) infesting grain sorghum in Tallapoosa County. (McQueen).

PUNCTURE-VINE WEEVILS (Microlarinus spp.) - ARIZONA - The seed-feeding species M. lareynii appears to be spreading quite rapidly from points of introduction in Pinal County. The stem-feeding species M. lypriformis is not surviving adequately in same area. (Ariz. Coop. Sur.).

A MELYRID BEETLE (Collops quadrimaculatus) - VIRGINIA - Adults noted in home lawn in Lexington, Rockbridge County. (Tarpley, Craun; Sept. 4).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults averaged 61 per 100 sweeps in Goshen and Laramie County alfalfa. (Marks).

WHEEL BUG (Arilus cristatus) - OHIO - Observed feeding on locust borer (Megacyllene robiniae) near Hillsboro, Highland County, southeast. (Lyon).

CAROLINA MANTIS (Stagmomantis carolina) - ALABAMA - Adults appearing in cotton fields and near streams throughout State. (McQueen).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Traps now being removed. Numbers of adults much smaller than of past 2-3 weeks. Some additional adults collected in Battle Creek area which increased size of known infestation there. In Detroit, 7 new finds made on route which was negative all summer. In Washtenaw County, 5 new locations showed positive catches and in Berrien County, 3 traps contained adults. (Turner, Ring).

ASIATIC GARDEN BEETLE (Maladera castanea) - TEXAS - Single specimen collected from airplane in Houston arriving from eastern city on July 16. (Smith).

A SCARAB (Dynastes tityus) - VIRGINIA - Adult male collected in Marion, Smyth County. (Tarpley, Jones).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - UTAH - Numerous at camp grounds in Uintah Mountains, 13 miles south of Manila, Daggett County. Wild strawberries present in this remote area. (Knowlton).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Collected at Myakka City (Aug. 22), at Parrish (Aug. 20), and at Palmetto (Aug. 29), all in Manatee County. (Roberts, Fielding).

CABBAGE WEBWORM (Hellula rogatalis) - CALIFORNIA - Medium on mustard in Anaheim, Orange County. (Cal. Coop. Rpt.).

SADDLEBACK CATERPILLAR (Sibine stimulea) - VIRGINIA - Light on corn on farm in Gate City, Scott County. (Rowell, Rich).

ANGULAR-WINGED KATYDID (Microcentrum retinerve) - ALABAMA - Adults numerous along streams and appearing at night lights throughout State. (McQueen).

A CAMEL CRICKET (Ceuthophilus walkeri) - NORTH CAROLINA - Number of specimens collected in Rutherford County. (Wray, Sept. '6).

SCOLIID WASPS - VIRGINIA - Scolia dubia noted in Bedford County. (Boone, Aug. 30). NORTH CAROLINA - Scolia sp. collected in Bladen County. (Davis, Robertson).

A MITE (Galumna sp.) - CALIFORNIA - Adults heavy in soil in Whittier, Los Angeles County; infestations occur where rodents burrow. (Cal. Coop. Rpt.).

ADDITIONAL NOTES

MINNESOTA - WESTERN CORN ROOTWORM (Diabrotica virgifera) reported for the first time in Murray County. Egg laying by TWO-STRIPED GRASSHOPPER (Melanoplus bivittatus) and RED-LEGGED GRASSHOPPER (M. femurrubrum) observed in central district. Fungus disease present in this area and may be important factor in reducing populations in some fields. INTRODUCED PINE SAWFLY (Diprion similis) second generation high but spotty in Brainerd-Crosby area. Large white pine and understory white pine and roadside Scotch pine defoliation severe in this area. An undetermined late-feeding SAWFLY causing heavy defoliation to roadside jack pine along U.S. Highway 10 in Sherburne County. WHITE-MARKED TUSsock MOTH (Hemerocampa leucostigma) found on shade trees in Howard Lake area; populations light. (Minn. Ins. Rpt.).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Kansas DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|---|---------------------|-------------------------------------|
| A. Pest or pest complex | <u>Grasshoppers</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | | No. <u>8,986,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | | Units/ <u>23.5 bu.</u> |
| D. Price ^b per unit (<u>bu.</u>) ^c (From CRS) | | \$/ <u>2.02 - December 15, 1962</u> |
| E. <u>Acres</u> ^a needing control | | No. <u>350,775</u> |
| F. <u>Acres</u> ^a treated | | No. <u>209,569</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | | % <u>-----</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | | Units/ <u>5.0</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | | \$/ <u>10.10</u> |
| K. Loss in quality, \$ per <u> </u> ^a | | \$/ <u>-----</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | | Units <u>706,030 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | | \$/ <u>1.50</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | | \$ <u>314,353.50</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | | \$ <u>1,426,180.60</u> |
| P. Quality loss for all <u> </u> ^a , (E-F) x K | | \$ <u>-----</u> |
| Q. Combined control cost and losses, N + O + P | | \$ <u>1,740,534.10</u> |

Comment: Total value of crop: \$426,565,420.00. Percent loss: 0.4

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Wheat | IN | Kansas | DURING | 1962 |
|-----------|--|--------------------------------|---------------------|--------------------------|--------|
| | (Commodity) | | (State or District) | | (Year) |
| A. | Pest or pest complex | Brown wheat mite | | | |
| B. | Number of acres ^a produced | (From CRS) | No. | 8,986,000 | |
| C. | Average yield per acre ^a | (From CRS) | Units/ | 23.5 bu. | |
| D. | Price ^b per unit (bu.) ^c | (From CRS) | \$/ | 2.02 - December 15, 1962 | |
| E. | Acres ^a needing control | | No. | 9,548 | |
| F. | Acres ^a treated | | No. | 32,980 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | ----- | |
| I. | Loss in yield, units per acre ^a | C x H | Units/ | 2.3 bu. | |
| J. | Loss in yield, \$ per acre ^a | D x I | \$/ | 4.65 | |
| K. | Loss in quality, \$ per | _____ ^a | \$/ | ----- | |
| L. | Yield loss for all acres ^a | (E-F) x I | Units | 21,956 bu. | |
| M. | Control cost, \$ per acre ^a | | \$/ | 3.16 | |
| N. | Control cost for all acres ^a | F x M | \$ | 104,217.00 | |
| O. | Yield loss for all acres ^a | (E-F) x J | \$ | 44,398.00 | |
| P. | Quality loss for all | _____ ^a , (E-F) x K | \$ | ----- | |
| Q. | Combined control cost and losses, | N + O + P | \$ | 148,615.00 | |

Comment: Total value of crop: \$426,565,420.00. Percent loss: 0.03

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Kansas DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|--|-----------------|---------------------------------|
| A. Pest or pest complex | <u>Greenbug</u> | |
| B. Number of <u>acre</u> ^a produced (From CRS) | No. | <u>8,986,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>23.5 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.02 - December 15, 1962</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>26,160</u> |
| F. <u>Acres</u> ^a treated | No. | <u>14,841</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>-----</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>2.6 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>5.25</u> |
| K. Loss in quality, \$ per <u> </u> ^a | \$/ | <u>-----</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>29,429 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>1.97</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>29,237.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>59,425.00</u> |
| P. Quality loss for all <u> </u> ^a , (E-F) x K | \$ | <u>-----</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>88,662.00</u> |

Comment: Total value of crop: \$426,565,420.00. Percent loss: 0.02

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Kansas DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|--------------------|---------------------------------|
| A. Pest or pest complex | <u>Hessian fly</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>8,986,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>23.6 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.02 - December 15, 1962</u> |
| E. <u>Acres</u> ^a infested | No. | <u>398,896</u> |
| F. <u>Acres</u> ^a treated | No. | <u>0</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>-----</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>0.2 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>0.40</u> |
| K. Loss in quality, \$ per <u> </u> ^a | \$/ | <u>-----</u> |
| L. Yield loss for all <u>acres</u> ^a , B x I | Units | <u>1,797,200 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>0</u> |
| N. Control cost for all <u>acre</u> ^a , F x M | \$ | <u>0</u> |
| O. Yield loss for all <u>acres</u> ^a , B x J | \$ | <u>3,594,400.00</u> |
| P. Quality loss for all <u> </u> ^a , (E-F) x K | \$ | <u>-----</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>3,594,400.00</u> |

Comment: Total value of crop: \$426,565,420.00. Percent loss: 0.9

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Corn for grain IN Kansas DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|--|--|---------------------------------|
| A. Pest or pest complex | <u>Corn rootworms (soil treatment)</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>1,298,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>51.0 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>1.03 - December 15, 1962</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>739,860</u> |
| F. <u>Acres</u> ^a treated | No. | <u>420,552</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>-----</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>3.57 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>3.68</u> |
| K. Loss in quality, \$ per <u> </u> ^a | \$/ | <u>-----</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,139,930 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>1.25</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>525,690.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>1,175,053.00</u> |
| P. Quality loss for all <u> </u> ^a , (E-F) x K | \$ | <u>-----</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>1,700,743.00</u> |

Comment: Total value of crop: \$68,183,940.00. Percent loss: 2.5

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Corn for grain (Commodity) | IN | Kansas (State or District) | DURING | 1962 (Year) |
|-----------|---|---------------|-------------------------------|--------|----------------|
| A. | Pest or pest complex | Black cutworm | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 1,298,000 | | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 51.0 bu. | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | 1.03 - December 15, 1962 | | |
| E. | Acres ^a needing control | No. | 145,645 | | |
| F. | Acres ^a treated | No. | 89,245 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | ----- | | |
| I. | Loss in yield, units per _____ ^a , C x H | Units/ | ----- | | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | 24.80 | | |
| K. | Loss in quality, \$ per _____ ^a | \$/ | ----- | | |
| L. | Yield loss for all _____ ^a , (E-F) x I | Units | ----- | | |
| M. | Control cost, \$ per acre ^a | \$/ | 2.00 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 178,490.00 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 1,398,720.00 | | |
| P. | Quality loss for all _____ ^a , (E-F) x K | \$ | ----- | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 1,577,210.00 | | |

Comment: Total value of crop: \$68,183,940.00. Percent loss: 2.3

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Sorghum IN Kansas DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|---|---------------------------------|
| A. Pest or pest complex | <u>Seed treatment - Seed attacking insect complex</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,960,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>43.5 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>0.87 - December 15, 1962</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>3,958,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>1,984,010</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>12.4</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>5.4 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>4.70</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>----</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>10,659,546 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>0.08</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>158,721.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>9,277,753.00</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>----</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>9,436,474.00</u> |

Comment: Total value of crop: \$112,021,200.00. Percent loss: 8.4

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

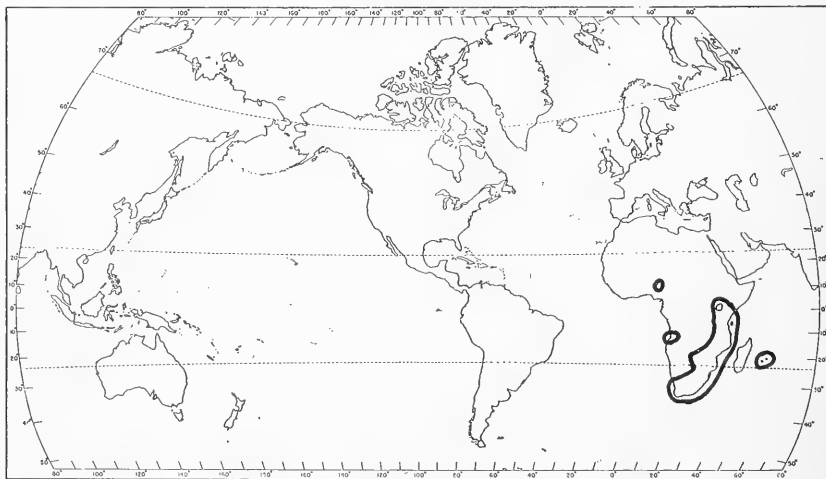
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

NATAL FRUIT FLY (Ceratitis rosa Karsch)

Economic Importance: The earliest record of this tephritid is in the original description by F. Karsch in 1887 from specimens collected at Delagoa Bay, Mozambique. By the turn of the century, it was recorded as a pest of economic importance in Natal Province, Republic of South Africa. Natal fruit fly is now considered the most common fruit fly of economic importance in Southern Rhodesia, and it has been reared from fruits from all parts of the eastern districts. About 1953, after accidental introduction to Mauritius, this fly became established and even largely replaced the Mediterranean fruit fly (Ceratitis capitata (Wied.)) as a pest of fruits. This situation, as to replacement, also probably occurred in Southern Rhodesia since it is thought that the Mediterranean fruit fly was more common in that country in previous years.

Hosts: This fruit fly infests most kinds of orchard fruits and a large number of wild ones. Only nut crops appear to be immune from attack. Included in those attacked are peach, apricot, apple, quince, guava, citrus, rose-apple, loquat and an indigenous fruit, Garcinia livingstonei. Of these hosts, peaches and guavas are particularly favored.

Distribution: Angola, Kenya, Mozambique, Nigeria, Nyasaland, Republic of South Africa, Southern Rhodesia, Swaziland, Tanganyika, Uganda, and the islands of Mauritius, Reunion and Zanzibar.



General Distribution of Ceratitis rosa Karsch

Life History and Habits: The Natal fruit fly overwinters in the adult stage and is able to withstand temperatures as low as 20°F., provided the warming period comes slowly. Food, water and shelter are more important overwintering factors than temperature. Overwintering flies feed on honeydew and require an abundant water supply. It was discovered that this species is not attracted to traps during the winter months.

Eggs are laid, 10 to 20 at a time, by the female just below the fruit surface. The fruit does not need to be damaged before eggs are laid, and eggs may be deposited in tissues of fruits long before ripening occurs. Where fruits are still very green, eggs may not hatch and may even be expelled by exudations from the fruit. Such exudations frequently indicate the presence of the fruit fly. Eggs usually hatch within four days after oviposition, but under cold conditions may take longer. Larvae develop rapidly and burrow throughout the tissues of the fruit. When removed from the fruit, larvae have a characteristic habit of arching themselves and leaping by sudden straightening. This characteristic is also noted in Mediterranean fruit fly larvae. There are three larval stages and a prepupal stage which occupy a total period of about 12 days, which will vary under different temperature conditions. When full grown, larvae leave the fruit and pupate below the soil surface. The pupal stage lasts 10-20 days. Emerging adults seek shady areas of trees during hotter hours, but are active during morning and evening hours. Females usually start ovipositing in about 7 days. During oviposition, females are quite active and may travel considerable distances, giving rise to a succession of generations appearing in different varieties and species of fruits as they ripen one after the other. Toward the end of the fruiting season, there is a large buildup of Natal fruit fly populations. Adults may live for several months, especially under mild conditions. All stages of the life cycle are influenced by climatic conditions, developing more rapidly under hotter conditions. There are about 10 generations a year.

Description: Body principally brown to tawny. Thorax dark brown laterally, the disc light brown pruinose with short, golden hairs and with a suggestion of a pair of brown longitudinal stripes, usually ending posteriorly in large spots. Pleura yellowish, becoming darker ventrally. Scutellum shiny black with a pair of narrow yellow lines interrupting its expanse. Wing pattern with small, black markings at base of disc and brown bands apically, mostly unconnected, much as in *Ceratitis capitata* (Wied.). Legs yellow, the mesothoracic tibiae of males (only) with dorsal and ventral brushes of elongated, bluish-black scales. Head, including antennae, yellow; face whitish without a black spot; no capitate hair in the males as in *capitata*. Yellowish abdomen with 2 transverse dark brown bands. Ovipositor sheath of female shorter than width at its base. Length 4-5 mm. or about three-sixteenths of an inch. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies. Description of adult furnished by Dr. Richard H. Foote).

(See illustration of adult female on following page)

Major references: 1. Carnegie, A. J. M. 1962. Rhodesia Agr. J. 59:229-235. 2. Froggatt, W. W. 1909. N. S. Wales Dept. of Agr. Farm. Bul. 24:50-51. 3. Monro, H. K. 1925. Union South Afr. Dept. Agr. Ent. Mem. 3:48-49. 4. Orion, A. J. E. and Moutia, L. A. 1960. Rev. Agr. et Sucrière de l'Île Maurice (Mauritius) 39(3):142-150. 5. Comwlth. Inst. Ent. Distrib. map no. 153. 1962.



Adult Female of Ceratitis rosa Karsch

Drawing by
A. D. Cushman
ENT, ARS, USDA

September 27, 1963

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INSECT

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

A severe NORTHERN CORN ROOTWORM infestation reported from St. Clair County, Michigan; this represents northernmost problem due to this species in State to date. (p. 1137). ALFALFA CATERPILLAR continues a problem to alfalfa in many areas of southern New Mexico, and larvae very numerous on alfalfa in Gila and Dome Valley, Yuma County, Arizona. ALFALFA WEEVIL severely infested third-growth alfalfa in Susquehanna County, Pennsylvania, and adults averaged 18 per 100 sweeps in Fremont, Washakie, Hot Springs and Big Horn Counties, Wyoming. (p. 1140). RANGE CATERPILLAR populations extremely heavy and denuded rangeland in area near Farley, Colfax County, New Mexico. (p. 1141).

PECAN APHIDS (*Melanocallis caryaefoliae* and *Monellia* spp.) extremely heavy on many pecan trees in Elmore, Autauga, Dallas, Perry, Choctaw, Mobile and other Alabama counties. (p. 1142). On Florida citrus, populations of CITRUS RUST MITE, TEXAS CITRUS MITE, PURPLE SCALE, CHAFF SCALE, BLACK SCALE and WHITEFLIES above average. Heavy, spotty infestations of citrus rust mite expected and statewide population of Texas citrus mite higher than in prior years, but only few scattered groves have important infestations. (p. 1143).

COTTON LEAFWORM moderate to heavy and defoliating cotton in areas of Oklahoma, New Mexico and Arizona; infestations also present in high and rolling plains and panhandle areas of Texas. (p. 1146).

BARK BEETLE activity reported in Texas, Arkansas, Alabama, Florida, North Carolina and Pennsylvania; some tree mortality noted and controls undertaken. WHITE-PINE WEEVIL damage continues in Northeast, with some attacks heavy. (p. 1148). An OLETHREUTID MOTH (*Eucosma gloriola*) is causing more widespread concern on white and Scotch pine plantings in Pennsylvania, and large scale outbreaks of BALSAM WOOLLY APHID discovered in North Carolina. A PINE LEAF APHID (*Pineus pinifoliae*) continued serious on white pine in eastern Maine. (p. 1149). LARCH SAWFLY caused moderate to heavy defoliation of Japanese and European larch in portions of Indiana, Lycoming and Clinton Counties, Pennsylvania, and some defoliation recorded in Maine and New York. (p. 1150). Intensity of adult GYPSY MOTH recoveries in southern area of New York reveals serious spread from generally infested areas to north and east. (pp. 1152, 1153).

HORN FLY populations extremely high on untreated cattle in north central and northeast Missouri, and moderate to heavy counts recorded in Oklahoma. (p. 1156). CRICKETS invading homes and much more numerous than usual in lower Michigan; also reported a nuisance in homes and business establishments in Arizona, Colorado, Wisconsin and Alabama. (p. 1157).

DETECTION

ZIMMERMAN PINE MOTH found in Boone and Mercer Counties, West Virginia; believed to be first record for State. (p. 1149). New county records of significance were SOYBEAN CYST NEMATODE in Graves County, Kentucky, and Fayette County, Tennessee (p. 1141); SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) in Forsyth County, North Carolina (p. 1150); JAPANESE BEETLE in Bond, Marion and Fayette Counties, Illinois (p. 1158); EUROPEAN CHAFER in Hartford County, Connecticut, and Genesee, Cortland and Clinton Counties, New York (p. 1159); WHITE-FRINGED BEETLES in Bay County, Florida; Gwinnett, Whitfield and Worth Counties, Georgia; De Kalb and Morgan Counties, Alabama; Webster County, Mississippi; East Feliciana Parish, Louisiana; and Cabarrus County, North Carolina (p. 1159); and IMPORTED FIRE ANT in Tishomingo County, Mississippi (p. 1159).

CORRECTIONS

See page 1147

SPECIAL REPORTS

Meadow Spittlebug Survey in Illinois - 1963 (map). (p. 1139).

Status of the Screw-worm in the Southwest. (p. 1155).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Tomatoes (for processing), Soybeans (for beans), Corn (for grain), Clover-timothy, Alfalfa, and Tobacco in Maryland in 1962. (pp. 1162-1167).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Apples in Colorado in 1962. (p. 1168).

Insects Not Known to Occur in the United States (bagrada bug (Bagrada hilaris (Burm.)). (p. 1169).

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

WEATHER OF THE WEEK ENDING SEPTEMBER 23

The third hurricane of the season moved toward the Texas upper coast on Monday, September 16, preceded by heavy rains along the coast from Galveston, Texas, to Mobile, Alabama. The storm dumped 15 to 25 inches of rain on some counties in southeastern Texas and nearby areas in Louisiana, and lesser amounts farther inland. Another tropical storm approached the southern California coast. It produced heavy rains over much of the southern part of that State, over nearby portions of Arizona, and over the Great Basin. This storm drenched Yuma, Arizona, with 2.42 inches of rain on Tuesday. That amount is four times the September normal and is more than two-thirds of the annual normal for Yuma. A low pressure area that early in the week lay a few hundred miles southeast of Nantucket, Massachusetts, and a stationary front that extended southwestward to the Florida Peninsula produced several inches at some locations along the coast and lighter amounts farther inland. A low pressure area centered north of Winnipeg, Canada, on Tuesday, moved rapidly northeastward. A trailing front from northern lower Michigan to the southern Rockies produced a broad band of light rains over the upper Mississippi Valley, the northern Great Plains and Plateau, and the northern and central Rocky Mountains. Some very sharp temperature contrasts existed across this front. At noon Tuesday, Des Moines, Iowa, registered 83° and Spencer, Iowa, registered 61°. Shortly after noon, Chicago registered 92° but the temperature tumbled to the 60's after the frontal passage. As the front continued southward, it dropped temperatures but produced little rain. Tennessee registered no rain. The dry area, which received no rain or only light sprinkles extended from the central parts of Illinois, Indiana, and Ohio, southward to southern Alabama and the coast of Georgia.

Dry, sunny weather prevailed in the western counties of Florida and the north-western part of the Peninsula. Southern Florida received generous rains from a low pressure area which covered the eastern part of the Gulf of Mexico. Key West, Florida, received 10.29 inches of rain during the week. Of the amount, 9.00 inches fell on Thursday and Friday. Temperatures averaged below normal over most of California and the Great Basin; also along the Gulf of Mexico and from the (Continued on page 1147)

CEREAL AND FORAGE INSECTS

CORN EARWORM (*Heliothis zea*) - VIRGINIA - Larvae averaged 1 per 20 plants in 5 soybean fields surveyed in Hanover and Chesterfield Counties; average pod damage 7-25 percent in 3 infested fields; treatments underway. (Matheny). Damaging in several sections of area between Rappahannock and Potomac Rivers. Light on soybeans in Nansemond and Surry Counties, 1 per 50 to 1 per 200 feet of row; and medium in King George and Sussex Counties, 1 per 10 to 2 per 5 feet of row. None found in Isle of Wight County and in Virginia Beach and Chesapeake. (Tarpley).
NORTH CAROLINA - Ranged 0-4 per 25 feet of row in 16 soybean fields checked in Wilson, Johnston, Wayne and Jones Counties; field in Jones County slightly damaged. (Mount, Sept. 13). Destroyed 60-acre field of soybeans in Pamlico County. (Rea, Sept. 13).
ALABAMA - Locally heavy on sorghum in Autauga County, 1-6 full-grown larvae per head. (McQueen).
OHIO - Larvae increasing on late-planted corn throughout southern area; 5-10 percent of sweet corn infested in Pickaway County, central area. Most larvae in early stages. (Richards).
ARKANSAS - Larvae per 30 feet of row in soybeans 0-36 compared with 0-69 previous week; 8 of 15 fields infested compared with 12 of 15 previous week. Seven of infested fields had only 1-5 larvae per 30 feet of row. (Sharp).
OKLAHOMA - Light to heavy infestations present on alfalfa in Kay and Noble Counties, north central area, with counts 5-75 per 10 sweeps. Counts 75 per 10 sweeps in Major County, northwest, and 6-7 per 10 sweeps in Tillman County, southwest. (Okla. Coop. Sur.).
COLORADO - Damage to field corn varies considerably in Cheyenne, Kit Carson, Adams, Crowley, Otero, Bent and Prowers Counties, with 5-10 larvae per 10 ears. Larvae caused considerable damage to home garden sweet corn in Pueblo, Crowley, Otero, Weld and Larimer Counties. (Jenkins).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NORTH CAROLINA - Caused about 25 percent stalk breakage in cornfield near potatoes in Camden County. (Jones, Sept. 13).
ALABAMA - Caused severe damage to 20-acre field of grain sorghum in Autauga County; 50-60 percent of stalks with 1-3 full-grown larvae per stalk. Some pupae noted in stalks. Another 10-acre field near Autaugaville heavily infested with small larvae feeding in heads. (McQueen).
OHIO - Heavy infestations observed in home garden sweet corn in Brown, Adams and Scioto Counties, southern area. (Wells, Lyon).
NEBRASKA - Third to fifth instars present in central and southern areas; infestations ranged moderate to heavy. (Bergman).

FALL ARMYWORM (*Laphygma frugiperda*) - NEW JERSEY - Heavy infestation noted on field corn. (Ins.-Dis. Newsltr., Sept. 17).
GEORGIA - Light infestation on heads of pearl millet in northwest area. (Johnson).
TEXAS - Causing light to moderate damage to improved pastures in central part of eastern area. (Tex. Coop. Rpt.).
ARIZONA - Larvae causing moderate damage to corn in Yuma County. Infestations also found on alfalfa in Pinal and Maricopa Counties; averaged 150 per 100 sweeps. (Ariz. Coop. Sur.).

SORGHUM WEBWORM (*Celama sorghiella*) - ALABAMA - Light infestations in sorghum and Sudan grass in Madison, Autauga and Dallas Counties. (Buttram et al.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - IDAHO - Spotted infestations found in ears of all late corn in eastern Twin Falls County; 1-3 larvae per ear common. (Douglas, Gibson, Portman).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MICHIGAN - A severe infestation reported from St. Clair County represents northernmost problem due to this species in State to date. Root injury caused considerable lodging. Ear damage extensive and adults abundant on September 17. (Pynnonen).
NEBRASKA - Several adults found in alfalfa adjacent to corn in Garfield and Loup Counties. (Bergman).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - NEBRASKA - Adults very abundant on corn near Waverly, Lancaster County. In central and southern areas, populations very low in corn and all vegetative fields near corn. (Bergman).

DUSKY SAP BEETLE (Carpophilus lugubris) - OHIO - Adults extensive in 2 fields of field corn in Athens County. This species is primarily a sweet corn pest in State. (Ackerman, Holdsworth).

CHINCH BUG (Blissus leucopterus) - ALABAMA - Extremely high population on 60 acres of pearl millet in Elmore County. (McQueen).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Numbers continue low with a decrease from previous week in 16 fields checked regularly in Lonoke County, east central. Adults averaged 2 per 100 heads. (Sharp).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Populations appear light in grain sorghum checked in Clovis area, Curry County; some growers treating. (N. M. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MICHIGAN - A local infestation in field corn caused leaf discoloration since mid-August in Ingham County. (Hoffman, Proctor). COLORADO - Populations dropped on corn and sorghum to non-economic levels in Adams, Baca, Bent, Cheyenne, Crowley, Kit Carson, Kiowa, Otero, Prowers and Pueblo Counties. (Jenkins).

SPOTTED ALFALFA APHID (Therioaphis maculata) - SOUTH DAKOTA - Weekly surveys being made in Yankton and Bon Homme Counties to determine if and when first sexual forms appear this fall. Counts per 100 sweeps in alfalfa 275 in Bon Homme County, 235 in Yankton County and 27 in Sanborn County. (Hintz). NEBRASKA - Light, 2-11 per 10 sweeps, on alfalfa in central, southern and southeast areas. (Bergman). OKLAHOMA - Reported killing seedling alfalfa in localized area of Tillman County. Counts of 400 per 10 sweeps noted in established stands in Tillman County, with treatments reported in county. Light, 25-50 per 10 sweeps, in Kay, Noble and Major Counties. (Okla. Coop. Sur.). COLORADO - Populations vary; counts per 100 sweeps 10-50 in Mesa County and 50-150 in Huerfano County. Moderate numbers in Pueblo, Crowley, Otero and areas of Bent and Prowers Counties. High populations present in dry areas of Bent and Prowers Counties. (Bulla, Jenkins, Schweissing). NEW MEXICO - Generally light in majority of alfalfa checked in Dona Ana and Roosevelt Counties. (N. M. Coop. Rpt.).

PEA APHID (Acyrtosiphon pisum) - MARYLAND - Slight buildup continues on alfalfa in central area; 10-70 per sweep. (U. Md., Ent. Dept.). NEBRASKA - Ten per 10 sweeps in Cedar County alfalfa. (Roselle). In central and southern areas, ranged 3-9 per 10 sweeps. (Bergman). OKLAHOMA - Light on alfalfa in Major County. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate in Chaves and Roosevelt County alfalfa. (N. M. Coop. Rpt.). UTAH - Becoming much more numerous on alfalfa in Willard-Brigham area of Box Elder County. (Knowlton). WYOMING - Averaged 1,800 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

TARNISHED PLANT BUG (Lygus lineolaris) - MARYLAND - Adults moderate on alfalfa in Montgomery and Frederick Counties. (U. Md., Ent. Dept.). NEBRASKA - Larvae and adults averaged 15 per 10 sweeps in Cedar County alfalfa. (Roselle). Ranged 3-20 per 10 sweeps on alfalfa in central and southern areas. (Bergman).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 58 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

RAPID PLANT BUG (Adelphocoris rapidus) - OHIO - Heaviest counts averaged 1 per sweep in alfalfa in Clermont County, southwest. (Lyon). NEBRASKA - Larvae and adults 12 per 10 sweeps in Cedar County alfalfa. (Roselle).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults averaged 26 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Appears to be decreasing in Graham, Greenlee, Pinal and Maricopa Counties; 500-700 per 100 sweeps. (Ariz. Coop. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - MARYLAND - Declined considerably on alfalfa in all sections. (U. Md., Ent. Dept.). NEBRASKA - Averaged 6 per 10 sweeps in Cedar County alfalfa. (Roselle).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - UTAH - Very numerous in alfalfa-field near Brigham City, Box Elder County. (Knowlton).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MARYLAND - Adults very active in blooming alfalfa in Montgomery and Frederick Counties. (U. Md., Ent. Dept.). WISCONSIN - Adults numerous throughout most southern areas. (Wis. Ins. Sur.). NEBRASKA - Larvae averaged 12 per 10 sweeps in Cedar County alfalfa. (Roselle). NEW MEXICO - Continues a problem in alfalfa in many areas of southern counties; as high as 30-50 larvae per 100 sweeps near Portales, Roosevelt County. (N. M. Coop. Rpt.). ARIZONA - Larvae very numerous in alfalfa in Gila and Dome Valley, Yuma County, but appear to be decreasing in Graham, Greenlee and Maricopa Counties. (Ariz. Coop. Sur.). IDAHO - Adults averaged about 1 per square yard on alfalfa in Hammett and Glenss Ferry areas, Elmore County. (Smith).

GARDEN WEBWORM (*Loxostege similalis*) - OKLAHOMA - Moderate to heavy numbers present in Kay, Noble and Major Counties, with 50-95 percent of terminals infested in areas of Kay and Noble Counties. Counts 15-100 per 10 sweeps in Major County. (Okla. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - MARYLAND - Small larvae light on alfalfa in Frederick County. (U. Md., Ent. Dept.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Infesting alfalfa in Graham County; 150-200 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - PENNSYLVANIA - Third-growth alfalfa severely infested by all stages of larvae in Susquehanna County; adults also present. (Udine, Sept. 16). MARYLAND - Adults common up to 31 per 10 sweeps, on alfalfa in Montgomery and Frederick Counties; larvae also active and causing light to moderate damage. (U. Md., Ent. Dept.). RHODE ISLAND - Populations generally low throughout State this summer, even in untreated fields. (Mathewson, Peabody, Wakefield). WYOMING - Adults averaged 18 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

STINK BUGS - VIRGINIA - *Acrosternum hilare* common in most soybean fields checked in Isle of Wight and Nansemond Counties, and in Virginia Beach and Chesapeake. (Tarpley). NORTH CAROLINA - Stink bugs, primarily nymphs and adults of *A. hilare*, generally ranged 0-8 per 50 feet of row in soybeans in Washington, Beaufort, Hyde and Tyrrell Counties; four fields checked in each county. However, one field in Washington County had 20 per 50 feet of row. Counts much lower than at same time in 1962. (Mount, Sept. 20). Stink bugs ranged 0-3 per 25 feet of row in 10 soybean fields examined in Wilson, Johnston and Wayne Counties. Five fields examined in Jones County ranged 0-3 per 25 feet of row and 1 field with 8 per 25 feet of row. Counts lower than at same time in 1962. (Mount, Sept. 13).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - MARYLAND - Larvae caused moderate damage to soybeans at Darnestown, Montgomery County. (U. Md., Ent. Dept.). VIRGINIA - Light infestations observed in most soybean fields checked in Nansemond, Isle of Wight, Surry, Sussex and King George Counties, and in Virginia Beach and Chesapeake. (Tarpley). NORTH CAROLINA - Extensively laced foliage of 20-acre field of soybeans in Pasquotank County; other fields in area show much less damage. (Jones, Sept. 13).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Caused moderate foliage injury to soybeans near Darnestown, Montgomery County. (U. Md., Ent. Dept.). VIRGINIA - Observed in most soybean fields checked in Nansemond, Isle of Wight, Surry, Sussex and King George Counties, and in Virginia Beach and Chesapeake. (Tarpley). ARKANSAS - Range per 30 feet of row in soybeans 0-38 compared to 0-27 previous week; 9 of 15 fields scouted infested compared with 11 of 15 previous week. (Sharp).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Heavy in some peanut fields in Barbour County. (Barwood, Walton, Hagler). OKLAHOMA - Surveys show considerable damage inflicted to peanuts in experimental plots at Stratford, Garvin County. No infestations found in fields checked in Payne and Pottawatomie Counties (2 fields each). (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Range per 30 feet of row in soybeans 0-89 compared with 0-109 previous week; 2 of 15 fields infested compared with 8 of 15 previous week. (Sharp). OKLAHOMA - Large numbers present in alfalfa in Kay, Noble and Major County areas, with counts 150-200 per 10 sweeps in Tonkawa area. (Okla. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - NORTH CAROLINA - Heavy on field of peanuts in Nash County. (Smith, Sept. 6). Peanuts in Halifax County appear damaged by mites although none found on plants. (Robertson, Sept. 13).

SOYBEAN CYST NEMATODE (Heterodera glycines) - KENTUCKY - Collected for the first time in Graves County. (PPC, Cent. Reg., Aug. Rpt.). TENNESSEE - Found for the first time in Fayette County. (PPC, South. Reg., Aug. Rpt.).

GRASSHOPPERS - MARYLAND - Melanoplus spp. very common and noticeable in grassy borders alongside corn and hay fields in Frederick and Montgomery Counties. (U. Md., Ent. Dept.). WISCONSIN - Mating and egg laying continues. Localized migrations occurring in many areas as alfalfa is cut and corn leaves dry. (Wis. Ins. Sur.). NEBRASKA - Melanoplus femurrubrum adults ranged 6-8 per square yard in field margin in Nemaha County. (Roselle). M. sanguinipes approximately 12-15 per square yard in Clay and Fillmore County field margin adjacent to corn, alfalfa and sorghum. (Bergman). COLORADO M. sanguinipes, M. femurrubrum and M. differentialis present at high levels of 15 per square yard within city limits of Colorado Springs, El Paso County; concentrated in yards, parks and weedy areas. Some damage observed. (Watson). IDAHO - Populations of several species decreased in Dietrick Butte area. In localized concentrations, populations decreased from 20 to 2 per square yard. (Smith).

A CRICKET (Nemobius fasciatus) - NEBRASKA - Ranged 6-8 per square yard in field margin in Nemaha County. (Roselle).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Extremely heavy populations denuded rangeland in area near Farley, Colfax County; found to be moving "as an army". Estimated count along a line 8-10 feet deep was about 800-900 larvae per square yard. (N. M. Coop. Rpt.).

WEBWORMS - NORTH CAROLINA - Infested many lawns in McDowell County and becoming extensive problem in lawns in Wilkes County. (Love, Daniel; Sept. 13). PENNSYLVANIA - Larvae and adults of Crambus sp. heavy in a demonstration plot of sod in Doylestown, Bucks County; some adults laying eggs. (Nixon, Aug. 28).

CORN LEAF APHID (Rhopalosiphum maidis) - COLORADO - Caused some discoloration of brush on broomcorn in Baca County. (Jenkins).

A CHINCH BUG (Blissus leucopterus insularis) - FLORIDA - Severely infesting stems of St. Augustine grass at Tampa, Hillsborough County. (Hale).

A BILLBUG - NEBRASKA - Larvae present in bluegrass sod in Lincoln, Lancaster County. (Roselle).

FRUIT INSECTS

BUFFALO TREEHOPPER (Stictocephala bubalus) - OHIO - Caused severe damage to young trees and new growth in older trees at apple orchard in Clermont County, southwest. Injury due to twig punctures by ovipositing females. (Lyon).

APPLE LEAFHOPPER (Empoasca maligna) - OHIO - Nymphs light on apple trees leaves in unsprayed orchard in Clermont County, southwest. (Lyon).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - WISCONSIN - Noticeable on a few apple trees in Kenosha County. (Wis. Ins. Sur.).

WALNUT SCALE (Aspidiotus juglansregiae) - FLORIDA - Moderate on stem and bark of pear at Tampa, Hillsborough County. (Hale, Sept. 9).

SAN JOSE SCALE (Aspidiotus perniciosus) - FLORIDA - Light on stem and bark of plum at Tampa, Hillsborough County. (Hale, Sept. 10).

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Larvae medium and feeding on almond nut meats in Yuba City, Sutter County. (Cal. Coop. Rpt.). OHIO - No adults emerged since September 3 in Wayne County. (Forsythe).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - CALIFORNIA - Heavy in Halloween peaches in Wheeler Ridge, Kern County. (Cal. Coop. Rpt.).

A FALL WEBWORM (Hyphantria texana) - CALIFORNIA - Heavy larval feeding on peach foliage in Orland, Glenn County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - GEORGIA - Heavy on pecans in Mitchell County. (Sheffield, Crownover). PENNSYLVANIA - General in Indiana and Westmoreland Counties (Yackley, Aug. 12); medium locally in Huntingdon County (Negley, Sept. 4); heavy buildup noted in Butler County (Negley, Aug. 9); medium in southwestern area, becoming less eastward on cherry and other trees. (Udine).

SHOT-HOLE BORER (Scolytus rugulosus) - VIRGINIA - Heavy on 3 trees in block of Stark Crimson apples in orchard in Cana, Carroll County. (Amos, Aug. 28).

APPLE MAGGOT (Rhagoletis pomonella) - OHIO - Last adult emerged from cage September 3 in Wayne County; occasional adult captured on sticky board trap as of September 18. (Forsythe).

WESTERN SUBTERRANEAN TERMITE (Reticulitermes hesperus) - CALIFORNIA - Peach fruit from old orchard found infested in packing shed on 3 occasions; this was ripe fruit for cutting and drying. Most fruit with split pits. (Cal. Coop. Rpt., Sept. 5).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Ranged 50-60 per leaf on peach trees in Mesa County; problem in some apple orchards in Delta County and under control in Montrose County. (Bulla).

PEACH SILVER MITE (Aculus cornutus) - COLORADO - Abundant in some peach orchards in Mesa County; causing silvering of leaves. (Bulla).

PECAN APHIDS - ALABAMA - Melanocallis caryaefoliae and Monellia spp. extremely heavy in many pecan trees in Elmore, Autauga, Dallas, Perry, Choctaw, Mobile and other counties; these aphids along with drought stress now completely defoliated many trees; second growth now starting following rains in some orchards which could bring about serious conditions by reducing maturing ability of nuts and providing unhealthy situation for setting of nuts in 1964. (Hagler, Bagby, Seibels, et al.). GEORGIA - Unspecified species heavy on pecans in Mitchell County. (Sheffield, Crownover).

CAMPBOR SCALE (Pseudaonidia duplex) - FLORIDA - Light on stem of pecans at Deland, Volusia County. (Roberts, Sept. 3).

WALNUT CATERPILLAR (Datana integerrima) - ALABAMA - Several groups of approximately 100 each feeding on walnut and pecans in Perry, Choctaw, Mobile and Dallas Counties. (Seibels, Sexton, Deavours, et al.).

SPINY OAKWORM (Anisota stigma) - ALABAMA - Few larvae feeding on pecans in Choctaw County. (McQueen).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Heavy in some Stuart pecans; pupation in progress. (Sexton, Deavours).

A SPIDER MITE - GEORGIA - Heavy on pecans in Mitchell County. (Sheffield, Crownover).

Citrus Insect Situation in Florida - Mid-September - On leaves, CITRUS RUST MITE (Phyllocoptruta oleivora) infested 62 percent of groves (norm 56 percent); 47 percent economic (norm 36 percent). On fruit, CITRUS RUST MITE infested 68 percent of groves (norm 67 percent); 43 percent economic (norm 45 percent). Population will continue above average and in high range. Little change expected statewide and spotty, heavy infestations will be present in all areas. Highest districts Brooksville, Gainesville, Bartow, upper east coast and Orlando. CITRUS RED MITE (Panonychus citri) infested 43 percent of groves (norm 38 percent); 16 percent economic (norm 18 percent). Infestations spotty and generally below average. Slight increase expected. Highest districts Orlando and west coast. TEXAS CITRUS MITE (Eutetranychus banksi) infested 32 percent of groves (norm 19 percent); 17 percent economic (norm 6 percent). Statewide population higher than in prior years, but only few scattered groves have important infestations. Slight increase will occur in October. PURPLE SCALE (Lepidosaphes beckii) infested 63 percent of groves (norm 50 percent); 10 percent economic (norm 3 percent). This scale will be more common than in recent years. Few scattered infestations may be important. GLOVER SCALE (L. gloverii) infested 55 percent of groves (norm 19 percent); 20 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 59 percent of groves (norm 30 percent); 13 percent economic (norm 1 percent). Population above average and increasing. YELLOW SCALE (Aonidiella citrina) present in about 30 percent of groves and increasing. Important infestations expected in about 3 percent of groves. Yellow spots 0.125 to 0.25 inch in diameter on green fruit often indicate presence of this scale. BLACK SCALE (Saissetia oleae) infested 46 percent of groves (norm 34 percent); 21 percent economic (norm 14 percent). Infestations will increase in cold-damaged groves and decrease in others. Statewide population will continue above average but at moderate level. Highest districts ridge and Indian River. FLORIDA RED SCALE (Chrysomphalus aonidum) at lowest level on record for September. WHITEFLIES slightly above average and increasing. GRASSHOPPERS more numerous than usual. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Moderate on leaves of Citrus reticulata at Okahumpka and Mascotte, Lake County. (Henderson, Brown, Sept. 11).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - MEXICO - Total of 7,540 inspections of 3,637 traps in States of Chiapas, Yucatan, Veracruz, Tabasco, Guerrero, Tamulipas, Campeche, Sinaloa and Baja California, the Federal District and Territory of Quintana Roo. All results negative. (PPC, Mex. Reg., Aug. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Total of 11 specimens taken; 3 from traps in Ensenada August 2, and 8 from traps in Tijuana August 1-8. Also in Baja California, in Municipios of Tacate, Ensenada and Tijuana 6,780 trap inspections of 1,615 traps in service on 840 properties made. In Municipios Ensenada and Tijuana, 43,573 trees sprayed on 7,254 properties in area of 4,432 acres. (PPC, Mex. Reg., Aug. Rpt.). CALIFORNIA - Seventh bait spray of season

completed in control area; over 3,000 traps in operation in State on United States-Mexican border. Results negative since collection in July. (Cal. Coop. Rpt.).

A FRUIT FLY (Anastrepha striata) - CALIFORNIA - Single male specimen taken in trap in San Ysidro, San Diego County, 0.25 mile north of International Gate. This species not known to be established in Baja California, Mexico, and is presumed to have come from contraband material. (Cal. Coop. Rpt.).

ARMORED SCALES - FLORIDA - Pseudaonidia duplex and Parlatoria pergandii light on fruit of Temple oranges at Stanford. (Youtsey, Sept. 12).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Total of 52,817 citrus trees inspected on 31 properties in Municipios Hidalgo, Guemez, Padilla, and Ciudad Victoria in State of Tamaulipas. Infestations found on 1,326 trees on 19 properties in 3 municipios. None found in Municipio Padilla. At Ciudad Victoria and Mante, Tamaulipas, 171,500 specimens of a parasitic eulophid (Prospaltella opulenta) captured and shipped to La Paz, Baja California; Merida, Yucatan; Huauapán de Leon, Oaxaca; and Apatzingan, Michoacan. Chemical Control Zone - Total of 110,566 citrus trees on 1,528 properties in States of Nuevo Leon and Sonora inspected with negative results. (PPC, Mex. Reg., Aug. Rpt.). TEXAS - Inspections made in Cameron, Dimmit, Hidalgo, Starr and Zapata Counties and in cities of Brownsville and Pharr with negative results. (PPC, South. Reg., Aug. Rpt.).

TRUCK CROP INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Area of known infestation approximately 7 miles long, north to south, and 6 miles wide; potato growers in area east of Samaria, Monroe County, obtained good control but few adults and larvae still present. Mined foliage and injured "green-head" tubers show signs of earlier attack. Larvae found infesting foliage and fruit of eggplant and foliage of horse nettle in area. (Newman, Laser, Proctor, Wagner). OHIO - About 250 acres of potatoes along Michigan-Ohio State line in Lucas County infested. Presently infesting as a leaf miner and by extensive boring within stems and tubers. This pest is not abundant throughout northwestern part of State as reported in CEIR 13(38):1111. (Holdsworth). UTAH - Adults appeared in earliest harvested tubers at Beryl, Iron County. (Knowlton, Sjoblom).

TOMATO HORNWORM (Protoparce quinque maculata) - MICHIGAN - Larvae numerous in home gardens in Wayne County; no adults taken in blacklight traps since week ending September 9 when 2 adults taken in Berrien County, 2 in Macomb County, and 1 in Newaygo County. (Kidd, Newman).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Larvae and pupae medium in tomato fruit in Hanford, Kings County. (Cal. Coop. Rpt.).

PEPPER MAGGOT (Zonosemata electa) - PENNSYLVANIA - Light on peppers in Lackawanna County. (Gesell).

THREE-LINED POTATO BEETLE (Lema trilineata) - PENNSYLVANIA - In clusters of 4-5 on potato plants in Cambria County. (Gesell).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MICHIGAN - Heavy on eggplant in Monroe County. (Hoffman, Proctor). PENNSYLVANIA - Caused heavy damage to tomato plants throughout Bucks County. (Yount, Sept. 1).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Destroying maturing lima beans in isolated home gardens in Chambers and Tallapoosa Counties. (McQueen).

LESSER CORNSTALK BORER (Elasmoplapus lignosellus) - ALABAMA - Causing considerable damage to late snap beans in Lee and Tallapoosa Counties; 15-20 percent of plants damaged. (Barwood, Walton, Hagler).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - IDAHO - Larvae very spotted in windrowed bean fields in southeastern Twin Falls County; mostly in fifth instar although occasional third instar encountered. (Douglas, Gibson, Portman).

A COREID BUG (Leptoglossus oppositus) - ALABAMA - Now very plentiful on seed pods of many annuals and legumes in Mobile County; 10-25 per plant noted on southern peas in home gardens in Baldwin County. (Seibels, Smallwood, Kleinschmidt).

GRASSHOPPERS - ALABAMA - Various species continue buildup over State; caused considerable damage to 5-acre field of lima beans in Elmore County. (McQueen).

A FLEA BEETLE (Phyllotreta cruciferae) - OHIO - Heavy on broccoli near London, Madison County; heavy also in 1962. Det. by G. B. Vogt. (Lyon).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 50-60 per plant in Montrose County. Harvest underway in many areas and pest not of economic importance. (Bulla).

ONION MAGGOT (Hylemya antiqua) - COLORADO - Present on few onions at harvesttime in Montrose County. (Bulla).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Problem in Dona Ana County lettuce fields; controls necessary. (N. M. Coop. Rpt.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Adults feeding on squash blossoms in corn field interplanted with squash and pumpkins in Moody County; ranged 30-50 adults per blossom. (Hintz).

MORNING-GLORY LEAF MINER (Bedellia somnulentella) - CALIFORNIA - Larvae heavy on sweetpotatoes, mining leaves in San Luis Rey, San Diego County. (Cal. Coop. Rpt.).

SWEETPOTATO HORNWORM (Agrius cingulatus) - GEORGIA - Light to moderate on sweetpotatoes in Tift and Colquitt Counties. (Goolsby).

IO MOTH (Automeris io) - COLORADO - Noted on raspberries in Arapahoe County. (Hantsbarger).

TOMATO FRUITWORM (Heliothis zea) - NEW MEXICO - Problem on lettuce fields in Dona Ana County; controls necessary. (N. M. Coop. Rpt.). COLORADO - Eggs on tomato leaves increasing in numbers in Prowers, Bent, Otero, Crowley and Pueblo Counties. Light trap counts of adults doubled past week at Rocky Ford; totaled 286. (Schweissing).

GREEN PEACH APHID (Myzus persicae) - MICHIGAN - Colonies of nymphs and adults still numerous on peppers, eggplant, potatoes, tomatoes and other crops in southern counties. (Proctor, Kidd). UTAH - Moderate on sugar beets at College Ward, Cache County. (Knowlton).

TOBACCO INSECTS

SUCKFLY (Cyrtopeltus notatus) - VIRGINIA - Severe on 2.5 acres of flue-cured tobacco in Lawrenceville, Brunswick County. (Tarpley, Maclin, Sept. 13).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Populations building up in most areas since control measures reduced. Not expected to cause much damage this late in season; harvesting started most areas. (Okla. Coop. Sur.). TEXAS - Light to moderate infestations reported from Collingsworth, Childress, Garza, Briscoe, Motley, Dickens, Cottle and eastern portions of Floyd and Crosby Counties. Increased migration noted past week. (Rummel, Owen).

BOLLWORM (Heliothis zea) - TEXAS - Light to moderate infestations reported from Collingsworth, Lubbock, Garza, Floyd, Borden, Cochran, Motley, Childress and Donley Counties. Increased egg laying reported from Borden County. (Rummel, Owen). NEW MEXICO - Spotted, heavy infestations noted in cotton in southern Dona Ana County. (N. M. Coop. Rpt.). ARIZONA - Larvae numerous and causing heavy damage in all cotton-growing areas but Cochise County where moderate damage found. (Ariz. Coop. Sur.). CALIFORNIA - Evident in most Kern County fields at very low levels. Some economic infestations reported from McFarland, Delano areas. (Leigh, Sept. 12). Some Tulare County fields still need treatment. (George, Sept. 12).

BOLLWORMS (Heliothis spp., et al.) - GEORGIA - Light to heavy infestations in bolls of cotton in northwest. (Johnson). OKLAHOMA - Heavy populations reported from southwest, south central and central areas of State. (Okla. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Moderate to heavy populations defoliating cotton in south central, central, southwest, northwest and north central areas, with many fields reported almost completely defoliated. (Okla. Coop. Sur.). TEXAS - Infestations present throughout high and rolling plains and panhandle areas. Good control noted in all areas. (Rummel, Owen). NEW MEXICO - Moderate populations damaging cotton in Bethel area, Roosevelt County. Heavy infestations require controls in southern Dona Ana County. (N. M. Coop. Rpt.). ARIZONA - Larvae appearing in scattered areas of Graham County on cotton; 5-6 per plant in most severely infested fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light infestations on cotton in northwest area. (Johnson). ARIZONA - Increases found in Eden area of Graham County; 4-5 larvae per plant. Other areas of Graham, Greenlee, Cochise, Maricopa and Pinal Counties indicate decreasing populations. (Ariz. Coop. Sur.). CALIFORNIA - Abundant in many Kern County fields, with possible excessive defoliation in late-maturing cotton. Moth flight heavy at present. (Leigh, Sept. 12).

BEEET ARMYWORM (Spodoptera exigua) - GEORGIA - Very light infestation on cotton in Pike County. (Johnson). ARIZONA - Scattered infestations being reported in Pinal and Maricopa Counties; 2-3 larvae per plant. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Large populations still occurring in Yuma, Maricopa and Pinal Counties. Sporadic infestations found in Graham, Greenlee and Cochise Counties. (Ariz. Coop. Sur.).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Abundant in Kern County cotton adjacent to rose nurseries. Controls may be necessary where larvae are attacking large bolls. (Leigh, Sept. 12).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Larvae increasing in all cotton-growing areas; 25-35 per 100 plants. (Ariz. Coop. Sur.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Abundant in many Kern County alfalfa fields, with some larvae migrating into cotton and some minor buildup within cotton fields. Controls should not be necessary. (Leigh, Sept. 12).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Present in many Kern County fields, with some severe infestations. Damage to small bolls evident in some cases. Controls may be advisable where pests abundant until about September 20. (Leigh, Sept. 12).

APHIDS - CALIFORNIA - Evident in most Kern County cotton, with some infestations sufficiently severe to justify control. (Leigh, Black; Sept. 12). Infestations found generally over Tulare County; however, east side areas apparently have heaviest populations. (George, Sept. 12). ARIZONA - Infestations of Aphis gossypii remain light to moderate in Graham, Greenlee, Cochise and Maricopa Counties; damage has been light in nearly all areas. (Ariz. Coop. Sur.).

SPIDER MITES - CALIFORNIA - Many fields showing considerable reddening due to these pests; no controls should be necessary. (Leigh, Sept. 12). GEORGIA - Light to moderate infestations on cotton in northwest. (Johnson).

CORRECTIONS

CEIR 13(25):668 - BLUEGRASS BILLBUG (Sphenophorus parvulus) - OHIO - Original determination in error. Should read Sphenophorus minimus. Det. by R. E. Warner. (Rings).

CEIR 13(37):1077 - ORIENTAL FRUIT MOTH (Gropholitha molesta) should read Grapholitha molesta.

CEIR 13(38):HIGHLIGHTS and page 1111 - POTATO TUBERWORM (Gnorimoschema operculella) - OHIO - Delete note. See page 1144 in this issue.

Weather of the week ending September 23 (Continued from page 1136) eastern portions of Michigan, Ohio, Kentucky, Tennessee, and Georgia to the Atlantic Ocean. Temperatures averaged above normal over the Rocky Mountains, the Plateau, the Plains, and the northern Prairies. At the end of the week, the Pacific Northwest received rains, the Great Basin was mostly sunny, clouds prevailed over the northern and central Great Plains, high pressure with clear cool weather dominated the eastern third of the country, and generous rains continued in Florida. (Summary supplied by U.S. Weather Bureau).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - TEXAS - 403 new Dendroctonus frontalis infestations located on aerial detection flights over portions of Hardin, Jasper, Liberty, Orange, Polk, San Jacinto, Trinity and Tyler Counties; 60 percent of spots consisted of single tree infestations. D. terebrans reported infesting loblolly, longleaf, and slash pines in Angelina, Houston, Jasper, Liberty, Montgomery, Orange, Polk, Sabine, San Jacinto, Shelby, Trinity, Tyler and Walker Counties. D. terebrans severe in some localities within area of current D. frontalis epidemic, and where populations increased through association with other species. Infested trees treated on National Forests. Infestations of Ips avulsus, I. grandicollis and I. calligraphus continued to decline; only small damage observed. (Williamson; Tex. For. Pest Comm., Aug. Rpt.). ARKANSAS - Ips spp. still active in some heavily infested spots; largest area involved is 1,200 trees on 50 acres in western section of State, with scattered infestations in area covering 300 acres. This would be regarded as explosive situation and might easily develop into fast moving epidemic unless cultural practices and weather slow down beetle development. Much smaller spots prevalent in other areas. D. terebrans quite active in recently harvested spots. Seed trees will be most vulnerable to attack and economic loss from this beetle. (Ark. For. Pest Rpt., Sept.). ALABAMA - D. terebrans very active in Marengo County; killed 25 shortleaf and loblolly pines at intersection of State Highways 10 and 69. Larvae, pupae and adults present. (McQueen). Ips spp. damaged 90 percent of young 3-foot pines in a Mobile County nursery. (Seibels, Bolton). FLORIDA - Survey during August showed D. terebrans still active in some naval stores areas, but not to such extent as in 1962. (McCowan). NORTH CAROLINA - D. frontalis increasing at about normal rate for time of year. Almost inactive in Mecklenburg County area where infestation very heavy in 1962. Infestations in Davidson, Randolph and portions of Guilford, Forsyth and Yadkin Counties appear slightly more severe than earlier in 1963. (For. Pest Newsltr.). D. frontalis and Ips spp. infestations noted in Warren and Vance Counties, near Virginia State line; relative abundance will not be known until ground survey made. (Green). Ips calligraphus light on pines at a location in Robeson County. (McIntyre, Mount; Sept. 2). PENNSYLVANIA - Ips pini killing white pine on 35-acre tract in Chester County; many trees damaged by construction activity. (Nichols; Pa. For. Pest Rpt., Aug. 14).

PINE ROOT COLLAR WEEVIL (Hylobius radicis) - NEW YORK - Caused some damage to Scotch and red pine plantings in northern Fulton County. (Northeast. For. Pest Rpt., Sept.).

PINE BARK WEEVILS - PENNSYLVANIA - Hylobius pales heavy on nursery block of Mugho pine in Centre County. (Collacott, Sept. 4). ARKANSAS - Increased activity by H. pales and Pachylobius picivorus observed in late August; probably result of cooler weather. As expected, these weevils most active in burned over areas or recently harvested stands. (Ark. For. Pest Rpt., Sept.).

WHITE-PINE WEEVIL (Pissodes strobi) - Damage continues severe in southern NEW YORK, NEW HAMPSHIRE and MAINE. Heavy attack (over 20 percent current weeviling) continued in west central PENNSYLVANIA counties in unprotected stands; in northern tier of counties, up to 90 percent attack reported in untreated stands. Current weeviling high in northwestern NEW JERSEY, particularly in planted trees and old fields. In southern WEST VIRGINIA (Mercer County), species reported to have increased. (Northeast. For. Pest Rpt., Sept.).

SPRUCE BUDWORM (Choristoneura fumiferana) - MAINE - Assessment of data from pilot test in Oxbow area using material Bacillus thuringiensis still in progress; may not be available until fall or winter. General impression is that material not effective in controlling C. fumiferana on spruce and fir in area. On regular spray project of approximately 500,000 acres, control rated as excellent on pre- and post-spray larval counts. In areas outside spray area, reduction of 35 percent from early to late larval populations occurred. Based on intensive egg mass survey now in progress over entire area, following general observations

can be made: Within spray area, only isolated heavy egg mass collections have been made; outside and west of general spray area, egg mass numbers in 1963 declined in comparison with previous year's data, but more sampling may change situation; in Oxbow area, where B. thuringiensis test conducted, current defoliation of spruce and fir heavy, as well as egg mass numbers; isolated area of infestation in Bancroft area, well south of general infestation, appears to be declining. (Northeast. For. Pest Rpt., Sept.).

AN OLETHREUTID MOTH (Eucosma gloriola) - PENNSYLVANIA - Causing more widespread concern on white and Scotch pine plantings. Distribution probably statewide. Moderate to heavy infestations noted during July in Butler, Adams, Bedford and Susquehanna Counties. (Kelly, Stewart, Nichols; Pa. For. Pest Rpt., Aug. 14). In Mercer County (western area), 10 percent of pines in white pine plantation attacked. Species relatively new to this area of State. NEW JERSEY - Damage by insect tentatively determined as this species, found in hybrid white pine in experimental plantation at Washington Crossing State Park. (Northeast. For. Pest Rpt., Sept.).

SPRUCE NEEDLE MINER (Taniva albolineana) - CALIFORNIA - Locally heavy on blue spruce in Susanville, Lassen County. Species subject to eradivative treatment. (Cal. Coop. Rpt.).

ZIMMERMAN PINE MOTH (Dioryctria zimmermani) - WEST VIRGINIA - Found in Scotch pine plantations in Boone and Mercer Counties. This believed to be first record for State, although recorded for some of surrounding States. (Northeast. For. Pest Rpt., Sept.).

LARCH CASEBEARER (Coleophora laricella) - RHODE ISLAND - Damage very minor this year in several larch plantations under observation. (Northeast. For. Pest Rpt., Sept.).

A PINE LOOPER (Lambdina athasaria pellucidaria) - MASSACHUSETTS - Adult emergence from overwintering pupae occurred about mid-June on Cape Cod; oviposition shortly thereafter. Eggs and young larvae observed on old pitch pine needles July 2. Infestation general throughout Barnstable County; heavy defoliation expected in Dennis, Truro, Mashpee and Falmouth. Application of Bacillus thuringiensis planned for early September if infestation persists; presently appears to be declining due to natural causes. (Northeast. For. Pest Rpt., Sept.).

TIP MOTHS - ARKANSAS - Activity generally spotty; damaging populations very local. Scattered summer rains favored tree growth in mid and late summer, thus trees tolerated attack better than in absence of good growth. (Ark. For. Pest Rpt., Sept.).

BALSAM WOOLLY APHID (Chermes piceae) - NORTH CAROLINA - Caused additional mortality to Fraser fir stands in Mt. Mitchell and Balsam Gap areas. Large scale outbreaks discovered on Roan Mountain and Grandfather Mountain and in Great Smoky National Park; located during survey by U. S. Forest Service. (For. Pest Newsltr.).

A PINE LEAF APHID (Pineus pinifoliae) - MAINE - Continues serious on white pine in eastern area. In northern Aroostook County, crooked-shaped pine branches, characteristic of damage by this species, noted in area near Oxbow. NEW HAMPSHIRE - Tips of white pine beginning to droop and die in nearly all areas where red spruce found in proximity to white pine. NEW YORK - In Hamilton County, new growth on pine being killed; also reported as heavy on white pine in northern Herkimer County. Heavy but local infestation reported in township of Parishville. (Northeast. For. Pest Rpt., Sept.).

A PINE APHID (Essigella pini) - PENNSYLVANIA - Caused severe defoliation of all except current year's growth on 60 acres of Scotch pine in Fayette County (Sept. 10); abundant on some Scotch pines in Indiana County, on all needles, but old needles yellow and dropping (Sept. 14). (Udine).

A RED-PINE SCALE (Matsucoccus resinosa) - NEW JERSEY - Surveys continue in northern part of State in area where eradication attempted. No further infestations found. (Northeast. For. Pest Rpt., Sept.).

PINE SAWFLIES (Neodiprion spp.) - PENNSYLVANIA - N. lecontei lightly defoliated red pine in Potter County. (Kane). Controls to be applied. (Pa. For. Pest Rpt., Aug. 14). N. lecontei heavy on few Mugho pines at Tunkhannock, Wyoming County. (Andreychik, Aug. 9). In Monroe County, virus common to N. sertifer used to suppress outbreak. NEW JERSEY - Populations of N. sertifer very low in northern half of State where previous damage heavy. Moderately infested plantation successfully treated with disease-causing virus of this pest. N. pratti paradoxicus and N. pini-rigidae also rare this spring in southern area, where both proved damaging in past as part of complex attacking pitch pine. MARYLAND - Full-grown N. lecontei larvae found in Garrett County. WEST VIRGINIA - Full-grown larvae of N. lecontei also found in Grant County. In adjoining Hardy County, larvae full grown by mid-September 1962. VIRGINIA - Adults and larvae of N. lecontei found August 6 in several young shortleaf pine plantings (2-5 feet tall) on Clinch Ranger District, Jefferson National Forest; some newly emerged larvae also found. Due to altitude and terrain, only one late generation occurs in area. N. pratti pratti lighter this year than in 1962. (Northeast. For. Pest Rpt., Sept.). ARKANSAS - Adult emergence of N. taedae linearis will begin in late September and early October. Foresters should watch for egg deposition in pine stands bordering areas defoliated past spring; this will provide indication of possible spread of this pest. No recent activity by N. lecontei noted. (Ark. For. Pest Rpt., Sept.). FLORIDA - Surveys during August showed N. excitans outbreaks deteriorated to endemic levels, with little or no tree mortality occurring in any area. (McCowan).

LARCH SAWFLY (Pristiphora erichsonii) - MAINE - In Washington County, where defoliation recorded on 28 numbered trees on study plot, current defoliation light; but somewhat heavier defoliation of larch noted in areas toward coast. NEW YORK - Heavy defoliation of planted European larch on Tombannock Reservoir, Rensselaer County, reported; in town of Greenwood, Steuben County, 50-60 acre Japanese larch plantation heavily defoliated. (Northeast. For. Pest Rpt., Sept.). PENNSYLVANIA - Caused moderate to heavy defoliation of Japanese and European larch in portions of Indiana, Lycoming and Clinton Counties. (Herman, Miller, Walker; Pa. For. Pest Rpt., Aug. 14).

ELM LEAF BEETLE (Galerucella xanthomelaena) - CALIFORNIA - Larvae medium on elms in Coalinga, Fresno County. (Cal. Coop. Rpt.). ARKANSAS - Populations forced to American elms in northwest area, as Chinese elms completely defoliated at time of third-generation emergence. Beetles will move into homes and other buildings soon to hibernate; probably cause much concern because of large numbers. (Ark. For. Pest Rpt., Sept.). ALABAMA - Continues to damage elms in Lee, Macon, Autauga and Perry Counties; however, attack possibly not as severe as previously reported. Heavy pupation noted about some elms in Perry County. (Hairston et al.). OHIO - Moderate to heavy damage noted on 5 elms in Miami County, west central. Trees half to three-quarters skeletonized; only adults present. (Lyon).

LOCUST LEAF MINER (Xenochalepus dorsalis) - PENNSYLVANIA - Caused 90 percent defoliation of black locust over small area of Fayette County. (Kurtz). Infestations in 1963 much reduced over severe defoliation of 1962. (Pa. For. Pest Rpt., Aug. 14).

ELM BARK BEETLES - NORTH CAROLINA - Scolytus multistriatus collected from elm in Forsyth County. This is a new county record. (Harmon, Farrier). ARKANSAS - Dutch elm disease found in Benton, Boone, Fulton and Searcy Counties this summer; this leaves only Baxter and Marion Counties, in northern tier, in which disease has not been found. (Ark. For. Pest Rpt., Sept.).

TWIG GIRDLER (Oncideres cingulata) - NEBRASKA - Twigs dropping from trees in Lincoln, Lancaster County. (Bergman). OKLAHOMA - Active in Stillwater area, Payne County (north central). (Okla. Coop. Sur.).

LOCUST BORER (Megacyllene robiniae) - NEBRASKA - Damaging locust trees in Swanton, Saline County. (Bergman).

A CERAMBYCID BEETLE (Glycobius speciosus) - PENNSYLVANIA - Active and girdling sugar maples over several acres of northern hardwoods in McKean, Crawford, Tioga and Susquehanna Counties. (Berglund; Pa. For. Pest Rpt., Aug. 14).

ELM CALLIGRAPH (Calligrapha scalaris) - SOUTH DAKOTA - Adults feeding on sap draining from cankers on Chinese elm trees at Winner, Tripp County. Several trees have died, but this can not be solely attributed to these beetles. (Hintz).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - OHIO - Light populations observed in Adams and Scioto Counties. (Mowbray, Blair).

A LEAF-MINING WEEVIL (Odontopus calceatus*) - NEW JERSEY - Single adult found August 1 on yellow-poplar in Warren County; several leaves mined by larvae also found in same area. Significance of find not clear; area to be watched closely. (Northeast. For. Pest Rpt., Sept.).

CARPENTERWORM (Prionoxystus robiniae) - NORTH DAKOTA - Larval damage reported from over State. Hosts are poplar and ash in yards and shelterbelts. (N. D. Ins. Sur.).

AMERICAN DAGGER MOTH (Acronicta americana) - NEVADA - Larvae light on silver maple (Acer saccharinum) in Reno, Washoe County. (Gallaway).

CATALPA SPHINX (Ceratomia catalpae) - OHIO - Larval populations failed to develop on catalpas throughout southwest this year. Complete defoliation of catalpas occurred in area at this date in 1962. (Wells). MICHIGAN - Larvae causing local damage in Ingham County. (Dowdy).

FALL WEBWORM (Hyphantria cunea) - PENNSYLVANIA - Black cherry apparently main host in west central counties. Hatching date in area estimated as late July, about one month later than in mountains of western Virginia. Infestations apparently decreased in western Pennsylvania from levels of 1962. NEW JERSEY - Infestations less abundant than in 1962. VIRGINIA - Adults and egg masses first noted June 24 on hickories and basswood along Blue Ridge Parkway; newly emerged larvae observed few days later. Larval webs encasing several leaves noted by mid-July. Cool weather in Blue Ridge Mountains prolonged development along Parkway. Early insect activity confined to hickories and basswood, but webs later found on black cherry, sourwood, blackgum and black walnut. Localized, heavy infestations along Blue Ridge Parkway sprayed in mid-July; adequate control obtained. (Northeast. For. Pest Rpt., Sept.). ARKANSAS - Infestations much heavier than usual across northwest part of State; large areas of persimmon, walnut, hickory and pecan trees completely defoliated this summer. (Ark. For. Pest Rpt., Sept.).

FALL CANKERWORM (Alsophila pomataria) - PENNSYLVANIA - Heavy populations destroyed by late freezes that also killed hardwood foliage. Larvae that escaped freezing probably died of starvation. NEW JERSEY - Common and abundant in west central counties; some areas nearly completely defoliated. At Ring Manor State Park, Passaic County, hundreds of large (18 to 24-inch d.b.h.) red and black oaks died this year following heavy defoliation in 1962. WEST VIRGINIA - Rare, due at least in part to late freezes that destroyed insects and foliage. (Northeast. For. Pest Rpt., Sept.).

SPRING CANKERWORM (Paleacrita vernata) - MASSACHUSETTS - Controls applied to 11,325 acres of woodland south of Boston in May and June. NEW YORK - Infestations appear to be declining in Rockland and Ulster Counties. PENNSYLVANIA - Light infestations in northern and southeastern counties made generally lighter by late

* Previously carried in CEIR as Prionomerus calceatus. Originally described as Odontopus calceatus by Say.

spring freezing temperature; however, late developing infestation causing moderate defoliation found in northern McKean County. A geometrid moth (*Operophtera bruceata*) may be component of infestation. MARYLAND - Oaks heavily defoliated in 1962 and 1963 in Bachmans Valley, Carroll County, reported being attacked by buprestid beetles. WEST VIRGINIA - Only occasional larvae found; rareness of species due at least in part to late freeze. (Northeast. For. Pest Rpt., Sept.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - MAINE - Defoliated poplar in area south of Caribou, Aroostook County. PENNSYLVANIA - Only few caterpillars observed, without defoliation, in Clarion, Clearfield and Mercer Counties, western area. Frost in late May at least partly responsible for low populations. NEW JERSEY - Investigation of heavily defoliated 100-acre area in Salem County (southwest) showed approximately 35 percent of pupae parasitized. Light infestation found on 2-acre oak stand in Hunterdon County, west central. (Northeast. For. Pest Rpt., Sept.).

LINDEN LOOPER (*Erannis tiliaria*) - VERMONT - Commonly found associated with gypsy moth (*Porthetria dispar*) in Bennington County. MASSACHUSETTS - General infestations declining throughout State. As expected, heavy hatch occurred about May 1, but disease and parasites quite effective in reducing larval populations. NEW YORK - Hardwoods being defoliated in Hamilton County from town of Long Lake north to county line; noted as abundant in towns of Hope and Wells and caused some annoyance to people using picnic areas on Lake Durant and Lewey Lake. At Lake Eaton, campsite treated June 12 to prevent damage. Beech and birch apparently suffer most from defoliation in Hamilton and northern Fulton Counties. Light defoliation recorded in townships of Clifton, Colton, Fine and Piercefield in Adirondack Mountains. Defoliation also noted in Osceola, Highmarket, Montague and Worth in Jefferson and Lewis Counties. PENNSYLVANIA - Heavy larval numbers nearly eliminated by late spring freeze. (Northeast. For. Pest Rpt., Sept.).

VARIABLE OAK LEAF CATERPILLAR (*Heterocampa manteo*) - OKLAHOMA - Larvae defoliating pin oaks in Stillwater area, Payne County (north central); also feeding in Shawnee area, Pottawatomie County (central). (Okla. Coop. Sur.).

AN OAK LEAF ROLLER MOTH (*Argyrotoxa semipurpurana*) - PENNSYLVANIA - Heavy populations, chiefly this species, expected to cause heavy defoliation, failed to survive late spring freeze. NEW JERSEY - Defoliation to nearly 100 percent found in north central area, where populations were common and abundant. Other spring defoliators minor components of populations. Refoliation has masked damage of heavily defoliated trees. (Northeast. For. Pest Rpt., Sept.).

CHAIN-SPOTTED GEOMETER (*Cingilia catenaria*) - PENNSYLVANIA - Outbreak developed over approximately 50 acres in Monroe County; trees and shrubs completely defoliated, including scrub oak, pin cherry, pitch pine, blueberries and sweetfern. (Denniston; Pa. For. Pest Rpt., Aug. 14).

GYPSY MOTH (*Porthetria dispar*) - MAINE - Two adults captured in Northfield and single collections made from traps in Alexander and Plantation 14 E. D., Washington County. NEW HAMPSHIRE - Large number of egg parasites observed in Red Hill section of Moultonboro; up to 5 parasitic flies per single egg mass. VERMONT - Single collections made in Bakersfield, Enosburg and Montgomery, Franklin County, and in Cambridge and Hyde Park, Lamoille County. NEW YORK - Three traps yielded 9 males in Brownville, Jefferson County, south and southwest of area treated last spring. At site 1.5 miles from treated area, 100 or more new egg masses found. In other areas outside of regulated area, adults recovered from 7 traps in 3 towns in Franklin County and 15 traps in 2 towns in Hamilton County. In suppressive area of State, 291 traps in Orange County, 57 traps in Rockland County and 148 traps in Westchester County attracted 1,027 adults. In Nassau County, 21 traps yielded 35 specimens and, in Sullivan County, 38 traps attracted only 61 moths. Only 2 moths captured in suppressive

area in central New York; one each in Oneonta and Exeter townships, Otsego County. Intensity of recoveries in southern area of State reveals serious spread from generally infested areas to north and east. PENNSYLVANIA - Total of 21 males recovered from 12 traps in Northampton, Monroe and Pike Counties; egg clusters found at 3 of 5 sites in Northampton County. (PPC, East. Reg., Aug. Rpt.).

BROWN-TAIL MOTH (Nygmia phaeorrhoea) - NEW HAMPSHIRE - Four adults trapped at Hooksett and 1,443 (1,356 males and 87 females) trapped at Loudon, Merrimack County; winter webs clipped and destroyed at Hooksett site last spring. (PPC, East. Reg., Aug. Rpt.).

GEOMETRID MOTHS - PENNSYLVANIA - Moderate numbers of Calocalpe undulata causing moderate "flagging" on all black cherry over 100 acres in Union County. (Miller; Pa. For. Pest Rpt., Aug. 14). C. undulata nearly absent on black cherry in west central area, where sufficiently abundant in 1962 to cause browning of hillsides. (Northeast. For. Pest Rpt., Sept.). VIRGINIA - Phigalia titea caused heavy defoliation of hardwoods, mostly oaks, in Lee Ranger District, George Washington National Forest, in 1962 and 1963. Peak adult emergence in 1963 occurred March 23-26, and egg hatch on or very close to April 3. Initially, only available food was green tissue of barely opened buds of bushes and trees in understory, mainly blueberry and hickory; these supported large number of small larvae, but great numbers died from failure to reach food. Continued warm weather resulted in increased food supply and P. titea larvae that survived on buds heavily defoliated stand. (Northeast. For. Pest Rpt., Sept.).

NORWAY-MAPLE APHID (Periphyllus lyropictus) - OHIO - Moderate to heavy on maples in Wayne, Stark and Summit Counties, northeast. Ranged 6-8 stem mothers and 30-40 nymphs per leaf on infested trees. Premature leaf drop prevalent in most instances. (Neiswander, Lyon). ALABAMA - Ranged 25-100 per leaf on ornamental maple in Marion and Perry Counties; causing 50 percent leaf drop. (Hairston).

BEECH BLIGHT APHID (Prociphilus imbricator) - NORTH CAROLINA - Infestations much lighter this season than previous 2 years in local area of Wake County. (Graham).

SYCAMORE LACE BUG (Corythucha ciliata) - MICHIGAN - Adults and nymphs still common on sycamores discolored earlier in Ingham County. (Evans).

HACKBERRY-NIPPLE-GALL MAKER (Pachypsylla celtidismamma) - COLORADO - Numerous on hackberry trees in Sedgwick County. (Hantsbarger).

AN OAK PIT SCALE (Asterolecanium minus) - PENNSYLVANIA - Caused dying of chestnut oak over 1,000 acres in Cameron County; incidence of infestation increasing. (Sevinsky). As reported in 1962 and 1963, this species again on increase in State over many areas. Trees suffering severe dieback probably will not survive, especially in view of dry weather. Trees should be salvaged if possible before they become infested with wood borers. (Pa. For. Pest Rpt., Aug. 14). In Lancaster and York Counties (southeast), thousands of chestnut oaks died in 1963. This species believed to be major force in complex of unfavorable events and agents resulting in widespread mortality. (Northeast. For. Pest Rpt., Sept.).

BIRCH LEAF MINER (Fenusa pusilla) - MAINE - Current damage apparently not as severe in southern area as in 1962. NEW HAMPSHIRE - In northern section, heavy damage occurred on much of the birch in Littleton-Franconia area for second year. Elsewhere in NEW ENGLAND, pest commonly reported. NEW YORK - Browning of white and gray birch has been particularly noticeable. (Northeast. For. Pest Rpt., Sept.). PENNSYLVANIA - Medium to Heavy on white birch in Columbia County nurseries. (Collcott, Aug. 9).

A LEAF MINER - ARIZONA - An undetermined species defoliating cottonwood trees in Yuma County. (Ariz. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - PENNSYLVANIA - Very abundant and causing considerable defoliation of ornamentals in Dauphin-Cumberland County area. Questionable if treatment this late will give satisfactory control. (Nichols; Pa. For. Pest Rpt., Aug. 14). MARYLAND - Larvae caused heavy injury to several arborvitae at Adamstown, Frederick County. (U. Md., Ent. Dept.).

AZALEA CATERPILLAR (Datana major) - NORTH CAROLINA - Larvae caused extensive damage to azaleas in Bladen County. (Davis, Robertson; Sept. 13).

MIMOSA WEBWORM (Homadaula albizziae) - OHIO - Moderate on honeylocust trees throughout west central and southwest areas. (Lyon).

A NOTODONTID MOTH (Schizura ipomeae) - OKLAHOMA - Causing limited defoliation of roses in Stillwater area, Payne County (north central). (Okla. Coop. Sur.).

A WEBWORM (Loxostege sp.) - ALABAMA - Very heavy on marigolds and completely enveloped many flowers in gardens in Mobile County; also appearing on clovers. (Seibels).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - PENNSYLVANIA - Light to medium on taxus nursery stock in Sunbury, Northumberland County (Collacott, Sept. 15); killing 18 to 24-inch taxus stock in nursery in Cambria County (Udine, Sept. 14). MICHIGAN - Adults present on yew in Presque Isle County. (Butcher).

A FLEA BEETLE (Epitrix brevis) - MARYLAND - Adults heavily injured Chinese lanternplants in an Adamstown garden, Frederick County. (U. Md., Ent. Dept.).

APHIDS - MICHIGAN - Pterocomma smithiae adults and nymphs numerous on ornamental willows in Ingham and Kent Counties. (Gedda). Nymphs and adults of various species numerous on some sugar maples and other ornamentals in Ingham and Wayne Counties. (Kidd). OHIO - Populations of undetermined species building up in east central areas. (Easterling, Blair). CALIFORNIA - Lachnus salignus adults heavy on willows in Loyalton, Plumas County. (Cal. Coop. Rpt.).

AZALEA LACE BUG (Stephanitis pyrioides) - GEORGIA - Heavy on azaleas in Tifton area, Tift County. (Ratcliffe, Phillips; Sept. 13).

A LEAF-FOOTED BUG (Leptoglossus zonatus) - ARIZONA - Damaging backyard plantings of pomegranates in Pinal County. (Ariz. Coop. Sur.).

COCCIDS - PENNSYLVANIA - Neolecanium cornuparvum heavy on magnolia in a block in Montgomery County nursery August 12 (Cole); crawlers present on magnolia in Centre County September 3 (Collacott). Lecanium fletcheri heavy on 1-acre block of taxus in Bradford County nursery. (Andreychik, Aug. 15). Aspidiotus hederæ ranged medium to heavy on English ivy in greenhouse at Quarryville, Lancaster County. Det. by G. B. Slesman. (Negley, Aug. 22). Lepidosaphes yanagicola heavy on euonymus at State park at Presque Isle, Erie County. (Wolff, Aug. 18). NORTH CAROLINA - Eriococcus azaleæ infested azaleas in Orange County. (Robertson, Aug. 28). FLORIDA - Pseudoaonidia clavigera moderate on Camellia sp. at St. Petersburg, Pinellas County. (Bingaman, Sept. 11). Aspidiotus spinosus light on stem of Camellia japonica at Tampa, Hillsborough County. (Hale). MICHIGAN - Unaspis euonymi crawlers numerous on infested plants in Lower Peninsula area. (Hoffman). CALIFORNIA - Dactylopius indicus heavy on opuntia cactus in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Adults of strain infesting crab apple trees on Michigan State University campus still common; 5 females and 18 males collected with aspirator in 15 minutes on September 19; pairs still observed mating; females noted ovipositing; dissected females contained egg masses. (Dowdy).

HORN FLY (Haematobia irritans) - ALABAMA - Ranged 200-300 per animal on herd in Perry County under poor management. None found on animals examined in Perry and Elmore Counties where control programs good. (McQueen). OKLAHOMA - Heavy on cattle in north central areas, with up to 1,500-2,000 per head on cows in Kay and Noble County area. Counts per head in Stillwater area (Payne County) ranged 1,500-1,600 on steers, 1,000-1,200 on dairy cattle and over 3,000 on bulls. Moderate to heavy counts also reported from southeast, south central, central and northeast areas. (Okla. Coop. Sur.). MISSOURI - Populations extremely high on untreated cattle in north central and northeast areas. (Wingo). NEBRASKA - Averaged approximately 250 per beef animal on Custer County rangeland. (Bergman).

HORSE FLIES (Tabanus spp.) - OKLAHOMA - Heavy on animals in Pushmataha County (southeast); averaged 8 per head. Averaged 2 per animal in low places in Stillwater area, Payne County (north central). (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - WISCONSIN - Populations continue high in Bayfield County. Reported annoying humans in Iowa County. (Wis. Ins. Sur.). OHIO - Heavy on several beef herds in Brown County, southwest. Heaviest counts 75-100 per face. (Wells). MISSOURI - Counts higher on cattle in north central area than any previous counts this summer. Counts on 4 herds in area as follows: 2-15, average 7.4; 0-7, average 1.8; 0-10, average 4.7; 0-21, average 5.6. (Wingo). IDAHO - Not found on horses, cattle or sheep at 69 roadside locations in 14 eastern and southern counties surveyed. (Portman).

HOUSE FLY (Musca domestica) - OHIO - Populations heavy at homes, livestock barns and other buildings throughout many southwest areas. (Wells). OKLAHOMA - Heavy on refuse pile in a Kay County locality. Flies moving into buildings and sheltered areas seeking winter quarters. (Okla. Coop. Sur.). WYOMING - Becoming annoying to homeowners in many areas by entering homes. (Marks). UTAH - Very numerous about a milk farm and a dairy farm at Perry, Box Elder County. Annoying in and about homes west of Ogden, Weber County. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - ALABAMA - Annoying to fishermen and surf bathers at Dauphin Island, Mobile County, since September 1. (Seibels).

MOSQUITOES - ARIZONA - Culiseta inornata continues to increase in Yuma County; becoming serious nuisance to homeowners. (Ariz. Coop. Sur.). NEW MEXICO - Unspecified species very annoying to residents in many sections of Las Cruces, Dona Ana County. (N. M. Coop. Rpt.). UTAH - Unspecified species causing some annoyance in fields and meadows in Perry-Willard area of Box Elder County. (Knowlton). TEXAS - Light, widespread populations occurring in Lubbock County as follows: Culex tarsalis 53 percent; Culex pipiens quinquefasciatus 31 percent. (Breedlove). During July, Psorophora confinnis was common throughout Jefferson County, occasionally becoming numerous; Anopheles spp. present in northern portion of county. (Jefferson Co. Mosq. Cont. Comm.; July Rpt.). NORTH CAROLINA - Anopheles quadrimaculatus and Anopheles punctipennis averaged 28 per dip in lake near Lexington, Davidson County; ratio of 2 species, 27 to 7. (Ashton, Sept. 13).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Causing considerable concern in eastern two-thirds of State. (Okla. Coop. Sur.). NORTH CAROLINA - Contact with this species caused severe reaction in woman in Wake County. (Wray). Caused severe pain to another woman in Wilson County. (Robertson).

SADDLEBACK CATERPILLAR (Sibine stimulea) - NORTH CAROLINA - Caused considerable irritation to young woman in Wake County. (Wray).

HONEY BEE (Apis mellifera) - MICHIGAN - Nuisance colonies common in dwellings and trees in Sanilac, Shiawassee and Ingham Counties. (Pettrilli).

HORNETS AND WASPS - WISCONSIN - Unspecified hornets causing some concern in Vilas County. Vespa spp. annoying in picnic areas, being particularly attracted to meat. (Wis. Ins. Sur.).

BROWN DOG TICK (Rhipicephalus sanguineus) - ARIZONA - Exceedingly heavy in Casa Grande and Coolidge areas of Pinal County. (Ariz. Coop. Sur.).

EAR TICK (Otobius megnini) - NORTH CAROLINA - Removed from ear of girl in Pitt County; person recently returned from Southwest. Det. by W. G. Bruce. (Mount, Sept. 13).

HOUSEHOLD AND STRUCTURAL INSECTS

CRICKETS - ALABAMA - Gryllus spp. invaded city of Demopolis; downtown sidewalks in many places with 2-10 per square foot. Emerging from cellars, vents and other hiding places. Hundreds hopping and flying, moving under doors and invading business establishments and in display windows. A ground beetle (Calosoma sp.) and American cockroach (Periplaneta americana) feeding on dead and injured crickets. (McQueen). MICHIGAN - Adults and nymphs of undetermined field crickets more numerous than during other years in many areas of Lower Peninsula. Reports of adults invading homes and numbers of insects per house much more numerous than usual in September. (Terry, Kidd). WISCONSIN - Gryllus spp. particular nuisance in Walworth and Waukesha Counties. (Wis. Ins. Sur.). ARIZONA - Gryllus spp. becoming problem in homes and business establishments throughout State. (Ariz. Coop. Sur.). COLORADO - Field crickets numerous in homes in Otero and Mesa Counties. (Jenkins, Bulla).

WILLOW FLEA WEEVIL (Rhynchaenus rufipes) - RHODE ISLAND - Infesting trees and climbing house foundations in Narragansett, Washington County. (Mathewson).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - MICHIGAN - Annoying in homes. (Scheibner, Kidd).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - RHODE ISLAND - Adults continue converging on buildings near fields in Middletown area, Washington County. (Peabody).

ELM LEAF BEETLE (Galerucella xanthomelaena) - COLORADO - Nuisance around home in Mesa County. (Bulla). OKLAHOMA - Movement into homes and other sheltered areas causing some concern; will continue throughout coming months. (Okla. Coop. Sur.).

YELLOW MEALWORM (Tenebrio molitor) - MICHIGAN - Annoying in homes. (Scheibner, Kidd).

INDIAN-MEAL MOTH (Plodia interpunctella) - OKLAHOMA - Causing some concern in Stillwater area homes, Payne County. (Okla. Coop. Sur.).

ANTS - MICHIGAN - Flying forms annoying in homes. (Scheibner, Kidd). RHODE ISLAND - Emergence of Acanthomyops interjectus winged forms noted around house foundations in Warwick, Kent County. (Cartier).

BOXELDER BUG (Leptocoris trivittatus) - COLORADO - Moving into homes in Weld, Jefferson and Larimer Counties. (Hantsbarger). MICHIGAN - Complaints from homeowners indicate adults and nymphs becoming troublesome as household invaders in many areas of Lower Peninsula. (Hoffman, Henry, Kidd). VIRGINIA - Creating nuisance in home in Lexington, Rockbridge County. (Tarpley). PENNSYLVANIA - Becoming nuisance in homes in Dauphin County. (Simons).

SPRINGTAILS - COLORADO - Nuisance around homes and farmsteads in Larimer, Weld and Pueblo Counties. (Hantsbarger, Haines).

CLOVER MITE (Bryobia praetiosa) - COLORADO - Moving into homes in Weld, Jefferson and Larimer Counties. (Hantsbarger).

STORED-PRODUCT INSECTS

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - NORTH DAKOTA - Appearing in newly stored grain in southeast. (N. D. Ins. Sur.).

BLACK CARPET BEETLE (Attagenus piceus) - NORTH DAKOTA - Larvae and adults noted in grain storage establishments at Minot. (N. D. Ins. Sur.).

RED FLOUR BEETLE (Tribolium castaneum) - NEVADA - Heavy in stored barley near Lovelock, Pershing County. (Ferraro).

Stored Grain Insects in Alabama - Tenebroides mauritanicus, Tribolium confusum, Oryzaephilus surinamensis, Rhyzopertha dominica and Lasioderma serricorne Found in abundance during warehouse inspections in Mobile County. (McQueen).

BENEFICIAL INSECTS

LADY BEETLES - ALABAMA - Chilocorus stigma most conspicuous predator of black pecan aphid (Melanocallis caryfoliae) where present on pecans. (Deavours, Sexton, et al.). Coccinella novemnotata feeding on pea aphid (Acyrtosiphon pisum) in Elmore County. Hippodamia convergens very plentiful and feeding on aphids infesting cotton; few H. glacialis noted in Lee County cotton. Coleomegilla maculata fuscilabris common and second in importance to H. convergens in cotton and grain sorghum; both species feeding on corn leaf aphid (Rhopalosiphum maidis) infesting grain sorghum. (McQueen). WYOMING - Adults of several species averaged 32 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

A PUNCTURE-VINE WEEVIL (Microlarinus lareynii) - UTAH - Infesting numerous seeds of puncture-vine where released at Perry, Box Elder County. (Knowlton, Allred).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults averaged 36 per 100 sweeps in alfalfa in Fremont, Washakie, Hot Springs and Big Horn Counties. (Marks).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - Intensive foliage treatment at Port Erie Airport, PENNSYLVANIA, during August prevented hazardous conditions. No treatments needed at Stewart Air Force Base, NEW YORK, for first time in several seasons. Very little infestation noted in NEW JERSEY at airports treated during previous control operations. (PPC, East Reg., Aug. Rpt.). Trapping discontinued in MICHIGAN in most locations. Some collections made in new locations outside of treated area in Monroe and Lenawee Counties. Infestations now known in Battle Creek, Ypsilanti, Grand Rapids, Flint and new spot locations within Detroit area. Some mist blowing used to reduce heavy populations in certain areas in Battle Creek. Peak flight reached August 4-10 in OHIO. Adults found for first time at Greenville and Smithboro, Bond County, at Salem, Marion County, and at Vandalia, Fayette County, ILLINOIS. Most trapping being discontinued. (PPC, Cent. Reg., Aug. Rpt.). OHIO - Adults still observed in Huron County, north central, and Portage County, northeast; 2 traps in Huron County yielded 9 live adults. (Wolfe). TENNESSEE - Adults trapped in new areas in Carter, Cocke, Hawkins, Jefferson, Johnson, Knox, Polk and Sullivan Counties but no infestations heavy. (PPC., South. Reg., Aug. Rpt.). NORTH DAKOTA - Trapping negative during season. (N. D. Ins. Sur.). NEVADA - Adult trapping surveys negative for 1963 in Clark, Elko and Washoe Counties. (Coop. Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - Collected for the first time at Southington, Hartford County, CONNECTICUT; at Batavia, Genesee County, Cortland, Cortland County, and Plattsburgh, Clinton County, NEW YORK; and in Erie, Erie County, PENNSYLVANIA. Extensions of known infestations found in Cayuga, Niagara and Schuyler Counties, New York, and Hudson County, NEW JERSEY. (PPC, East. Reg., Aug. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Delimiting survey continued in Norfolk, VIRGINIA, and spot checks made throughout remainder of State; specimens at 3 locations in vicinity of Norfolk collected. (PPC, East. Reg., Aug. Rpt.). Intensive surveys made in north and central FLORIDA; heavy infestation found near Tallahassee, Leon County. Found for the first time in Bay County at Panama City. In GEORGIA, new infestations and extensions of old areas found in several counties. New county records include Gwinnett, Whitfield and Worth Counties. Intensive and extensive surveys in ALABAMA resulted in finding of several new infestations including new records for De Kalb and Morgan Counties. Extensions of infestation in Attala County, MISSISSIPPI, found and first find in Webster County recorded. Collected for the first time in East Feliciana Parish, LOUISIANA. Surveys in ARKANSAS revealed several small infestations in known infested counties. Extensions also found in TENNESSEE, none extensive. In the CAROLINAS, extensions or new infestations found in nearly all infested counties. Adults collected for first time in Cabarrus County, NORTH CAROLINA. (PPC, South. Reg., Aug. Rpt.). ALABAMA - Few adults feeding on courthouse lawn in Choctaw County. (Deavours, Sexton).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Extensions or new infestations found in many previously infested counties of FLORIDA; few mounds still active in treatment blocks. Appraisal surveys in Bryan and Effingham Counties, GEORGIA, negative and only one mound found in Tifton block. All appraisal surveys in treated blocks in ALABAMA show good results. Specimens collected for first time in Tishomingo County, MISSISSIPPI. Aerial treatment completed on Mississippi State University campus in Oktibeha County and on part of adjoining area in Webster County. Appraisal survey in Brookhaven where retreatment believed necessary now shows satisfactory results. Several blocks in Smith and Lawrence Counties released after first part of 2 application treatment. Inspections made in north LOUISIANA parishes show some extensions of infested area. Appraisal surveys in treated blocks show good results. Appraisal surveys in treated areas of Brazoria, Fort Bend and Montgomery Counties, TEXAS, favorable. Delimiting survey made in Harris County and highway right-of-way treated in Montgomery County. (PPC, South. Reg., Aug. Rpt.). ALABAMA - Heavy in young pine in south end of Chambers County; lesser infestations noted in Dallas, Perry and Choctaw Counties. (McQueen).

DINGY CUTWORM (Feltia subgothica) - OHIO - Blacklight trap collections indicate heavy flights at Wooster (432), Wayne County, and Hoytville (92), Wood County. (Rings, Triplehorn).

PALE WESTERN CUTWORM (Agrotis orthogonia) - COLORADO - Appearing in light trap at Rocky Ford and observed around neon lights in eastern area. (Schweissing, Jenkins).

A BUTTERFLY (Cisseps fulvicollis) - ALABAMA - Quite common on goldenrods in central area. (McQueen).

MAYFLIES - ALABAMA - Enormous numbers transforming to winged stage on Alabama River at Selma and alighting on bridge at 7:30 p.m. in subimago stage; large numbers in this stage noted. Females by thousands heavy with eggs. (McQueen).

SPIDERS (Argiope spp.) - WISCONSIN - A. aurantia and A. trifasciata aroused much comment due to abundance in many areas. (Wis. Ins. Sur.).

AN EARTHWORM MITE (Fuscuropoda agitans) - CALIFORNIA - Heavy in earthworm beds in Grass Valley, Nevada County, and in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Tomatoes (for processing) IN Maryland DURING 1962
 (Commodity) (State or District) (Year)

| | | | |
|----|---|---|-------------------------------------|
| A. | Pest or pest complex | <u>Aphids, flea beetles, hornworms (Protoparce spp.), Drosophila spp.</u> | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>9,400</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>11.8 tons</u> |
| D. | Price ^b per unit (ton) ^c (From CRS) | \$/ | <u>30.60 (season average price)</u> |
| E. | <u>Acres</u> ^a needing control | No. | <u>9,400</u> |
| F. | <u>Acres</u> ^a treated | No. | <u>7,200</u> |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | % | <u>20</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>2.36 tons</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>72.22</u> |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>---</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>5,192 tons</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>11.25</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>81,000</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>158,884</u> |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>---</u> |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>239,884</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|--|---|--------|------------------------------------|--------|-------------|
| ATTACKING | <u>Soybeans (for beans)</u> | IN | <u>Maryland</u> | DURING | <u>1962</u> |
| | (Commodity) | | (State or District) | | (Year) |
| <p>Japanese beetle, spider mites, green cloverworm, bean leaf beetle, Mexican bean beetle, corn earworm</p> | | | | | |
| A. | Pest or pest complex | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>280,000</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>20.5 bu.</u> | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.30 (season average price)</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>75,000</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>less than 1,000</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>10</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>2.05 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>4.72</u> | | |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>---</u> | | |
| L. | Yield loss for all <u>acres</u> ^a , E x I | Units | <u>153,750 bu.</u> | | |
| M. | Control cost, \$ per <u>--</u> ^a | \$/ | <u>---</u> | | |
| N. | Control cost for all <u>--</u> ^a , F x M | \$ | <u>---</u> | | |
| O. | Yield loss for all <u>acres</u> ^a , E x J | \$ | <u>354,000</u> | | |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>---</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>354,000</u> | | |

Comment: Yield loss only determined since total acreage treated was negligible.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Corn (for grain) IN Maryland DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|---|--|--|
| A. Pest or pest complex | <u>Cutworms, corn earworm, sap beetles, European corn borer, fall armyworm</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | <u>No. 354,000</u> | |
| C. Average yield per <u>acre</u> ^a (From CRS) | <u>Units/ 60 bu.</u> | |
| D. Price ^b per unit (<u>bu.</u>) ^c (From CRS) | <u>\$/ 1.28 (season average price)</u> | |
| E. <u>Acres</u> ^a needing control | <u>No. 100,000</u> | |
| F. <u>Acres</u> ^a treated | <u>No. less than 1,000</u> | |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | <u>% 10</u> | |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | <u>Units/ 6 bu.</u> | |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | <u>\$/ 7.68</u> | |
| K. Loss in quality, \$ per <u>--</u> ^a | <u>\$/ ---</u> | |
| L. Yield loss for all <u>acres</u> ^a , E x I | <u>Units 600,000 bu.</u> | |
| M. Control cost, \$ per <u>--</u> ^a | <u>\$/ ---</u> | |
| N. Control cost for all <u>--</u> ^a , F x M | <u>\$ ---</u> | |
| O. Yield loss for all <u>--</u> ^a , E x J | <u>\$ 768,000</u> | |
| P. Quality loss for all <u>--</u> ^a , (E-F) x K | <u>\$ ---</u> | |
| Q. Combined control cost and losses, N + O + P | <u>\$ 768,000</u> | |

Comment: Yield loss only determined since total acreage treated was negligible.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|-----------|--|--|--|--------------------------|-----------------------|
| ATTACKING | <u>Clover-timothy</u> (Commodity) | IN | <u>Maryland</u> (State or District) | DURING | <u>1962</u> (Year) |
| A. | Pest or pest complex | <u>Aphids, clover weevils, meadow spittlebug, plant bugs</u> | | | |
| B. | Number of <u> </u> acres ^a produced (From CRS) | | No. | <u>212,000</u> | |
| C. | Average yield per <u> </u> acre ^a (From CRS) | | Units/ | <u>1.30 tons</u> | |
| D. | Price ^b per unit (tons) ^c (From CRS) | | \$/ | <u>30.00 (estimated)</u> | |
| E. | <u> </u> Acres ^a needing control | | No. | <u>212,000</u> | |
| F. | <u> </u> Acres ^a treated | | No. | <u>75,000</u> | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | <u>15</u> | |
| I. | Loss in yield, units per <u> </u> acre ^a , C x H | | Units/ | <u>0.20 tons</u> | |
| J. | Loss in yield, \$ per <u> </u> acre ^a , D x I | | \$/ | <u>6.00</u> | |
| K. | Loss in quality, \$ per <u> </u> ^a | | \$/ | <u>--</u> | |
| L. | Yield loss for all <u> </u> acres ^a , (E-F) x I | | Units | <u>27,400 tons</u> | |
| M. | Control cost, \$ per <u> </u> acre ^a | | \$/ | <u>3.00</u> | |
| N. | Control cost for all <u> </u> acres ^a , F x M | | \$ | <u>225,000</u> | |
| O. | Yield loss for all <u> </u> acres ^a , (E-F) x J | | \$ | <u>822,000</u> | |
| P. | Quality loss for all <u> </u> ^a , (E-F) x K | | \$ | <u>---</u> | |
| Q. | Combined control cost and losses, N + O + P | | \$ | <u>1,047,000</u> | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | <u>Alfalfa</u> (Commodity) | IN | <u>Maryland</u> (State or District) | DURING | <u>1962</u> (Year) |
|-----------|---|----|--|--------|--------------------------|
| A. | Pest or pest complex <u>Alfalfa weevil, pea aphid, meadow spittlebug, potato leafhopper</u> | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | | No. | | <u>92,000</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | | Units/ | | <u>2.10 tons</u> |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | | \$/ | | <u>40.00 (estimated)</u> |
| E. | <u>Acres</u> ^a needing control | | No. | | <u>92,000</u> |
| F. | <u>Acres</u> ^a treated | | No. | | <u>85,000</u> |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | | <u>30</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | | Units/ | | <u>0.63 tons</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | | \$/ | | <u>25.20</u> |
| K. | Loss in quality, \$ per <u>--</u> ^a | | \$/ | | <u>---</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | | Units | | <u>4,410 tons</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | | \$/ | | <u>5.00</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | | \$ | | <u>425,000</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | | \$ | | <u>176,400</u> |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | | \$ | | <u>---</u> |
| Q. | Combined control cost and losses, N + O + P | | \$ | | <u>601,400</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Tobacco (Commodity) | IN | Maryland (State or District) | DURING | 1962 (Year) |
|-----------|---|--|---------------------------------|--------|----------------|
| A. | Pest or pest complex | Aphids, tobacco flea beetle, hornworms (Protoparce spp.), budworms (Heliothis spp.) | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 41,500 | | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 950 lbs. | | |
| D. | Price ^b per unit (lb.) ^c (From CRS) | \$/ | .60 (1961 season average price) | | |
| E. | Acre ^a needing control | No. | 41,500 | | |
| F. | Acres ^a treated | No. | 30,000 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | 18 | | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | 171 lbs. | | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | 102.60 | | |
| K. | Loss in quality, \$ per -- ^a | \$/ | --- | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | 1,966,500 lbs. | | |
| M. | Control cost, \$ per acre ^a | \$/ | 5.63 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 168,900 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 1,179,900 | | |
| P. | Quality loss for all -- ^a , (E-F) x K | \$ | --- | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 1,348,800 | | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Harding

Date 4-16-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|-----------|---|--|--|--------|-----------------------|
| ATTACKING | <u>Apples</u> (Commodity) | IN | <u>Colorado</u> (State or District) | DURING | <u>1962</u> (Year) |
| A. | Pest or pest complex | <u>Codling moth, apple grain aphid, apple aphid, two-spotted spider mite, San Jose scale</u> | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>4,810</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>363 bu.</u> | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.00</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>4,810</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>4,630</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>5.9</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>21.4 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>42.80</u> | | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>2.00</u> | | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>3,852</u> | | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>12.00</u> | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>55,560.00</u> | | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>7,704.00</u> | | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>360.00</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>63,624.00</u> | | |

Comment: Mites and aphids caused the greatest amount of loss in the apple producing areas.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leonard E. Jenkins

Date 2-14-63

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

BAGRADA BUG (Bagrada hilaris (Burm.))

Economic Importance: The bagrada bug is an important pest of crucifers and some other crops in parts of Africa and Asia. It damages plants much the same way as the harlequin bug (Murgantia histrionica (Hahn)) in North America and, from all reports, appears to be just as destructive, if not more so, than this bug. Bagrada bug has long been a pest of considerable importance in South Africa. It is abundant and destructive during the dry months, but is not serious during the wet months of the year. Damage has been estimated at hundreds of pounds sterling each year. Bagrada bug is also regarded as a major pest of crucifers in West Pakistan and India. B. picta F. and B. cruciferarum Kirk. are in synonymy with B. hilaris (Burm.).

Distribution: Recorded in Burma, Ceylon, Ethiopia, India, Iraq, Iran, Italy, Kenya, Northern and Southern Rhodesia, Republic of South Africa, Sicily, Tanganyika, West Pakistan, Uganda, United Arab Republic (Egypt) and U.S.S.R.

Hosts: Crucifers are the principal host plants, especially cabbage, turnip, rape, mustard, radish, cauliflower, etc. Plants of other families are also injured, but to lesser extent. Some of these cultivated crops are beans, peas, cowpeas, barley, oats, wheat, corn, sorghum, sugarcane, beet, carrot, foliage of citrus, hollyhock, artichoke, lettuce, chrysanthemum, dahlia, coffee and cotton. Among the native host plants are numerous crucifers and some grasses.

Life History and Habits: The biology as studied in Republic of South Africa is as follows: Eggs are laid under lumps of soil; usually singly, but sometimes in two's and three's. Hatching occurs in 8 to 14 days, depending on the temperature. Nymphs molt five times in 50 to 81 days. They feed largely during daylight hours when it is warm, hiding during the late afternoon and night between leaves of plants, under lumps of soil and in rubbish of gardens and fields. Adults are very active and migrate rapidly. Pairing takes place soon after the bug reaches the adult stage and, shortly after copulation, the males die. The females deposit eggs 7 to 10 days later and then die in 8 to 14 days. The number of generations is variable and they overlap. Four or five is the usual number. The total number of days for development ranged 58 to 81 days in the insectary at Pretoria during 1914-1915 and 1916-1917. Weather conditions are important factors influencing development. Wet and cold conditions retard development a number of days.

In India, it was observed that this pest was greatly susceptible to changes in weather conditions and its populations varied in accordance with the shelter available in the crop. It protected itself from cold of winter or heat of summer by remaining under thick foliage, weedy or lodged crop, within the loose folds of leaves, crevices in soil or interspaces under clods, and it migrated from the crop which did not provide it suitable shelter. When disturbed, the pest ran in all directions and adults took flight only when greatly disturbed. The suitable temperature range for feeding was 70° F. to 102° F., with 90° F. being the optimum. It was rarely found feeding under exposed conditions. Peak populations occur during the spring.

Description: Coloration and markings variable, depending on the area. In South Africa, the description is as follows: EGG - Broadly oval, less than one mm. in length; creamy-white at first, turning orange to reddish. NYMPH - First stage about one mm. in length. Head and thorax black. Abdomen deep orange with row of black spots down center and another of black triangles around edge; black spots become larger after each molt until only a few reddish spots remain on abdomen. ADULT - Small, depressed, 4-7 mm. (0.16-0.28 inches) in length, male only about two-thirds as large as female. Triangular in general outline. General color black, with numerous symmetrically arranged orange and yellow streaks and spots on both dorsal and ventral surfaces; ventral surface nearly all yellow in most specimens. (Prepared in Survey and Detection Operations, in cooperation with other ARS agencies).



Adults of Bagrada hilaris (Burm.), Showing Variation

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

CORN EARWORM populations causing considerable damage to soybeans in Allendale County, South Carolina; populations low on soybeans in Virginia and Arkansas. (p. 1173). SORGHUM MIDGE adults found in Graham County, Arizona. (p. 1174). MEADOW SPITTLEBUG survey in Ohio indicates probable damage across central area of State in 1964 in contrast to little economic damage in northern and southeastern areas. (p. 1175).

Several severe infestations of a PINK CITRUS RUST MITE (Aculus pelekassi) reported on Florida citrus. (p. 1178).

Adults of POTATO TUBERWORM continue active in Monroe County, Michigan, and controls being applied to eggplant in Harris County, Texas. (p. 1178). Treatments necessary to protect lettuce against TOMATO FRUITWORM and CABBAGE LOOPER in Dona Ana County, New Mexico, and latter pest numerous on lettuce in Yuma and Maricopa Counties, Arizona, but parasites preventing rapid population increases. (p. 1179).

BOLLWORM continues a pest of cotton in California, Arizona, New Mexico and Texas. PINK BOLLWORM heavy locally in Victoria County, Texas, and larvae found on lint cleaners at Safford gin in Graham County, Arizona. (p. 1181).

PINE NEEDLE SCALE causing severe damage to spruce in many localities in eastern Colorado (p. 1183), and BLACK PINE LEAF SCALE seriously damaging ponderosa pine in Spokane County, Washington (p. 1189). ELM LEAF BEETLE severely damaged elms in southern Union County, Ohio, and at Inchelium, Ferry County, Washington. (pp. 1183, 1189). TWIG PRUNERS girdled branches of elm and hickory in Douglas County, Kansas, and pruned numerous twigs from elms, hickory, persimmon and some other trees in southwest Missouri. (pp. 1184, 1189).

CORRECTIONS and ADDITIONAL NOTES

See page 1189.

DETECTION

In Delaware, a NOCTUID MOTH (Bomolocha abalienalis), a CHRYSALID MOTH (Galasa rubidana) and a GRASS MOTH (Crambus elegans) all recorded for the first time. (p. 1188). New county records of significance were WHITE-FRINGED BEETLES in Thomas County, Georgia (p. 1188) and ELM LEAF BEETLE in Doniphan County, Kansas (p. 1189).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1185).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Crops in Kansas and Georgia During 1962.

Army cutworm on wheat in Kansas. (p. 1192).

Corn earworm on corn for grain in Kansas. (p. 1193).

Southern corn rootworm on peanuts in Georgia. (p. 1194).

Estimated Damage and Crop Loss Caused by Insect/Mite Pests in California - 1962. (pp. 1195-1202).

WEATHER BUREAU 30-DAY OUTLOOK

OCTOBER 1963

The Weather Bureau's 30-day outlook for October calls for temperatures to average below seasonal normals in states bordering the Atlantic, the Gulf of Mexico, and the Appalachians. Above normal averages are predicted for the remainder of the nation except for near normal in the eastern Lakes and Ohio Valley. Precipitation is expected to exceed normal over New England, the South Atlantic States, and the Pacific Northwest. Near normal amounts are indicated for the Middle Atlantic, West Gulf, and Southwest border states. In the remainder of the country subnormal rainfall is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 30

Maritime polar air pushed into the Pacific Northwest at the beginning of the week. It brought light rain to Washington, and, as it moved eastward, to Idaho, Montana, and the northern Great Plains. By Tuesday the front stretched from the Red River Valley of the North to the Oklahoma Panhandle. Light rains, generally less than an inch, fell over the northern and central Great Plains. A stationary front, draped across Florida, dumped drenching rains throughout most of the week over the entire Peninsula.

A huge mound of high pressure dominated the weather over the eastern half of the Nation. Afternoon temperatures ranged generally from the 50's and 60's over the North Central and Northeast to the upper 70's and lower 80's along the Gulf and lower Atlantic coasts. Subfreezing temperatures occurred on several mornings over most of New England and New York, and the higher elevations of Pennsylvania, Virginia, and West Virginia, and some of the mountain areas of North Carolina. Thursday morning this high pressure area united with one which lay over the Great Basin. The front which had separated them was pushed aloft and high pressure and fair weather prevailed from the Great Basin to the Atlantic Ocean.

While the middle and eastern portions of the country were enjoying comfortable temperatures characteristic of the early fall season, easterly winds over the Far Southwest overcame the usual sea breezes and carried the 100° heat from the deserts to the coast of southern California. This upset the familiar diurnal temperature regime. The Los Angeles Weather Bureau Office registered 107° on Wednesday and on Thursday the mercury at Los Angeles Airport rose to 110°. A record-breaking 111° occurred at San Diego, and El Toro, the hottest place in southern California, registered 113°. Afternoon temperatures at Los Angeles exceeded 100° on every afternoon for 5 days beginning Wednesday.

Temperatures averaged above normal north and west of a line from El Paso, Texas, to Chicago, Illinois, and below normal south and east of that line. The largest negative departures were over northeastern New York and northwestern Vermont. The largest positive departures were in the Los Angeles vicinity where temperatures averaged 16° above normal due to 5 consecutive days with afternoon temperatures above 100°.

Light rains fell over much of Washington and nearby areas in Idaho and Montana. Very little rain fell elsewhere west of 100° longitude. Generous rains, generally exceeding 1 inch, fell over the area south and east of a line from Mobile, Alabama, to Albany, New York, and extending on into New England. Some localities received several inches. Precipitation in some spots in Florida exceeded 8 inches. Some snow fell in extreme northern portion of New England on Monday, September 23. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

CORN EARWORM (*Heliothis zea*) - VIRGINIA - Practically no active infestations in soybean fields checked in King George, Westmoreland, Richmond, Northumberland, Lancaster, Essex, Middlesex, Gloucester, King and Queen, New Kent and Charles City Counties. Most fields (up to 75 percent in some counties) treated during weeks of September 9 and 16. Controls excellent and very little damage noted. In only few fields was damage over 25 percent (based on pods damaged). (Tarpley). SOUTH CAROLINA - Drought has seriously damaged soybeans in Allendale County; however, populations of this species heavier than usual during August and currently inflicting considerable damage to crop by feeding on leaves and pods. (Nettles et al., Sept. 24). ALABAMA - Numerous on late corn and sorghum in Lee, Chambers and Tallapoosa Counties. (Barwood). MICHIGAN - Adult catches at blacklight traps continue to increase; very few larvae found in field corn in Ingham County September 21. (Newman). NEBRASKA - Late field corn 80 percent infested in Lincoln County. (Pruess). ARKANSAS - Averaged 14-25 per 100 sweeps in alfalfa in Phillips County. Infestations in soybeans down to low level; no economic infestations found or reported in past 2-3 weeks. (Ark. Ins. Sur.). OKLAHOMA - Ranged 1-4 per 10 sweeps on alfalfa in Pauls Valley area. Moderate, 6 per 10 sweeps, in Altus area, southwest. Heavy in late sorghum in Garfield County, northwest. (Okla. Coop. Sur.). UTAH - Damage moderate this season in Iron County sweet and field corn. (Knowlton, Sjoblom). Only up to 10 percent of sweet corn ears "wormy" in general area of Spanish Fork, Utah County, before present canning season ended. This was about one-half of count at end of 1962 season in that area. (Dorst, Knowlton). ARIZONA - Infestations found in corn in Graham, Yuma and Maricopa Counties; 50 percent of ears infested in Graham County. (Ariz. Coop. Sur.). NEVADA - Medium to heavy larval populations, with medium damage to ears of sweet corn, in Diamond Valley, Eureka County. (Earnist).

FALL ARMYWORM (*Laphygma frugiperda*) - ARIZONA - Infesting sorghum fields in Yuma County. Light in some alfalfa fields in Maricopa and Pinal Counties; averaged 20 per 100 sweeps. (Ariz. Coop. Sur.). TEXAS - Heavy populations causing considerable damage to pastures and small grains in Brazos, Burleson, Hill, Comanche, Montgomery and Ochiltree Counties. (Tex. Coop. Rpt.). OKLAHOMA - Moderate infestations present in grain sorghum in Garfield County. Lighter counts noted in alfalfa in Jackson County. Infestations in wheat and rye in Okarche, El Reno and Yukon areas (central) averaged fewer than 1 per foot of row. (Okla. Coop. Sur.). NEBRASKA - Late field corn 15 percent infested in Lincoln County. Fall-seeded grains should be watched. (Pruess). NORTH CAROLINA - Destroyed most of 30-acre mixture of fescue, ladino clover, orchardgrass and bluegrass in Chatham County. Larvae feeding on field of newly seeded fescue in Randolph County. (Tart, Snider, Mount).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ILLINOIS - Total of 50 fields of corn examined in Randolph, Union, Alexander, Pulaski, Pope, Massac and Johnson Counties, southern area; 3 stalks found girdled in field at Olmsted, Pulaski County, approximately 10 miles north and slightly east of first find (Alexander County) this past spring. One larva and a pupa, believed to be this species, found at location. (Ill. Ins. Rpt.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEBRASKA - Light infestations present in Jefferson and Thayer Counties; fourth and fifth-stage larvae present. Fall survey underway. (Bergman). MINNESOTA - Second-generation larvae a problem in ears of market sweet corn in Minneapolis-St. Paul area. (Minn. Ins. Rpt., Sept. 20). MICHIGAN - Adult flight as determined by blacklight trap catches continues downward. (Newman, Laser, Wells). DELAWARE - Adult collections in blacklight trap in Sussex County considerably reduced; averaged 6 per night September 18-24. (Burbutis).

SUGARCANE BORER (*Diatraea saccharalis*) - TEXAS - Occurring on late grain sorghum in Brazos and Burleson Counties; about 5-10 percent of stalks infested. (Randolph).

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Causing light local damage to pearl millet in Cochran County. (Tex. Coop. Rpt.; Hanson).

RICE DELPHACID (Sogatia orizicola) - FLORIDA - This species and Sogatia sp. found lightly infesting rice at Belle Glade, Palm Beach County, on September 13. (Faircloth).

CORN LEAF APHID (Rhopalosiphum maidis) - NEBRASKA - Considerable numbers still present in corn fields in Jefferson, Thayer and Nuckolls Counties. Some corn plants have purple color which could be caused by feeding injury. (Bergman). UTAH - Very numerous on corn locally near Ogden, Weber County. (Knowlton).

CHINCH BUG (Blissus leucopterus) - TEXAS - Found in head as well as about roots of grain sorghum in Brazos and Burleson Counties; 60-75 percent of plants infested. (Randolph).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Local infestations appearing in late grain sorghum in Brazos and Burleson Counties. (Randolph). ARIZONA - Adults found in two sweet sorghum fields near Lonestar, Graham County; averaged 65 per 100 sweeps. (Ariz. Coop. Sur.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NEBRASKA - Adults still present in Lancaster County field; however, populations decreased considerably from previous week. (Bergman).

FLEA BEETLES - WISCONSIN - Survey to determine presence of corn flea beetle (Chaetocnema pulicaria) conducted July 16 in Iowa County. Collections made from corn leaves, but actual feeding damage not observed. Determinations by G. B. Vogt revealed following species: Phyllotreta cruciferae; Phyllotreta sp., probably striolata; Phyllotreta sp., probably bipustulata; Psylliodes sp.; and Chaetocnema sp., probably pulicaria. (Wis. Ins. Sur.).

A CRICKET (Nemobius fasciatus) - NEBRASKA - Approximately 1 per square yard in a Jefferson County cornfield. (Bergman).

WHEAT CURL MITE (Aceria tulipae) - COLORADO - Found on volunteer wheat in area near Amherst, Phillips County. (Jenkins).

PEA APHID (Acyrtosiphon pisum) - MARYLAND - Counts of 50-175 per sweep common on alfalfa in Carroll and Frederick Counties. (U. Md., Ent. Dept.). VIRGINIA - Ranged 1-200 per 10 sweeps on alfalfa in vicinity of Steeles Tavern, Augusta County. (Woodside). OHIO - Moderate to heavy populations present in many west central and southwest counties; heaviest counts 1,800 per 50 sweeps on alfalfa in Greene County. (Lyon). MINNESOTA - Averaged 2,500 per 100 sweeps in central area; predators generally low in area. (Minn. Ins. Rpt.). NORTH DAKOTA - Counts 5-20 per sweep on alfalfa in eastern one-fourth of State. (N. D. Ins. Sur.). WYOMING - Counts 1,800-2,000 per 100 sweeps on alfalfa in Sheridan, Johnson and Natrona Counties. (Marks). OKLAHOMA - Counts 20-200 per 10 sweeps on alfalfa in Garfield and Grant Counties, northwest area. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - SOUTH DAKOTA - Counts per 100 sweeps along James and Missouri Rivers averaged 75 in Bon Homme County, 62 in Davison County, 57 in Sanborn County, 8 in Beadle County and 23 in Spink County. None found in Yankton County. (Hintz). MISSOURI - Counts in alfalfa in southwest ranged 0-400 per 10 sweeps. (Munson, Thomas, Wood). ARKANSAS - None found in alfalfa in Lee and Phillips Counties, east central. (Ark. Ins. Sur.). OKLAHOMA - Light to moderate, 50-750 per 10 sweeps, present in Pauls Valley area with some honeydew secretions observed on foliage in localized spots; 10-100 per 10 sweeps noted in Grant and Garfield County area. (Okla. Coop. Sur.). COLORADO - Populations decreased to low numbers in most areas, but some fields in Prowers County still produce 50-2,000 per 100 sweeps. (Schweissing).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults ranged 1-2 per sweep on alfalfa in Carroll and Frederick Counties. (U. Md., Ent. Dept.). OHIO - Populations higher than in 1962 based on survey. Damage across central area probable next spring in contrast to little economic damage in northern and southeastern areas. (Treece).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - FLORIDA - Lightly infesting soybeans at Barraneau Park, Escambia County. (Peacock, Sept. 12). ARIZONA - Large adult populations exist in blooming alfalfa in Graham County; averaged 1,000 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - OHIO - Averaged 12 per 50 sweeps in alfalfa in Marion County, central area. (Lyon). NORTH DAKOTA - Trace numbers on alfalfa in southeast. (N. D. Ins. Sur.). WYOMING - Adults averaged 18 per 100 sweeps in Sheridan, Johnson and Natrona County alfalfa. (Marks).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MARYLAND - Adults common in alfalfa in Carroll and Frederick Counties. (U. Md., Ent. Dept.). NORTH DAKOTA - Trace numbers on alfalfa in southeast. (N. D. Ins. Sur.).

PLANT BUGS - MINNESOTA - *Lygus* spp. and *Adelphocoris* spp. averaged 500 per 100 sweeps in alfalfa in central district. (Minn. Ins. Rpt.). WYOMING - Adults of *Lygus* spp. averaged 26 per 100 sweeps in Sheridan, Johnson and Natrona County alfalfa. (Marks).

POTATO LEAFHOPPER (*Empoasca fabae*) - MINNESOTA - Averaged 600 per 100 sweeps on alfalfa in central district. (Minn. Ins. Rpt.).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - SOUTH CAROLINA - Extremely numerous and causing defoliation of kudzu in Clemson area on September 7. This is heaviest damage and largest population of pest observer ever noted in State. (Nettles).

ALFALFA WEEVIL (*Hypera postica*) - MARYLAND - Adults ranged 0-4 per 10 sweeps and larvae 0-7 per sweep on alfalfa checked in Carroll and Frederick Counties. Some pupation noted. (U. Md., Ent. Dept.). VIRGINIA - Larvae ranged 0-6.6 per square-foot-pan sample in Montgomery County alfalfafield. (Pienkowski, Sept. 17). No larvae or adults found in 6 fields sampled in Appomattox and Campbell Counties (3 fields each county). Larvae ranged 1-18 per 100 sweeps (averaged 6) in alfalfa in vicinity of Steeles Tavern, Augusta County. (Woodside). No larvae or adults encountered in fields checked in Bedford, Campbell, Appomattox and King George Counties. (Tarpley). ARKANSAS - None found in Lee and Phillips Counties, east central area. (Ark. Ins. Sur.).

BLISTER BEETLES (*Epicauta* spp.) - OKLAHOMA - *E. pennsylvanica* and *Epicauta* sp. ranged 0-8 per 10 sweeps on alfalfa in Pauls Valley area, south central. (Okla. Coop. Sur.).

BANDED CUCUMBER BEETLE (*Diabrotica balteata*) - FLORIDA - Lightly infesting soybeans at Barraneau Park, Escambia County. (Peacock, Sept. 12).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - FLORIDA - Lightly infesting soybeans at Barraneau Park, Escambia County. (Peacock, Sept. 12). MISSOURI - Moderate to heavy populations observed on late soybeans in southwest area; ranged 3-13 per foot of row. (Munson, Thomas, Wood).

A WHITE-FRINGED BEETLE (*Graphognathus* sp.) - GEORGIA - Moderate infestation on foliage of peanuts in Decatur County. (Stephens).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MINNESOTA - Counts in alfalfa declined in nearly all fields; averaged 50 per 100 sweeps in central district. (Minn. Ins. Rpt.). WYOMING - Larvae averaged 16 per 100 sweeps in alfalfa in Sheridan and Johnson Counties. (Marks). NEBRASKA - Adults very active in alfalfa in Jefferson, Nuckolls and Thayer Counties. (Bergman). UTAH - Moderately numerous

in some alfalfa fields in Davis County. (Knowlton). ARIZONA - Decreases found in alfalfa in Yuma, Graham, Maricopa and Pinal Counties; 125-150 per 100 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Moderate to heavy infestations in alfalfa in Artesia area, Eddy County; growers treating where infestations heavy. (N. M. Coop Rpt.).

GREEN CLOVERWORM (Plathypena scabra) - MISSOURI - Light infestations observed on late soybeans in southwest; ranged 0-5 larvae per foot of row. Numerous adults observed in fields and vegetation around soybean fields. (Munson, Thomas, Wood). OKLAHOMA - Counts 3-8 per 10 sweeps and up to 25 per 10 sweeps in individual fields in Pauls Valley area, south central. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Attacking peanuts in Atoka, Pontotoc, Bryan, Marshall, Carter, Hughes and Johnston Counties. (Okla. Coop. Sur.).

PALE WESTERN CUTWORM (Agrotis orthogonia) - COLORADO - Increasing in southeastern area; averaged 8 per night in light trap at Rocky Ford. (Schweissing).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Small infestations found in nearly all alfalfa in Graham, Maricopa and Pinal Counties; averaged 25 larvae per 100 sweeps. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ARIZONA - Larvae found in alfalfa in Pinal and Maricopa Counties; averaged 25 per 100 sweeps. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Light counts, fewer than 2 per 10 sweeps, present in alfalfa in Jackson County, southwest, and 1-4 per 10 sweeps in Pauls Valley area. (Okla. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Heavy, 100-200 per 10 sweeps, noted on alfalfa in Grant and Garfield Counties, northwest. Only light infestations observed in south central area. (Okla. Coop. Sur.). ARIZONA - Larvae caused considerable damage to alfalfa in Pinal County; averaged 80 per 100 sweeps. (Ariz. Coop. Sur.).

GRASSHOPPERS - ALABAMA - Grasshopper nymphs and crickets causing extensive damage to volunteer stands of crimson and white clovers in 2 and 3-leaf stage in Lee, Chambers, Tallapoosa and Macon Counties. (Barwood). UTAH - Populations decreased markedly in several Davis and Salt Lake County localities recently. (Knowlton). Varied from moderate to damaging in Iron County farms and rangelands. (Knowlton, Sjoblom). NORTH DAKOTA - Some grasshoppers remain active in alfalfa and on roadsides in southeast; ranged 1-5 per square yard on roadsides and from a trace to 3 per square yard in alfalfa; Melanoplus sanguinipes and M. bivittatus dominant species. (N. D. Ins. Sur.).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - OHIO - Most abundant species in southwest; "hoppers" quite abundant in alfalfa and red clover fields. (Lyon). WISCONSIN - Continues to feed actively, but alfalfa growth good and injury masked. Oviposition still in progress. (Wis. Ins. Sur.). NEBRASKA - Approximately 8 per square yard in field margins in Jefferson County. (Bergman).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Larvae over 20 per square foot in pasture locally in Haywood County. (Davis, Mount).

A SOD WEBWORM (Crambus bonifatellus) - CALIFORNIA - Heavy populations in lawns in Santa Paula, Ventura County. (Cal. Coop. Rpt.).

A LAWN CHINCH BUG (Blissus leucopterus prob. insularis) - TEXAS - Damage to lawns in eastern and southeastern areas continuing. (Thomas).

THRIPS (*Chirothrips* spp.) - ARIZONA - Causing some damage to Bermuda grass in Yuma County; many fields being treated. (Ariz. Coop. Sur.).

FRUIT INSECTS

AMERICAN PLUM BORER (*Euzophera semifuneralis*) - OHIO - Collected at Shaker Heights, Cuyahoga County. (Holdsworth). TEXAS - Causing light, local damage to plum trees in Bastrop County. (Clemons). CALIFORNIA - Causing considerable damage; heavy on recently budded plum buds in Placerville, El Dorado County, and light on peach fruit in Penryn, Placer County. (Cal. Coop. Rpt.).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - OHIO - Moderate to heavy in peach orchard at Wooster, Wayne County; 10-20 "strikes" per tree noted in several instances; few larvae collected. (Forsythe).

PEACH TWIG BORER (*Anarsia lineatella*) - ALABAMA - Attacking plum and peaches in Montgomery County. (McCabe).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - OHIO - Caused moderate tip injury on young peach trees near Springfield, Clark County. (Lyon).

RED-HUMPED CATERPILLAR (*Schizura concinna*) - CALIFORNIA - Medium on apple trees in Arnold, Calaveras County, and at Mariposa, Mariposa County. (Cal. Coop. Rpt.).

APPLE MAGGOT (*Rhagoletis pomonella*) - SOUTH CAROLINA - Infested fruit of first crop of Golden Delicious apples from young trees at Long Creek, Oconee County. (Nettles et al., Sept. 10). OHIO - Moderate to severe damage noted on apples in home orchard in Union County; 2 adults noted on fruits. (Lyon). MICHIGAN - Total of 17 adults collected in 15 minutes with aspirator September 26 in East Lansing from crab apples; 9 females and 8 males. Females still contain eggs. "Stings" very numerous on fruit which continues to ripen and fall. (Dowdy).

EUROPEAN RED MITE (*Panonychus ulmi*) - OHIO - Eggs abundant on fruit and twigs of Cortland apples in orchard at Wooster, Wayne County; 250-300 eggs at each calyx. (Lyon, Forsythe).

WALNUT HUSK FLY (*Rhagoletis completa*) - CALIFORNIA - Heavy in walnut husks in Paicines, San Benito County. (Cal. Coop. Rpt.). Local infestations in yard trees becoming more noticeable this season in Sacramento, Sacramento County, and West Sacramento, Yolo County; caused many inquiries from homeowners. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (*Datana integerrima*) - ALABAMA - Several groups pupated from pecans in Lee County; this represents last generation of 1963. (McQueen).

PECAN LEAF CASEBEARER (*Acrobasis juglandis*) - ALABAMA - Light to medium on pecans from Mobile County northward as far as surveyed in central area. Currently in small, crooked, frass-covered tunnels on underside of leaf instead of its normal cases of early and later generations. (Eden et al.).

HICKORY SHUCKWORM (*Laspheyresia caryana*) - ALABAMA - Now in full pupation throughout most of State; extent of damage to pecans remaining on trees can now be seen. Population and damage appears to depend on time of infestation and location of larvae feeding in shucks. (Barwood et al.).

A FALSE POWER-POST BEETLE (*Xylobiops basilaris*) - ALABAMA - Specimens noted on injured and dying limbs of pecans in Lee, Tallapoosa, Elmore, Hale, Montgomery and Autauga Counties. (McQueen).

BLACK PECAN APHID (*Melanocallis caryaefoliae*) - CALIFORNIA - Heavy on yard trees locally in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A PYRRHOCORID BUG (Largus cinctus californicus) - CALIFORNIA - Medium in walnut planting in Templeton, San Luis Obispo County; adults and nymphs present. (Cal. Coop. Rpt.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Light on Robinson tangerine at Mascotte, Lake County, (Henderson, Brown, Sept. 5); on Rubidoux trifoliolate orange at Orlando, Orange County, (Burditt, Sept. 19); on trifoliolate orange at Electra-Moss Bluff area, Marion County, (Graham, Sept. 18); on Cochran navel orange at Orlando (Burditt, Sept. 19). Moderate on satsuma leaves at Paisley, Lake County. (Bentley, Aug. 29). Severe on Citrus sp. leaves at Orlando. (Burditt, Sept. 19). Infested leaves of Citrus spp. at Mascotte (Henderson, Sept. 17); light on leaves of Citrus sp. at La Belle, Hendry County (Smith, Sept. 6); severe on leaves of sweet orange at Wachula, Hardee County (Lamb, Aug. 28) and moderate on leaves at Mount Dora, Lake County (Bentley, Sept. 13). On leaves of sweet orange at Electra and Lynne, Marion County. (Graham, Sept. 11-18).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Large numbers of larvae present in orange groves in Yuma County; few reported in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

A LEAF-FOOTED BUG (Leptoglossus zonatus) - ARIZONA - Infested citrus trees and ornamentals in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

WESTERN SUBTERRANEAN TERMITE (Reticulitermes hesperus) - CALIFORNIA - Heavy on citrus trees in Ducas, Tulare County; condition of trees not indicated. (Cal. Coop. Rpt.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Occurring on fig trees in Pico-Rivera, Los Angeles County. (Cal. Coop. Rpt.).

YELLOW-NECKED CATERPILLAR (Datana ministra) - OHIO - Larvae infested blueberry plants near Lisbon, Columbiana County. (Myers, Holdsworth, Sept. 24).

A SPIDER MITE (Tetranychus mcdanieli) - WISCONSIN - Nearly defoliated alpine currants earlier at Madison; det. by R. L. Smiley. (Wis. Ins. Sur.).

LEAFHOPPERS (Erythroneura spp.) - NEVADA - Heavy on grape leaves in Las Vegas, Clark County. (Zoller).

GRAPE BERRY MOTH (Paralobesia viteana) - MARYLAND - Heavy feeding noted on Concord grapes at Fallston, Harford County. (U. Md., Ent. Dept.).

A CUBAN MAY BEETLE (Phyllophaga bruneri) - FLORIDA - Severe on lychee at Miami, Dade County. (Murphy).

TRUCK CROP INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Adults totaled over 125 in blacklight trap near Samaria, Monroe County, week ending September 23; trapping to continue to determine length adults remain active in fields. Special cultural control practices and spraying recommended to protect 1964 crop. (Newman, Wells, Guyer, Laser, Holdsworth). TEXAS - Larvae feeding as leaf miners on eggplants in Harris County; 75 percent of leaves infested and average of 3 adults per plant noted. Some feeding inside of fruit also occurring; controls underway. (Davis, Larsen). UTAH - Infestation at Beryl, Iron County, appears very light. (Knowlton, Sjoblom).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - VIRGINIA - Severe in snap beans locally, James City County. (Tarpley, Bryant, Sept. 14). GEORGIA - Heavy on southern peas in Miller County. (Powell, Sept. 19).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - VIRGINIA - Severely damaged pods of blackeye peas locally, James City County. (Tarpley, Bryant, Sept. 15). DELAWARE - High larval infestations noted since September 14 in peppers in several inadequately treated small fields. (Burbutis). MICHIGAN - Commercial pepper growers in Monroe County obtained effective control; untreated peppers in Ingham County research plots with 25 percent fruit infestation. (Newman, Laser, Wells).

TOMATO FRUITWORM (*Heliothis zea*) - GEORGIA - Moderate on pods of okra in Macon County. (Mathis). NEW MEXICO - Eggs abundant on young plants in Dona Ana County lettuce fields; treatment necessary every 4 days to protect plants. (N. M. Coop. Rpt.). COLORADO - Egg counts ranged 1-9 per 100 leaves; not economically important. Light trap catches average 73 per night at Rocky Ford. (Schweissing).

BEE T ARMYWORM (*Laphygma exigua*) - ARIZONA - Larvae damaged lettuce in Yuma and Maricopa Counties; averaged 45 per 100 sweeps. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Numerous in lettuce in Yuma and Maricopa Counties; parasites preventing rapid population increases. (Ariz. Coop. Sur.). NEW MEXICO - Eggs abundant on young lettuce in fields in Dona Ana County; controls necessary. (N. M. Coop. Rpt.). GEORGIA - Moderate to heavy on foliage of sweetpotatoes in Worth County. (Middleton). MARYLAND - Light on broccoli and cabbage at Fairland, Montgomery County. (U. Md., Ent. Dept.).

VELVETBEAN CATERPILLER (*Anticarsia gemmatilis*) - GEORGIA - Moderate to heavy on foliage of sweetpotatoes in Lanier County. (Zeigler, Moore).

SWEETPOTATO LEAF ROLLER (*Pilocrocis tripunctata*) - ALABAMA - Damaged sweetpotatoes in several patches near Theodore, Mobile County; 70 percent of leaf surface destroyed in some instances. (Seibels).

SWEETPOTATO HORNWORM (*Agrilus cingulatus*) - GEORGIA - Moderate to heavy on foliage of sweetpotatoes in Worth County. (Middleton).

ONION MAGGOT (*Hylemya antiqua*) - NEVADA - Light, larval infestations in sections of onion fields now being harvested in Smith Valley, Lyon County. (Hilbig).

A LEAF MINER FLY (*Liriomyza* sp.) - FLORIDA - Infested 100 percent of 100 celery plants. (Desin, Sept. 20).

SPINACH LEAF MINER (*Pegomya hyoscyami*) - WYOMING - Second-generation larvae appearing in sugar beet fields of Sheridan and Johnson Counties; harvest started September 25. (Marks).

BEE T LEAFHOPPER (*Circulifer tenellus*) - UTAH - Curly top damage to tomatoes and numbers of this species light in Iron County. (Knowlton, Sjoblom). CALIFORNIA - Final aerial mapping of Russian-thistle acreages in western San Joaquin Valley completed September 20. Total of 285,000 acres scheduled for treatment. Russian-thistle elimination crews covered 77,176 acres of rangeland and 5,560 miles of roadside this season. (Cal. Coop. Rpt.).

GREEN PEACH APHID (*Myzus persicae*) - DELAWARE - Continues heavy on some peppers in Sussex County. (Burbutis). MICHIGAN - Remains active on potatoes and peppers in research plots in East Lansing area, Ingham County. (Wells).

CABBAGE APHID (*Brevicoryne brassicae*) - MICHIGAN - Colonies still active on cabbage and cauliflower in Ingham County research plots. (Wells).

MARGINED BLISTER BEETLE (*Epicauta pestifera*) - GEORGIA - Light to moderate feeding damage noted on southern peas in Atlanta area. (Woodliff, Sept. 20).

TOBACCO WIREWORM (*Conoderus vespertinus*) - NORTH CAROLINA - Injury to sweetpotatoes now being harvested very light in Benson-Newton Grove area. (Mount).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Moderate to heavy feeding occurring on late tobacco in Anne Arundel and Calvert Counties. (U. Md., Ent. Dept.). OHIO - Moderate on tobacco fields near Portsmouth, Scioto County. Det. by G. B. Vogt. (Lyon, Sept. 25).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Light to moderate on late tobacco in Anne Arundel and Calvert Counties. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Numerous adults emerging from top bolls as they open. Extensive feeding noted on squares and blooms where present, especially on lowland areas of fields and river bottom farms. Second growth now occurring in some fields and food plentiful. (Alsobrook, Barwood, et al.). ARKANSAS - Scattered infestations present. (Ark. Ins. Sur.). TEXAS - Heavy, local populations causing damage in Garza and Anderson Counties. (LaRue, Aguire).

BOLLWORM (Heliothis zea) - CALIFORNIA - Infestations generally light in Shafter area although a few fields show considerable infestation; larvae ranged 2-3 to as high as 8-9 per 100 terminals. Larvae may continue to be a problem throughout San Joaquin Valley for next 2-3 weeks. (Leigh, Sept. 24). ARIZONA - Decreased populations found in Graham, Pinal, Maricopa and Yuma Counties; however, enough larvae remain to cause serious damage to bolls of top crop in cotton fields in above counties. (Ariz. Coop. Sur.). NEW MEXICO - Continues a problem in Dona Ana County cotton fields. (N. M. Coop. Rpt.). TEXAS - Light to moderate local damage reported from Hockley and Garza Counties. (Tex. Coop. Rpt.).

BOLLWORMS (Heliothis spp., et al.) - ALABAMA - Egg laying and feeding on squares and bolls occurring in lowland areas. (Barwood et al.). ARKANSAS - Scattered infestations present. (Ark. Ins. Sur.). OKLAHOMA - Of collections made September 20 from experimental plots in Chickasha area, 30 percent were *H. virescens*. Damage continues in irrigated cotton in southwest. Populations apparently on decline in Chickasha area as smaller numbers of first to third-stage larvae present than on previous checks. (Okla. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Larvae found on lint cleaners on 21 bales of cotton ginned at Safford gin in Graham County. (Ariz. Coop. Sur.). TEXAS - Heavy, local infestations appearing in Victoria County. (Tex. Coop. Rpt.; Bales). OKLAHOMA - Number of larvae found in gin trash inspections 7 per 100 bushels of trash in Bryan County, 2 per 35 bushels of trash in Coal County, 2 per 20 bushels of trash in Comanche County, 4 per 25 bushels of trash in Love County and 5 per 100 bushels of trash in Marshall County. Lint cleaner inspections in Custer, Jackson, Kiowa, McIntosh and Washita Counties negative; inspections positive in Caddo, Coal and Muskogee Counties. (Okla. Coop. Sur., PPC).

COTTON LEAFWORM (Alabama argillacea) - ALABAMA - Noted on cotton in Chambers, Lee, Tallapoosa and Macon Counties; first report of season. Appearance too late to be of economic significance. (Barwood). ARKANSAS - Scattered infestations present. (Ark. Ins. Sur.). OKLAHOMA - Heavy infestations caused extensive defoliation of cotton in eastern part of State. Most cotton matured and production not hurt. (Okla. Coop. Sur.). NEW MEXICO - Moth flight extremely heavy nights of September 24-26 in southern Dona Ana County as far north as Radium Springs. Heavy larval infestation expected during coming week. (N. M. Coop. Rpt.). ARIZONA - Populations still exist near Solomon in Graham County; 300-500 per 100 cotton plants. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - CALIFORNIA - Some fields in Shafter area showing moderate infestations, with larvae feeding in bolls. Controls may be necessary if considerable boll damage is occurring. (Leigh, Sept. 24).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Infestations ranged from very light to heavy throughout San Joaquin Valley and severe defoliation evident in some fields where controls not undertaken. (Leigh, Sept. 24). ARIZONA - Continues present in large numbers in Graham County; few fields treated. (Ariz. Coop. Sur.). ARKANSAS - Scattered infestations present. (Ark. Ins. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Continues to cause considerable damage to many cotton fields in Yuma, Pinal and Maricopa Counties. (Ariz. Coop. Sur.). CALIFORNIA - Heavy populations developing along eastern part of Imperial Valley, Imperial County, requiring treatments to protect late-fruiting cotton. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Larval increases noted in Graham, Pinal, Maricopa and Yuma Counties; averaged 120-150 per 100 plants in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Light populations present in some fields in Kern County, with some boll damage evident. For the most part, control should not be necessary. (Leigh, Sept. 24).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Evident in cotton fields adjacent to rose nurseries; continues to feed on squares and bolls. In most cases, damage light; however, controls may be necessary where extensive boll feeding is occurring. (Leigh, Sept. 24).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Considerable damage to small bolls evident in some fields in Shafter area; controls recommended to prevent further damage. (Leigh, Sept. 24).

COTTON APHID (Aphis gossypii) - ARIZONA - Increasing and causing moderate damage to top crop in cotton fields in Yuma County. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - ALABAMA - Activity continues centered in eastern part of State. During 1963, activity remained at relatively low level. In previous years, epidemic populations occurred during late summer and early fall months. GEORGIA - Beetle activity continues at reduced level on Chattooga and Tallulah Districts of Chattahoochee National Forest. Estimated 1,600 infested trees found by aerial surveys during latter part of July. Georgia Forestry Commission reports beetle now endemic in all counties included in original control project. Approximately 814,000 trees removed and treated since March 1962. Total number of treated spots approximately 18,400. Industry removed additional large number of infested trees not included in above report. MISSISSIPPI - Beetle activity increased slightly on Homochitto National Forest, but remains at relatively low level. Aerial evaluation survey in July showed 1.5 infested trees per 1,000 trees, compared 0.4 for similar survey in April. SOUTH CAROLINA - Endemic populations in Piedmont declined. Cooperative aerial and ground surveys during June and July indicate approximately 26,000 infested trees, compared with 95,000 during June 1962. Suppressive programs on National Forest lands continue on Tyger, Enoree and General Pickens Districts on Sumter National Forest. Activity increased on Francis Marion National Forest, where 17,000 trees currently infested. Although center of outbreak was on Witherbee District and Santee Experimental Forest, recent detection surveys indicate spread to adjacent Santee and Wambaw Districts. Most activity on wet sites, with 2-3 inches of water on ground. Suppressive programs underway over entire forest. (Southeast. For. Pest Rpt., Aug.).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - Populations in north and central ALABAMA and GEORGIA generally at low level; however, localized infestations reported. Activity on increase in southern parts of ARKANSAS, Kisatchie National Forest, LOUISIANA, and Homochitto National Forest, MISSISSIPPI. Active salvage and control operations being carried out in the National Forest and by Arkansas State Forestry Commission. D. terebrans frequently associated with D. frontalis (southern pine beetle) as secondary invader on Francis Marion National Forest, SOUTH CAROLINA. In addition, D. terebrans infesting cankered portions of trees infested with fusiform rust (Cronartium fusiforme) on trees injured by logging or lightning. (Southeast. For. Pest Rpt., Aug.).

ENGRAVER BEETLES (Ips spp.) - Activity increased in some areas in south ALABAMA and south GEORGIA because of drought conditions. Ample rainfall during June and July, however, reduced attacks. In LOUISIANA, activity increased in Bienville, East Feliciana, East Baton Rouge and St. Helena Parishes, and the Catahoula Ranger District, Kisatchie National Forest. I. avulsus was primary causal agent. In MISSISSIPPI, Ips spp. activity also increased on Homochitto and Bienville National Forests and in scattered areas over State. In SOUTH CAROLINA, Ips spp. commonly found in trees struck by lightning on Francis Marion National Forest and adjoining private lands in Berkeley and Charleston Counties. On several occasions, I. avulsus brood emerged from lightning strikes and attacked portions of crown and individual branches of adjacent trees. (Southeast. For. Pest Rpt., Aug.).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Considerable activity observed in Lincoln and Pottawatomie Counties, with activity probably present in eastern half of State on oak trees. (Okla. Coop. Sur.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Moderate infestations observed on white pines near Utica, Licking County. (Lyon, Dean). COLORADO - Causing severe damage to spruce in many localities in eastern area. (Hantsbarger).

WHITE-PINE APHID (Cinara strobi) - OHIO - Collected from white pines at Wooster, Wayne County, April 22, 1963. Det. by L. M. Russell. Additional eggs observed in Licking County. (Lyon).

FOREST TENT CATERPILLAR (Malacosoma disstria) - ALABAMA - Over 310,000 acres of hardwood timber surveyed in Alabama, Tombigbee and Mobile River basin during 1963. Amount of heavy and partial defoliation increased from 5 to 7 percent and from 20 to 49 percent, respectively, over 1962 percentages. LOUISIANA - Results of aerial survey during May 1963 of more than 3 million acres of hardwood in southern part of State show substantial increase in acreage of defoliation. Defoliation was heavy on 793,520 acres in 1963 compared with 168,000 acres in 1962. Partial defoliation occurred on 763,080 acres in 1963 compared with 262,800 acres in 1962. A total of 1,556,600 acres was defoliated in 1963 compared with 431,400 acres in 1962. (Southeast. For. Pest Rpt., Aug.).

ELM SPANWORM (Ennomos subsignarius) - Activity declined abruptly and unexpectedly during 1963 in GEORGIA, TENNESSEE, NORTH CAROLINA and SOUTH CAROLINA, with a total area of only 667,000 acres of infestation. Damage in over half of area, some 432,000 acres, negligible and classed as very light. Major reason for decline believed to be a scelionid wasp (Telenomus alsophilae), an egg parasite, which emerged from E. subsignarius egg masses in large numbers during June 1963. During this year, center of defoliation was in Macon, Swain and eastern half of Graham Counties, North Carolina, and small area in northern portion of Rabun County, Georgia. (Southeast. For. Pest Rpt., Aug.).

CARPENTERWORM (Prionoxystus robiniae) - CALIFORNIA - Larvae heavy in elm trees locally in Marysville, Yuba County. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OHIO - Severe damage observed on elms in southern Union County; trees 65-95 percent skeletonized on one farm. Light adult populations still present. (Lyon).

LOCUST LEAF MINER (Xenochalepus dorsalis) - MARYLAND - Caused conspicuous foliage injury to black locust in southern counties. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Medium larval infestation in Tibouchina sp. and begonia in Oroville, Butte County. (Cal. Coop. Rpt.).

A TISCHERIID LEAF MINER (Tischeria omissa) - CALIFORNIA - Heavy populations on hollyhock plants in La Grange, Stanislaus County. (Cal. Coop. Rpt.).

SADDLEBACK CATERPILLAR (Sibine stimulea) - ALABAMA - Rather large numbers noted on muscadine grapevines and hardwood trees in Lee County. (Barwood).

A PYRAUSTID (Asciodes gordialis) - FLORIDA - Found moderately infesting leaves of bougainvillea hedge at Key West, Monroe County. (Buchanan, Sept. 8).

A NOTODONTID (Schizura ipomoeae) - OKLAHOMA - Reported defoliating roses in Oklahoma City area. (Okla. Coop. Sur.).

A NOCTUID (Selenis monotropa) - FLORIDA - Found lightly infesting leaves of chrysanthemum at Punta Gorda, Charlotte County. (Walsh, Davis).

LARGER CANNA LEAF ROLLER (Calpodes ethlius) - ALABAMA - Has been extremely active and destructive to canna lillies throughout State. Many plants damaged; blooming curtailed. Larvae, pupae and adults now present. (McQueen).

AN ACORN WEEVIL (Curculio baculi) - NORTH DAKOTA - Larvae infesting 85 percent of acorns from collection made in Killdeer Mountains for propagation purposes. (Zaylskie).

A WEEVIL (Brachyrhinus sp.) - NEVADA - Severely notching leaves of privet in Reno, Washoe County. (Coop. Rpt.).

A BRUCHID (Stator limbatus) - CALIFORNIA - Heavy populations in mimosa seeds in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

TWIG PRUNERS - MISSOURI - Unidentified species pruned numerous twigs from elms, hickory, persimmon and some other trees in southwest area. (Munson, Thomas, Wood).

COCCIDS - NEW MEXICO - Aspidiotus perniciosus extremely heavy on roses locally in Albuquerque, Bernalillo County. Lecanium sp. has been a problem in several areas of Albuquerque this summer; heavier infestations apparently caused branches to die. Heavy infestations of A. populorum found on poplar trees locally in Alamogordo, Otero County; appears to be spreading rapidly to adjacent trees. Pulvinaria innumerabilis causing slight to considerable damage, depending on degree of infestation, on willow nursery stock locally in northern area. (N. M. Coop. Rpt.). MARYLAND - Chrysomphalus obscurus heavy and injuring several large willow oaks at College Park, Prince Georges County. (U. Md., Ent. Dept.). FLORIDA - Pseudaonidia clavigera light on ivy at Gulfport, Pinellas County. (Bingaman, Sept. 19). Icerya purchasi found locally at Sanford, Seminole County; infesting stem, leaves and bark of hawthorn. Coccus hesperidum found moderately infesting leaves of tea (Thea sinensis) at Gainesville, Alachua County. (Stokes, Sept. 17). CALIFORNIA - Asterolecanium sp., probably minus, heavy on oak trees in Lincoln, Placer County. (Cal. Coop. Rpt.).

WHITEFLIES (Aleuroplatus spp.) - ALABAMA - Becoming quite plentiful on apples, holly, ligustrum and other plantings in Macon, Lee and other central area counties. (Barwood et al.).

APHIDS - OHIO - Undetermined species heavy on weeping willows near Bucyrus, Crawford County. Black sooty fungus quite prevalent on sticky excrement. (Lyon). Heavy infestations of undetermined species observed on white pine trees near Utica, Licking County; 9 of 10 trees appeared weakened. (Dean). Many maple trees throughout central area infested by Periphyllus lyropicetus; premature leaf droppage prevalent in many cases; colonies of 5-6 stem mothers with 20-25 nymphs per leaf typical. (Lyon). CALIFORNIA - Neothomasia populicola infesting balsam poplar in Willows, Glenn County. (Cal. Coop. Rpt.).

WALKINGSTICKS - GEORGIA - Caused heavy defoliation of shrubbery in Macon County. (Mathis). SOUTH CAROLINA - Found in Oconee County (Mountain Rest). (Nettles et al.).

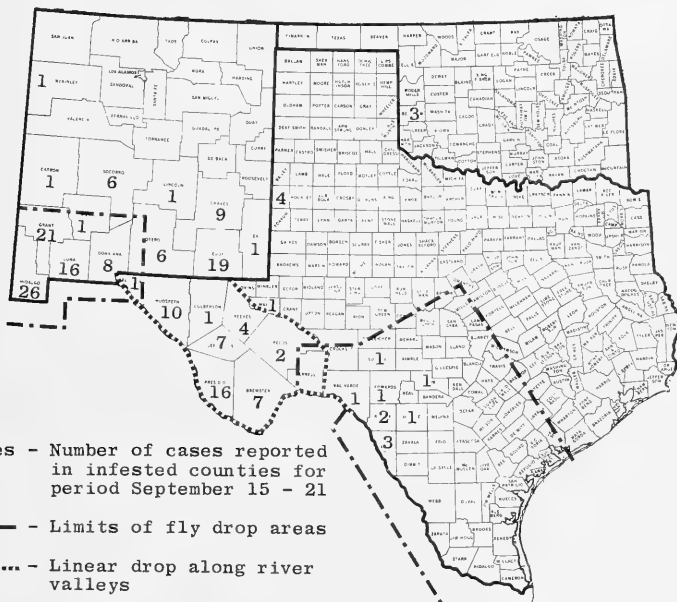
SPIDER MITES - COLORADO - Continue a problem on shrubs and trees throughout State. (Hantsbarger). NEW MEXICO - *Eotetranychus libocedri* collected on arborvitae at Albuquerque. *E. weldoni* collected from willow at Artesia, Eddy County; causing considerable damage to foliage. Heavy populations of *Oligonychus ununguis* damaged juniper during summer months at Los Lunas, Valencia County. (N. M. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - UTAH - Quite troublesome in Davis County and parts of Box Elder County since rains during past 2 weeks. Troublesome in several locations in Cache County. (Knowlton, Sept. 23). WISCONSIN - Complaints minimal; usual numbers encountered near river bottoms not present. (Wis. Ins. Sur.).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period September 15 - 21, a total of 63 infestations was reported from TEXAS; 116 from NEW MEXICO; and 3 from OKLAHOMA. Specimens were reported from 17 counties in Texas, 12 in New Mexico, and 1 county in Oklahoma. A total of 109,210,000 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Activity still noticeable in Iowa and Fond du Lac Counties; causing concern in latter county. (Wis. Ins. Sur.). OKLAHOMA - Populations down from previous week in Stillwater area; light numbers on animals in Love County (south central). (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Populations down somewhat on animals in Stillwater area (north central); generally light on animals in south central area. Ranged 200-700 per head on unsprayed animals in Bryan County; ranged 150-750 per head on animals checked in Love County. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - MICHIGAN - Adults annoying on some Ingham County livestock farms. (Dowdy). WISCONSIN - Activity particularly noticeable in Vilas and Monroe Counties. More of a problem as a pest than for high numbers. (Wis. Ins. Sur.). NEBRASKA - Adults very active and annoying in city and rural areas in eastern third of State. (Bergman). OKLAHOMA - Increasing around buildings in Stillwater area (north central); moderate around pens and barns in Love County. (Okla. Coop. Sur.). UTAH - Very troublesome about many Iron County communities. (Knowlton, Sjoblom). Very abundant about cattle feeding corral near Ogden. (Knowlton). Flies lighting on faces of cattle and horses and feeding on secretions of eyes in Box Elder, Weber and Davis Counties determined this species. (Sabrosky, Hanson, Knowlton).

FACE FLY (Musca autumnalis) - ILLINOIS - Inspection of 28 herds of cattle negative in southern counties. (Ill. Ins. Rpt.).

FLEAS (Ctenocephalides spp.) - MINNESOTA - Numerous reports of C. canis and C. felis noted; troublesome to pets and owners in homes. (Minn. Ins. Rpt., Sept. 20). OKLAHOMA - C. canis continues to cause nuisance in number of homes in Stillwater area, Payne County. (Okla. Coop. Sur.).

AMERICAN DOG TICK (Dermacentor variabilis) - OHIO - Quite abundant during past year in Delaware area, Delaware County. (Hansel).

EAR TICK (Otobius megnini) - UTAH - Some reported in eastern Iron County. (Knowlton).

CATTLE LICE - UTAH - Moderately numerous on some Iron County herds. (Knowlton, Sjoblom).

TROPICAL RAT MITE (Ornithonyssus bacoti) - OHIO - Specimens collected from rats at zoo near Columbus, Franklin County. (Johnson, Sept. 18).

A SNAKE MITE (Ophionyssus natricis) - OHIO - Crawlers collected from a snake at zoo near Columbus, Franklin County. (Johnson, Sept. 18).

HOUSEHOLD AND STRUCTURAL INSECTS

BROWN-BANDED COCKROACH (Supella supellectilium) - DELAWARE - Heavy in home in northern New Castle County. (Burbutis). MICHIGAN - Problem locally in Lower Peninsula. (Shafer, Chartrand, Mason). UTAH - Infested several apartments at Logan. (Knowlton).

ORIENTAL COCKROACH (Blatta orientalis) - UTAH - Infesting large apartment building in Salt Lake City. (Knowlton).

AN EARWIG (Labidura riparia) - GEORGIA - Heavy infestations of probably this species in homes in Macon. (Brightwell).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Quite numerous and troublesome about many homes in Iron County communities this summer. (Knowlton, Sjoblom).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - NORTH CAROLINA - Problem in several homes in Cherokee County. (Stewart, Robertson). MICHIGAN - Local household problem in Wayne County. (Gould). RHODE ISLAND - Noted in Cranston and Greenville, Providence County. (Cartier, Mathewson).

COWPEA WEEVIL (Callosobruchus maculatus) - NEW MEXICO - Heavy in stored pinto beans and black-eye peas in home at Santa Fe. (N. M. Coop. Rpt.).

A WEEVIL (Nemocestes incomptus) - CALIFORNIA - Large numbers of adults invading residence in Berkeley, Alameda County. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - UTAH - Invaded homes at Holladay, Salt Lake County. (Knowlton).

BOXELDER BUG (Leptocoris trivittatus) - NORTH DAKOTA - Adults nuisance around homes in St. Thomas area, Pembina County. (N. D. Ins. Sur.).

SPRINGTAILS - MICHIGAN - Household problem locally on Lower Peninsula. (Shafer, Chartrand, Mason). UTAH - Entering home adjacent to alfalfa field at Sandy, Salt Lake County. (Knowlton). COLORADO - Continues as problem in homes in many parts of State. (Hantsbarger).

TICKS - FLORIDA - Problem in residences in Stanford, Seminole County; worst ever encountered. (Desin). COLORADO - Rhipicephalus sanguineus heavy in new home in Denver. (Poyner, Bates).

BLACK WIDOW SPIDER (Latrodectus mactans) - UTAH - Causing concern in homes in Salt Lake County. (Knowlton, Rose). In home at Sunset, Davis County. (Knowlton).

MITES - MICHIGAN - Unspecified species from Starling nests household problem locally in Lower Peninsula. (Shafer, Chartrand, Mason).

SOWBUGS - MICHIGAN - Household problem locally on Lower Peninsula. (Shafer, Chartrand, Mason).

MILLIPEDS - MINNESOTA - Quite numerous in homes in Minneapolis-St. Paul area. (Minn. Ins. Rpt., Sept. 20).

HOUSE FLY (Musca domestica) - VIRGINIA - Very common in motels, restaurants and other places in Stafford, King George and Westmoreland Counties. Pollenia rudis and M. autumnalis associated with this species in mountains; expected to enter homes in near future. (Tarpley).

STORED-PRODUCT INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - DELAWARE - Heavy on tubers stored in corncrib in Sussex County; 50-60 bags involved. (Humphreys). TEXAS - Stored seed potatoes in local areas of Harris County heavily damaged by larvae. (Davis, Larsen).

INDIAN-MEAL MOTH (Plodia interpunctella) - ALABAMA - General emergence of adults noted in large warehouse in Mobile County. (Seibels, Wallace).

MEDITERRANEAN FLOUR MOTH (Anagasta künniella) - FLORIDA - Infested stacked oats at Palatka, Putnam County. (Adkins, Sept. 13).

GRANARY WEEVIL (Sitophilus granarius) - WISCONSIN - Probably this species infested recently harvested grain locally in Fond du Lac County. (Wis. Ins. Sur.).

CIGARETTE BEETLE (Lasioderma serricorne) - FLORIDA - Light on cottonseed meal and soybean meal cake at Palatka, Putnam County, (Sept. 13); and wheat bran at High Springs, Alachua County (Sept. 12). (Adkins).

CADELLE (Tenebroides mauritanicus) - FLORIDA - Light on soybean meal cake at Palatka, Putnam County. (Adkins, Sept. 13).

DARKLING BEETLES - ALABAMA - Occasional Letheticus oryzae specimen taken from warehouses in Mobile County. (Seibels). COLORADO - Adults of Tenebrio sp. found in grain elevator in Kiowa County. (Hantsbarger).

BENEFICIAL INSECTS

LADY BEETLES - MARYLAND - Adults and larvae of Hippodamia convergens very abundant on late tobacco in Anne Arundel and Calvert Counties. (U. Md., Ent. Dept.). NORTH DAKOTA - Trace numbers of Hippodamia convergens and Adalia bipunctata on alfalfa over eastern quarter of State. (N. D. Ins. Sur.). WYOMING - Adults of several species averaged 34 per 100 sweeps in alfalfa fields of Sheridan, Johnson and Natrona Counties. (Marks).

A PUNCTUREVINE WEEVIL (Microlarinus laeeynii) - UTAH - Appears to be established at Perry, Box Elder County, and Santa Clara, Washington County; attacking seeds and feeding on vines in release area. (Knowlton, Sjoblom).

DAMSEL BUGS (Nabis spp.) - NORTH DAKOTA - N. roseipennis most abundant predator in alfalfa in eastern quarter of State; ranged 1-3 per sweep. (N. D. Ins. Sur.). WYOMING - Nabis sp. averaged 27 per 100 sweeps in alfalfa fields of Sheridan, Johnson, and Natrona Counties. (Marks).

GREEN LACEWINGS (Chrysopa spp.) - NORTH DAKOTA - Trace in alfalfa throughout eastern quarter of State. (N. D. Ins. Sur.).

MISCELLANEOUS INSECTS

WHITE-FRINGED BEETLE (Graphognathus spp.) - GEORGIA - Light to moderate in residential areas of Thomasville; this is first report of infestation in Thomas County. (Elder, Sept. 18).

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Few additional adults taken in Detroit, Wayne County; Ypsilanti, Washtenaw County, and in Calhoun County area. Infested area in Calhoun County involves 67,744 acres; in Kalamazoo County, infestation involves 40 acres in 5 spot locations. Around Ypsilanti, area enlarged somewhat but acreage involved not yet determined. (Turner, Carlson).

LARGER YELLOW ANT (Acanthomyops interjectus) - RHODE ISLAND - Flights of alates noted in Lincoln and Cumberland, Providence County. (Cartier, Mathewson).

A NOCTUID MOTH (Bomolocha abalienalis) - DELAWARE - Adults collected by D. F. Bray July 10, 1963, at Newark; det. by E. L. Todd. This is a new State record. (Burbutis).

A CHRYSAUGID MOTH (Galasa rubidana) - DELAWARE - Adults collected at light at Newark by D. F. Bray July 1, 1963; det. by R. W. Hodges. This is a new State record. (Burbutis).

A GRASS MOTH (Crambus elegans) - DELAWARE - Adults collected at light at Newark June 17, 1963, by D. F. Bray; det. by R. W. Hodges. This is a new State record. (Burbutis).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Heavy flight of adults occurring in walnut trees in Paicines, San Benito County, and medium in grass roots in walnut orchard in La Grange, Stainslaus County. (Cal. Coop. Rpt.).

TOMATO HORNWORM (Protoparce quinquemaculata) - MICHIGAN - Six adults taken at blacklight traps from 3 locations week ending September 23; unseasonably late collection for State. (Newman).

IRIS BORER (Macronoctua onusta) - WISCONSIN - Adults caught in increasing numbers in traps during week. (Wis. Ins. Sur.).

BED BUG (Cimex lectularius) - SOUTH DAKOTA - Population extremely high in chicken litter in laying house in Brookings County. (Hintz).

FALSE CHINCH BUG (Nysius ericae) - UTAH - Column 90 feet long and 2 to more than 4 feet wide moved south on farm at Lewiston, Cache County, September 20-21; 99 percent nymphs. (Knowlton).

CORRECTIONS

CEIR 13(39):1137 - CORN EARWORM - VIRGINIA - Sixth line should read "medium in Prince George and Sussex Counties ..."

CEIR 13(39):1155 - SCREW-WORM (Callitroga hominivorax) - ARIZONA - should read (Cochliomyia hominivorax).

CEIR 13(39):1155 - STATUS OF THE SCREW-WORM IN THE SOUTHWEST - Next to last line should read "... released during period September 8 - ..."

ADDITIONAL NOTES

WASHINGTON - Larvae of a NOCTUID (Cucullia postera, race omissa) attacking aster buds and flowers at Friday Harbor, San Juan County; petals and center of flowers eaten; 14 larvae observed in 20 feet of row. (Baker). BLACK PINE LEAF SCALE (Aspidiotus californicus) seriously damaging ponderosa pine at Spokane, Spokane County (Telford, Kruiswyk), and ELM LEAF BEETLE (Galerucella xanthomelaena) seriously defoliating elm at Inchelium, Ferry County (Telford, Osburn). NOCTUID and CRAMBID MOTHS particularly abundant on lawns at Pullman, Whitman County. (Telford).

KANSAS - ELM LEAF BEETLE larvae and eggs noted on elms in Doniphan County, northeast; a new county record. (Guldner, Charlton, Sept. 19). TWIG GIRDLE (unidentified) girdled branches of elm and hickory in Douglas County, east central. (Mills, Sept. 16).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Kansas DURING 1962
(Commodity) (State or District) (Year)

| | |
|--|-------------------------------------|
| A. Pest or pest complex <u>Army cutworm</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. <u>8,986,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ <u>23.5 bu.</u> |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ <u>2.02 - December 15, 1962</u> |
| E. <u>Acres</u> ^a needing control | No. <u>53,554</u> |
| F. <u>Acres</u> ^a treated | No. <u>8,460</u> |
| G. Reduction due to not treating where needed: | |
| H. Loss in yield, percent | % <u>-----</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ <u>4.3 bu.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ <u>8.69</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ <u>-----</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units <u>193,904.2 bu.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ <u>2.40</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ <u>20,304.00</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ <u>391,869.00</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ <u>-----</u> |
| Q. Combined control cost and losses, N + O + P | \$ <u>412,173.00</u> |

Comment: Total value of crop: \$426,565,420.00. Percent loss: 0.1

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Corn for grain (Commodity) | IN | Kansas (State or District) | DURING | 1962 (Year) |
|-----------|--|--|-------------------------------|--------------------------|----------------|
| A. | Pest or pest complex | Corn earworm | | | |
| B. | Number of | acres ^a produced (From CRS) | No. | 1,298,000 | |
| C. | Average yield per | acre ^a (From CRS) | Units/ | 51.0 bu. | |
| D. | Price ^b per unit (bu.) ^c | (From CRS) | \$/ | 1.03 - December 15, 1962 | |
| E. | Acres ^a infested | | No. | 1,298,000 | |
| F. | Acres ^a treated | | No. | 7,033 | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | % | 1.25 | |
| I. | Loss in yield, units per | acre ^a , C x H | Units/ | 0.64 | |
| J. | Loss in yield, \$ per | acre ^a , D x I | \$/ | 0.66 | |
| K. | Loss in quality, \$ per | acre ^a | \$/ | ----- | |
| L. | Yield loss for all | acres ^a , (E-F) x I | Units | 826,218.9 | |
| M. | Control cost, \$ per | acre ^a | \$/ | 2.00 | |
| N. | Control cost for all | acres ^a , F x M | \$ | 14,066.00 | |
| O. | Yield loss for all | acres ^a , (E-F) x J | \$ | 852,038.00 | |
| P. | Quality loss for all | acres ^a , (E-F) x K | \$ | ----- | |
| Q. | Combined control cost and losses, | N + O + P | \$ | 866,104.00 | |

Comment: Total crop value: \$68,183,940.00. Percent loss: 1.2

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Leroy L. Peters

Date 4-11-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Peanuts IN Georgia DURING 1962
 (Commodity) (State or District) (Year)

| | | |
|--|-------------------------------|------------------------|
| A. Pest or pest complex | <u>Southern corn rootworm</u> | |
| B. Number of acres ^a produced (From CRS) | No. | <u>500,000</u> |
| C. Average yield per acre ^a (From CRS) | Units/ | <u>1,200 lbs./acre</u> |
| D. Price ^b per unit (lb.) ^c (From CRS) | \$/ | <u>.10</u> |
| E. Acres ^a needing control | No. | <u>3,000</u> |
| F. Acres ^a treated | No. | <u>2,500</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>20</u> |
| I. Loss in yield, units per acre ^a , C x H | Units/ | <u>240 lbs.</u> |
| J. Loss in yield, \$ per acre ^a , D x I | \$/ | <u>24.00</u> |
| K. Loss in quality, \$ per acre ^a | \$/ | <u>5.00</u> |
| L. Yield loss for all acres, (E-F) x I | Units | <u>120,000</u> |
| M. Control cost, $\frac{\$10}{2} \times 200 = \$1,000$ $\frac{\$3}{2} \times 300 = \$4,500$ $\frac{\$2}{2} \times 2,000 = \$2,000$ | | |
| N. Control cost for all acres ^a , F x M | \$ | <u>7,200</u> |
| O. Yield loss for all acres ^a , (E-F) x J | \$ | <u>12,000</u> |
| P. Quality loss for all acres ^a , (E-F) x K | \$ | <u>2,500</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>21,700</u> |

Comment: Southern corn rootworm is known to be in Early, Clay, Randolph and Calhoun
Counties. In 1961 this insect caused \$140,000 loss to peanut growers.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by W. C. Johnson

Date 6-1-63

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
SACRAMENTO

June 28, 1963

C O P Y

E-82-5

TO: All County Agricultural Commissioners

SUBJECT: Estimated Damage and Crop Loss Caused by Insect/Mite Pests - 1962

This report of estimated damage and dollar crop loss attributed to insect/mite pests is a summarization of special reports submitted by the County Agricultural Commissioners. Preparation of this information involves a great deal of work by each County, and yet this data must of necessity be considered an estimate only, as the final crop return information is not available at the required time of preparation. The majority of the county reports were complete, giving estimated crop value, percentage loss caused by insects and treatment costs on many of the 250 different kinds of commercial crops grown in the State on 131,000 farms. Weather conditions during 1962 varied from normal patterns and many species of insect/mites developed severe pest populations relatively rapidly.

Tallying of related pests comprising more than one species as a group was more prevalent this year in field reports than has formerly been done, however, when damage/loss is attributed to a single species it is so credited. The totals for assessable yield loss and control costs do not always equal the estimated overall total due to the overlapping of treatments for one or more species of insects plus diseases or nutritional deficiency. For a more accurate representation of state-wide losses, the maximum-minimum value is given rather than striking an average.

Estimates in the pests of animals are partially incomplete due to lack of centralized reporting, consequently they represent only a limited number of counties. Forest pests are included through cooperation with the U.S. Forest Service. In the case of Structural Pest Control reports estimated dollar costs for individual structural pests are impossible to completely assess as treatment for a combination of insect pests, rodents and wood rots is a general practice in the industry. Termites are probably the most important from the economic standpoint.

The attached table presents the breakdown of assigned damage/loss dollar value.

/s/ Ronald M. Hawthorne

Ronald M. Hawthorne
Economic Entomologist

Robert W. Harper, Chief
Bureau of Entomology

Attach.

CROP LOSS ESTIMATE REPORT FOR CALIFORNIA - 1962

| Insects | Assessable Yield Loss (\$) | Control Cost (\$) | % Loss of Crop Value | Estimated Overall Loss (\$) |
|---|----------------------------|-------------------|----------------------|-----------------------------|
| Mites (nonspecific) | 36,647,529 | 13,876,531 | .04-10 | 51,050,075 |
| Brown wheat mite (<u>Petrobia latens</u>) | --- | 2,000 | 0-3 | 2,000 |
| Citrus red mite (<u>Panonychus citri</u>) | 5,687,464 | 2,968,715 | 1-6 | 8,656,180 |
| Citrus rust mite (<u>Phyllocoptiruta oleivora</u>) | 25,000 | 10,000 | .4 | 35,000 |
| Clover mite (<u>Bryobia praetiosa</u>) | 78,700 | 61,000 | .75 | 139,700 |
| European red mite (<u>Panonychus ulmi</u>) | 853,500 | 950,000 | .0019-5 | 1,798,500 |
| Pacific spider mite (<u>Tetranychus pacificus</u>) | 17,500 | 36,800 | 0-.2 | 54,300 |
| Pear leaf blister mite (<u>Eriophyes pyri</u>) | 25,600 | 113,200 | 5-7.8 | 138,800 |
| Pear rust mite (<u>Epirimerus pyri</u>) | 20,000 | 30,000 | .05-2 | 50,000 |
| Tomato russet mite (<u>Aculus lycopersici</u>) | 250,000 | 81,750 | 0-7 | 331,750 |
| Two-spotted spider mite (<u>Tetranychus telarius</u>) | 1,201,050 | 1,210,100 | .0078-5 | 2,411,150 |
| Winter grain mite (<u>Penthalicus major</u>) | 2,000 | 600 | 3 | 2,600 |
| A spider mite (<u>Botetranychus willamettei</u>) | 1,300 | 2,500 | 0-2 | 3,800 |
| Mites All - Total | 44,809,643 | 19,343,196 | | 64,673,855 |
| European earwig (<u>Forficula auricularia</u>) | 1,200 | 1,600 | 1-10 | 3,100 |
| Grasshoppers | 234,450 | 38,785 | .05-4 | 276,035 |
| Field crickets (<u>Gryllus</u> spp.) | 4,000,000 | 1,000,000 | 0-6 | 5,000,000 |
| Thrips (nonspecific) | 5,095,005 | 2,726,844 | .05-8 | 7,777,149 |
| Citrus thrips (<u>Scirtothrips citri</u>) | 2,184,679 | 508,290 | 3-4.6 | 2,693,269 |
| Pear thrips (<u>Taeniothrips inconsequens</u>) | 28,000 | 100,000 | 0-.0091 | 128,000 |
| A western flower thrips (<u>Frankliniella occidentalis</u>) | 160,000 | 100,000 | 0-1 | 260,000 |
| Thrips All - Total | 7,467,684 | 3,435,134 | | 10,858,418 |
| Leafhoppers (nonspecific) | 7,074,307 | 5,425,937 | .06-1.7 | 12,505,244 |
| Beet leafhopper (<u>Circulifer tenellus</u>) | 269,000 | 110,000 | 1.4-5 | 379,000 |
| Grape leafhoppers (<u>Erythroneura</u> spp.) | 1,994,770 | 1,008,678 | .02-5 | 3,003,448 |
| Leafhoppers All - Total | 9,095,977 | 6,544,615 | | 15,546,592 |
| Pear psylla (<u>Psylla pyricola</u>) | 2,059,000 | 531,000 | .09-20 | 2,590,000 |

| Insects | Assessable Yield Loss (\$) | Control Cost (\$) | % Loss of Crop Value | Estimated Overall Loss (\$) |
|---|----------------------------|-------------------|----------------------|-----------------------------|
| <u>Aphids (nonspecific)</u> | 11,270,922 | 6,721,725 | .05-8 | 17,701,778 |
| Apple aphid (<u>Aphis pomi</u>) | 50,000 | 51,000 | .0166-2 | 101,500 |
| Cabbage aphid (<u>Brevicoryne brassicae</u>) | 366,534 | 300,000 | 2-6.7 | 667,034 |
| Green peach aphid (<u>Myzus persicae</u>) | 2,263,900 | 2,733,500 | 1-8 | 4,997,400 |
| Mealy plum aphid (<u>Hyalopteris pruni</u>) | 1,200 | 800 | 0-1.0 | 2,000 |
| Melon aphid (<u>Aphis gossypii</u>) | 1,009,000 | 23,500 | 2-3.59 | 1,032,500 |
| Pea aphid (<u>Acyrtosiphon pisum</u>) | 71,150 | 98,000 | .1-1.17 | 169,150 |
| Potato aphid (<u>Macrosiphum euphorbiae</u>) | 39,000 | 52,000 | 0-2 | 91,360 |
| Rosy apple aphid (<u>Anuraphis rosea</u>) | 160,000 | 140,000 | 0-.0366 | 300,000 |
| Spotted alfalfa aphid (<u>Therioaphis maculata</u>) | 301,800 | 77,600 | .004-10 | 379,400 |
| Walnut aphid (<u>Chromaphis juglandicola</u>) | 270,430 | 254,580 | .03-10 | 525,010 |
| Aphids All - Total | 15,803,936 | 10,453,205 | | 25,967,132 |
| <u>Mealybugs (nonspecific)</u> | 115,000 | 52,968 | 2-6 | 167,968 |
| Citrus mealybug (<u>Pseudococcus citri</u>) | 2,650,000 | 125,000 | 0-.5 | 2,775,000 |
| Grape mealybug (<u>Pseudococcus maritimus</u>) | 3,500 | 11,910 | 0-0.1 | 15,410 |
| Mealybugs All - Total | 2,768,500 | 189,878 | | 2,958,378 |
| <u>Scales (nonspecific)</u> | 777,100 | 1,039,730 | .7-5 | 1,801,230 |
| Black scale (<u>Saissetia oleae</u>) | 3,055,000 | 743,500 | 1-5 | 3,796,500 |
| Brown soft scale (<u>Coccus hesperidum</u>) | 3,000 | 11,000 | 0-1 | 14,000 |
| California red scale (<u>Aonidiella aurantii</u>) | 552,037 | 1,313,872 | 5-3.2 | 1,865,910 |
| European fruit lecanium (<u>Lecanium corni</u>) | 28,000 | 100,000 | 0-.001 | 128,000 |
| Greeny scale (<u>Aspidiotus camelliae</u>) | 2,000 | 5,000 | 0-5 | 7,000 |
| Italian pear scale (<u>Epidiaspis piricola</u>) | 80,000 | 80,000 | 0-0.10 | 80,000 |
| Olive scale (<u>Parlatoria oleae</u>) | 885,250 | 1,229,548 | .062-3 | 2,114,798 |
| San Jose scale (<u>Aspidiotus perniciosus</u>) | 1,679,584 | 1,549,712 | .010-10 | 3,229,296 |
| Yellow scale (<u>Aonidiella citrina</u>) | 384,226 | 625,257 | 0-1 | 1,009,483 |
| Scales All - Total | 7,364,197 | 6,697,619 | | 14,046,217 |
| <u>Whiteflies</u> | 90,000 | 10,000 | 0-10 | 100,000 |
| Lygus bugs (<u>Lygus spp.</u>) | 23,679,328 | 9,372,811 | .038-8.7 | 33,052,134 |
| Stink bugs | 3,077,100 | 2,206,800 | .07-8 | 5,283,900 |
| Alfalfa weevil (<u>Hypera postica</u>) | 294,000 | 43,000 | 5-15 | 369,040 |

| Insects | Assessable Yield Loss (\$) | Control Costs (\$) | % Loss of Crop Value | Estimated Overall Loss (\$) |
|--|----------------------------------|-----------------------|----------------------------|-----------------------------------|
| Clover leaf weevil (<u>Hypera punctata</u>) | 10,000 | 7,500 | 0-.5 | 17,500 |
| Cucumber beetles (<u>Diabrotica spp.</u>) | 33,000 | 10,000 | --- | 43,000 |
| Darkling beetles (<u>Blapstinus sp.</u> and <u>Metoponium sp.</u>) | 13,000 | 5,000 | 0-1 | 18,000 |
| Elm leaf beetle (<u>Galerucella xanthomelaena</u>) | 1,000 | 1,000 | 0-5 | 2,000 |
| Tobacco flea beetle (<u>Epitrix hirtipennis</u>) | 39,000 | 9,000 | 0-.5 | 48,000 |
| Flatheaded apple tree borers (<u>Chrysothothris spp.</u>) | 2,215 | 100 | 0-2 | 2,315 |
| Shot-hole borer (<u>Scolytus rugulosus</u>) | 1,024,000 | 250,000 | 3-10 | 1,274,000 |
| Wireworms | 89,000 | 41,000 | 0-.7 | 130,000 |
| Cabbage maggot (<u>Hylemya brassicae</u>) | 20,000 | 11,000 | 0-1.0 | 31,000 |
| Onion maggot (<u>Hylemya antiqua</u>) | 927 | 1,137 | 0-1 | 2,064 |
| Leaf miners (nonspecific) | 88,872 | 699,827 | .6-3 | 789,699 |
| A rice leaf miner (<u>Hydrellia griseola</u>) | 161,000 | 72,000 | .5-1 | 233,000 |
| Leaf miners All - Total | 249,872 | 771,827 | | 1,022,699 |
| Walnut husk fly (<u>Rhagoletis completa</u>) | 260,080 | 71,800 | 3-16.9 | 331,880 |
| Armyworm (<u>Pseudaletia unipuncta</u>) | 7,096,038 | 4,988,315 | .025-10 | 12,084,354 |
| Artichoke plume moth (<u>Platyptilia carduidactyla</u>) | 531,160 | 98,008 | 12-55 | 629,168 |
| Beet armyworm (<u>Spodoptera exigua</u>) | 3,000,000 | 1,150,000 | 0-6 | 4,150,000 |
| Cabbage looper (<u>Trichoplusia ni</u>) | 6,550,000 | 4,315,350 | 1.4-10 | 10,865,350 |
| Codling moth (<u>Carpocapsa pomonella</u>) | 1,315,850 | 2,268,253 | .06-18 | 3,584,103 |
| Corn earworm (<u>Heliothis zea</u>) | 22,412,516 | 8,771,341 | .01-13.9 | 31,184,658 |
| Cotton leaf perforator (<u>Bucculatrix thurberella</u>) | 23,257 | 109,588 | 0-1.2 | 132,845 |

| Insects | Assessable Yield Loss (\$) | Control Costs (\$) | % Loss of Crop Value | Estimated Overall Loss (\$) |
|---|----------------------------|--------------------|----------------------|-----------------------------|
| Cutworms | 1,417,547 | 476,306 | 0.1-2 | 1,893,880 |
| Imported cabbageworm (<u>Pieris rapae</u>) | 6,000 | 6,000 | 0-.4 | 12,000 |
| Lima-bean pod borer (<u>Ptiella zinckenella</u>) | 151,000 | 93,600 | 0-4 | 244,600 |
| Navel orangeworm (<u>Paramyeloides transitella</u>) | 292,000 | 44,000 | .03-4 | 336,000 |
| Orange tortrix (<u>Argyrotaenia citrana</u>) | 800,000 | 288,000 | 1.09-4 | 1,088,000 |
| Oriental fruit moth (<u>Grapholitha molesta</u>) | 414,750 | 177,380 | .097-6 | 592,130 |
| Peach twig borer (<u>Anarsia lineatella</u>) | 1,933,124 | 2,836,046 | .03-8 | 4,769,170 |
| Potato tuberworm (<u>Gnorimoschema operculella</u>) | 988,410 | 838,726 | 2.2-10 | 1,827,136 |
| Red-humped caterpillar (<u>Schizura concinna</u>) | 3,850 | 2,000 | 0-5 | 5,850 |
| Salt-marsh caterpillar (<u>Estigmene acrea</u>) | 3,066,700 | 715,500 | 1.3-4 | 3,782,200 |
| Tent caterpillars (<u>Malacosoma</u> spp.) | 540 | 1,000 | 0-1 | 1,540 |
| Tobacco hornworm (<u>Protoparce sexta</u>) | 215,000 | 74,053 | 0-2 | 289,053 |
| Tomato pinworm (<u>Keiferia lycopersicella</u>) | 50,000 | 200,000 | 0-1 | 250,000 |
| Western peach tree borer (<u>Sanninoidea exitiosa graefi</u>) | 72,980 | 478,000 | 2-11 | 550,980 |
| Grain storage: Coleoptera and Lepidoptera | 300,500 | 30,500 | 1-1.5 | 331,000 |
| Tadpole shrimp (<u>Apus oryzaphagus</u>) | 206,000 | 75,000 | 1-1.2 | 281,000 |
| Agricultural Pests - Total | 173,576,431 | 181,983,973 | | 262,512,276 |

Pest of Animals

| | | | | |
|--|--------|--------|-------|---------|
| Northern fowl mite (<u>Ornithonyssus sylviarum</u>) | 50,000 | 3,000 | 0-.2 | 53,000 |
| Cattle lice (<u>Haematopinus</u> spp., <u>Bovicola</u> spp., <u>Trichodectes</u> spp., <u>Linognathus</u> spp.) | 90,750 | 11,900 | .06-2 | 103,150 |

| <u>Pest of Animals</u> | <u>Assessable Yield Loss (\$)</u> | <u>Control Cost (\$)</u> | <u>% Loss of Crop Value</u> | <u>Estimated Overall Loss (\$)</u> |
|--|-----------------------------------|--------------------------|-----------------------------|------------------------------------|
| Common cattle grub (<u>Hypoderma lineatum</u>) | 241,040 | 12,200 | .09-.2 | 253,240 |
| Horn fly (<u>Haematobia irritans</u>) | 1,900 | 4,350 | 0-.17 | 6,250 |
| Horse flies (<u>Tabanus spp.</u>) | 825 | 900 | 0-.07 | 1,725 |
| Flies and Mosquitoes | --- | 8,750 | 0-1.0 | 50,000 |
| <u>Pest of Animals - Total</u> | <u>384,515</u> | <u>41,100</u> | | <u>467,365</u> |
| <u>Agricultural and Animal Pests - Total</u> | <u>173,960,946</u> | <u>182,025,073</u> | | <u>262,979,641</u> |

Forest Pests

| | <u>Estimated Value of Stumpage Killed 1/</u> |
|--|--|
| Western pine beetle (<u>Dendroctonus brevicomis</u>) | 13,000,000 |
| Mountain pine beetle (<u>Dendroctonus monticolae</u>) | 6,900,000 |
| California five-spined ips (<u>Ips confusus</u>) | 250,000 |
| Fir engraver (<u>Scolytus ventralis</u>) | 4,700,000 |
| Douglas-fir beetle (<u>Dendroctonus pseudotsugae</u>) | 1,600,000 |
| Jeffrey pine beetle (<u>Dendroctonus jeffreyi</u>) | 1,000,000 |
| California flatheaded borer (<u>Melanophila californica</u>) | 150,000 |
| Flatheaded fir borer (<u>Melanophila drummondii</u>) | 100,000 |
| A pine engraver (<u>Ips oregonis</u>) | 100,000 |
| Lodgepole needle miner (" <u>Recurvaria milleri</u> ") | (unknown) |
| <u>Forest Pests - Total</u> | <u>27,800,000</u> |

1/ From stumpage prices for sawtimber sold from National Forests for Fiscal Year 1962. The estimated loss includes inoperable areas and commercial forest stands on lands of all ownerships.

Percent of Stand

| Species | Resource Million Board Feet | Normal Average Annual | Ratio 62/Normal | 1962 | Million Board Feet | Value of Stumpage Millions of Dollars 1/ |
|--------------------|-----------------------------------|-----------------------------|--------------------|------|-----------------------|---|
| Douglas-fir | 120,625 | 0.56 | 0.25 | .14 | 169 | 1.7 |
| True firs | 88,820 | 0.68 | 2.00 | 1.38 | 1,208 | 4.7 |
| Ponderosa pine | 53,455 | 0.50 | 3.00 | 1.50 | 802 | 13.9 |
| Sugar pine | 27,522 | 0.55 | 1.75 | .96 | 264 | 5.9 |
| Jeffrey pine | 13,364 | 0.41 | 1.25 | .51 | 68 | 1.2 |
| Incense-cedar | 8,810 | 0.11 | 1.00 | .11 | 10 | .1 |
| Lodgepole pine | 4,273 | 0.55 | 1.50 | .82 | 35 | .1 |
| Western white pine | 2,036 | 0.55 | 1.00 | .55 | 11 | .2 |
| | 318,905 | | | | 2,567 | 27.8 |

1/ From stumpage prices for sawtimber sold from National Forests for Fiscal Year 1962. The estimated loss includes inoperable areas and commercial forest stands on lands of all ownerships.

STRUCTURAL PEST CONTROL

Structural pests are those referred to as household pests and wood destroying pests, or organisms, or such other pests as may include those which infest households or other structures including railroad cars, ships, docks and airplanes, or the contents thereof.

Due to the fact that geographical and climatic conditions vary over the entire state, pest problems differ enormously in various areas. However, the following list represents those pests on which the most calls are received from the general public.

Termites are probably the most important from an economic standpoint. The State of California registered 240,926 termite inspection reports during 1962, only 26.6 percent of which disclosed no infestation of any kind. However, on the basis of calls received from the public by pest control operators, cockroach calls far exceed those for termites.

The following are the ten most important household insect pests which gave the homeowner, restaurateur, industrialist and food processing plant owner the most trouble in 1962, listed in order of their importance:

COCKROACHES

Oriental cockroach
(Blatta orientalis)

German cockroach
(Blattella germanica)

Brown-banded cockroach
(Supella supellectilium)

American cockroach (Periplaneta americana) and other species

TERMITES

Subterranean termites
(Reticulitermes spp.)

Drywood termites
(Kalotermes spp.)

A dampwood termite
(Zootermopsis angusticollis)

A powder-post termite
(Cryptotermes brevis)

ANTS

Argentine ant
(Iridomyrmex humilis)

Southern fire ant
(Solenopsis xyloni)

Pavement ant, Carpenter ants,
Thief ant, Pharaoh ant,
Harvester ants

SPIDERS

Black widow spider
(Latrodectus mactans)

Wolf and garden spiders

Structural pests - Total - (Including loss by individuals due to damage to food, fiber and materials discarded)

STORAGE PESTS

Granary weevil
(Sitophilus granarius)

Drugstore beetle
(Stegobium paniceum)

Saw-toothed grain beetle
(Oryzaephilus surinamensis)

Indian-meal moth
(Plodia interpunctella)

Mediterranean flour moth
(Anagasta kuhniella)

CARPET BEETLES, MOTHS & SILVERFISH

EARWIGS AND CRICKETS

FLEAS & BROWN DOG TICK

Cat flea
(Ctenocephalides felis)

Dog flea
(Ctenocephalides canis)

Brown dog tick
(Rhipicephalus sanguineus)

BEEES AND WASPS

Honey bee
(Apis mellifera)

Wasps
(Polistes spp.)

A carpenter bee
(Xylocopa tabaniformis orpifex)

SOWBUGS, PILLBUGS, SCORPIONS, CENTIPEDES,
CLOVER MITES, FUNGUS GNATS & DARKLING BEETLES

\$ 90,000,000

GRAND TOTAL - All Pests

\$380,779,641

5B
823
077
Ent

1000 1000

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1000

1000 1000

1000 1000 1000

1000 1000

1000 1000

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 the accuracy of the material.

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

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

The 1963 adult GRASSHOPPER survey in Wyoming indicates a total of 977,500 acres of rangeland infested with moderate or above populations; this acreage 3 times that of 1962. Moderate, widespread grasshopper populations causing damage to pastures in Caldwell, Comal, Guadalupe and Hays Counties, Texas, and margins of small grain fields in northwest Oklahoma. (p. 1205).

Heavy, widespread populations of FALL ARMYWORM reported causing considerable damage to pastures and small grains in McCulloch, Yoakum, Ochiltree, Brazos and Burleson Counties, Texas, and some localized severe damage to pastures reported in Pushmataha County, Oklahoma. (p. 1205). ALFALFA CATERPILLAR populations caused severe damage to alfalfa in Virgin Valley, Clark County, Nevada; heaviest in several years. Extremely high populations of PEA APHID present in alfalfa near Wooster, Wayne County, Ohio; many plants wilting and browning. (p. 1206). THREE-CORNERED ALFALFA HOPPER continues to range from light to heavy on alfalfa in areas of Arizona, and populations heavy in Brazos and Burleson Counties, Texas. (p. 1207).

WALNUT HUSK FLY heavy in peach fruit in San Jose, Santa Clara County, California; first instance of peaches being infested in northern area of State. (p. 1209). CITRUS RED MITE extended range in California and now nearly statewide and occurring on many hosts other than citrus. (p. 1210).

POTATO TUBERWORM continues active in northwest Ohio; adults reduced in blacklight trap collections in Monroe County, Michigan. (p. 1210). CABBAGE LOOPER continues a problem in areas of Arizona and New Mexico, and heavy infestations reported in areas of Alabama. (p. 1211).

SPRUCE BUDWORM caused extensive but generally not serious damage to ponderosa pine in northern Larimer County, Colorado. (p. 1213).

MOSQUITOES annoying in parts of Utah, New Mexico, Texas, Florida, North Carolina and Delaware. In Lucas County, Ohio, mosquito populations lower and fewer complaints encountered this year than in previous years. (p. 1216).

DETECTION

WALNUT HUSK FLY found for first time in Oregon (p. 1209); an ORB WEAVER SPIDER (*Argiope amoena*) reported new to Hawaii (p. 1223); and an OECOPHORID MOTH (*Psilocorsis quercicella*) collected in South Carolina (p. 1214). New county records of significance were SOUTHWESTERN CORN BORER in Wayne County, Missouri (p. 1206); a BERMUDA GRASS MITE (*Aceria neocynodonis*) in Nye County, Nevada (p. 1208); WALNUT HUSK FLY in El Dorado County, California (p. 1209); and GYPSY MOTH in Northampton County, Pennsylvania (p. 1214). SOUTHERN GREEN STINK BUG now present on all major islands of Hawaii. (p. 1223).

CORRECTIONS

See page 1220.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1217). Infestations continuing to increase in western and central Texas and penetrating south and east in overwintering area.

Hawaiian Insect Notes. (p. 1223).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Cotton, Peanuts and Soybeans in Alabama in 1962. (pp. 1224-1226).

1962 Minnesota Insect Loss Estimates. (p. 1227).

Insects Collected From Texas Stored Grains During Period August 1, 1962 - June 1, 1963. (pp. 1228-1234).

Mormon Cricket Adult Survey, Fall 1963 (Map). (Between pages 1218-1219).

Reports in this issue are for week ending October 4, unless otherwise indicated.

WEATHER OF THE WEEK ENDING OCTOBER 7

Unseasonably warm temperatures and abundant sunshine prevailed over most of the Nation during the week ending October 7. Numerous stations scattered across the country registered higher temperatures than had previously occurred in October or so late in the season. Maximum temperature records were broken in Montana on the 4th, in South Dakota on the 5th, from the Prairies eastward on the 6th and 7th, and in Kansas on all three dates. A few stations registered lower early morning temperatures than had previously occurred so early in the fall. Subfreezing temperatures occurred in the higher valleys in the Rocky Mountains, in the Columbus, Ohio, area, in the higher elevations of the Appalachian Mountains from North Carolina northward to New England. Numerous places in New England registered minimum temperatures of 32° or lower on one or more mornings.

High pressure dominated the weather over most of the Nation on Monday, September 30. Afternoon temperatures were mostly in the 50's and 60's over the Ohio River Valley and northeastward. They exceeded 90° over the southwestern deserts, the interior valleys of California, eastern Montana, and nearby portions of the Dakotas. Elsewhere, maximums were mostly in the 70's and 80's. The central Plains warmed to the 90's on Tuesday and Wednesday and 80° temperatures occurred over portions of the Ohio River Valley. Fair weather continued over almost the entire Nation.

A cold air mass pushed into the north-central portion of the Nation on Thursday. It brought cooler temperatures to the Lake region and the upper Ohio River Valley and light rains to Pennsylvania, New York, and eastward to the Atlantic. A maritime polar air mass moved into the Far Northwest producing some light thundershowers. High temperatures continued over the sandy Southwest and the Rio Grande Valley.

The warm weather spread eastward and by the weekend numerous new maximum temperatures were being set. Chicago, Illinois, and Milwaukee, Wisconsin, were among the places that registered higher temperatures than had previously occurred in October. Some of the locations which experienced warmer temperatures than had previously occurred so late in the fall are Concordia, Kansas; South Bend, Indiana; Detroit, Michigan; and La Crosse and Madison, Wisconsin. At the other extreme, Hatteras, North Carolina, was among the few stations which registered lower temperatures than had ever occurred so early in the fall.

Rainfall exceeded 6 inches at West Palm Beach and 1-1/2 inches at Key West, Florida. Other parts of Florida received lighter amounts. Light rain fell along
(Continued on page 1208)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WYOMING - The 1963 adult grasshopper survey indicates a total of 977,500 acres of rangeland infested (counts over 7 per square yard); this acreage 3 times that of 1962. Most of heavy infestation in 3 general areas; Crook-Campbell County area (360,000 acres), Platte-Goshen County area (142,000 acres) and Big Horn Mountain area (365,000 acres in Sheridan, Johnson, Washakie and Big Horn Counties). Latter area new, while former 2 mostly holdover areas from past few seasons. Much of Big Horn Mountain area, specifically that area at higher elevations, has history of economic numbers occurring only on alternate years. Principal species at lower elevations Aulocara elliotti, Cordillacris occipitalis, Melanoplus sanguinipes and Ageneotettix deorum; dominant species in mountainous areas Melanoplus borealis, Camnula pellucida, M. oregonensis and M. sanguinipes. (Thornley). TEXAS - Moderate, widespread populations of Melanoplus spp. causing damage to pastures in Caldwell, Comal, Guadalupe and Hays Counties. (Tex. Coop. Rpt., Massey). OKLAHOMA - Unspecified species reported damaging small grains around field margins in several northwest areas. (Okla. Coop. Sur.). NORTH DAKOTA - Edges of rye fields in eastern Stark, Hettinger and Adams Counties being damaged. (Zimmerman). Five per square yard present in alfalfafield near Mayville, Trail County; 7 per square yard in field margin; Melanoplus bivittatus and M. sanguinipes species involved. (N. D. Ins. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - CALIFORNIA - Larvae boring heavily in corn stalks locally in Santa Ana Canyon, Orange County. (Cal. Coop. Rpt.). ARIZONA - Slight increases noted on alfalfa in Maricopa and Pinal Counties; 80-120 per 100 sweeps. (Ariz. Coop. Sur.). TEXAS - Heavy, widespread populations reported causing considerable damage to pastures and small grains in McCulloch, Yoakum, Ochiltree, Brazos and Burleson Counties. Parker County reports light, local infestations on oats and rye. (Tex. Coop. Rpt.). Heavy, local populations damaging Bermuda grass lawns in Brazos County. (Randolph). OKLAHOMA - Some localized severe damage reported in pasture areas in Pushmataha County, southeast. Some concern continues in Kingfisher County area in small grain. (Okla. Coop. Sur.). ALABAMA - Light, widely scattered infestations present on native grasses and cotton in Lee, Macon and Barbour Counties; no injury to pastures noted. (McQueen).

CORN EARWORM (Heliothis zea) - ARIZONA - Continues to damage corn in Graham County and sorghum in Maricopa and Yuma Counties. (Ariz. Coop. Sur.). UTAH - None observed this season in Wasatch County sweet corn. (Daniels, Knowlton). TEXAS - Moderate to heavy, local populations damaging alfalfa in Burleson and Brazos Counties. (Randolph). OKLAHOMA - Generally light on alfalfa in southwest; 1-4 per 10 sweeps. Heavy on alfalfa in Osage County. (Okla. Coop. Sur.). ARKANSAS - Total of 410 Heliothis larvae collected from soybeans in Desha County, southeast area, on September 9 and 10; all determined as this species. (Ark. Ins. Sur.). OHIO - Heavy larval infestations observed in untreated sweet corn in northwest; controls excellent in treated fields. Late-planted sweet corn at Columbus, Franklin County, moderately infested. (Lyon). MARYLAND - Several light to moderate infestations occurred on soybeans in Wicomico County. (U. Md., Ent. Dept.). DELAWARE - Full-grown larvae present to fairly common on soybeans in southern Kent and northwestern Sussex Counties, with some fields showing fairly heavy old and fresh feeding injury to pods. Adult catches in blacklight trap collections greatly reduced over previous weeks with counts averaging 8 per night during September 25-October 1. (Burbutis). GEORGIA - Very light feeding damage to pods of soybeans in south central and southwest areas. (Johnson).

EUROPEAN CORN BORER (Ostrinia nubilalis) - OHIO - Light infestations present in Hardin and Hancock Counties, northwest area; fourth and fifth instars present. (Lyon).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Light infestations on soybeans in south central and southwest areas. (Johnson).

GREEN CLOVERWORM (*Plathypena scabra*) - OKLAHOMA - Light to moderate, 10-25 per 10 sweeps, throughout southwest. Localized damage observed in Caddo County; 100-125 per 10 sweeps present. Moderate to heavy in Kay and Osage Counties, north central area. (Okla. Coop. Sur.).

GARDEN WEBWORM (*Loxostege similalis*) - OKLAHOMA - Heavy on alfalfa in Osage County, north central area. Considerable damage observed on seedling alfalfa in Grandfield area, southwest. (Okla. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - GEORGIA - Light infestations on soybeans in south central and southwest areas. (Johnson).

ALFALFA CATERPILLAR (*Colias eurytheme*) - NEVADA - Heavy larval populations caused severe damage to alfalfa in Virgin Valley, Clark County. Larval increases and damage began last week of August and are heaviest in several years. (Bechtel, Bunker). ARIZONA - Large populations still occur in scattered alfalfa fields near Buckeye, Maricopa County, and in Gila Valley, Yuma County. Larvae reduced in Graham County. (Ariz. Coop. Sur.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - MISSOURI - Collected in Wayne County for first time; 2 larvae and five girdled stalks found in field in southern part of county. (Munson, Thomas, Wood).

GRANULATE CUTWORM (*Feltia subterranea*) - ALABAMA - Quite numerous in northeast Macon County in irrigated cotton; feeding on cotton and several native grasses, especially around old house areas and field borders. Fields to be planted to small grains and winter clovers subject to attack. (McQueen).

A FIERY SKIPPER (*Hylephila phylaeus*) - CALIFORNIA - Heavy populations locally in Bermuda grass lawns in West Sacramento, Yolo County. Skippers have been more plentiful and bothersome this summer than former years. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Populations extremely light this year in Jackson County. (Larson). NEVADA - Generally light, spotted infestations, but some counts reached 10-20 per sweep in an alfalfa seed field in Fish Lake Valley, Esmeralda County. (Lauderdale). UTAH - Rare, but found near Ogden, Weber County. (Knowlton). OKLAHOMA - Light populations present, 10-150 per 10 sweeps, in Choctaw County and light to moderate, 25-200 per 10 sweeps, in southwest. (Okla. Coop. Sur.). NEBRASKA - Averaged 40 per 10 sweeps on alfalfa in Saline, Seward and York Counties. (Bergman). SOUTH DAKOTA - Populations static; minor fluctuations occurred in some fields. (Hintz).

PEA APHID (*Acyrtosiphon pisum*) - CALIFORNIA - Medium populations occurring on alfalfa in Rio Vista, Solano County. (Cal. Coop. Rpt.). UTAH - Increased on alfalfa in Salt Lake and Davis Counties; moderately numerous in Fielding-Perry area of Box Elder County and Tooele-Grantsville area of Tooele County. (Knowlton). WYOMING - Averaged 1,150 per 100 sweeps in Goshen County alfalfa. (Marks). NEBRASKA - Ranged 25-150 per 10 sweeps on alfalfa in southeast, east and northeast areas. (Roselle, Bergman). NORTH DAKOTA - Counts down to 1-5 per sweep in north central area. (N. D. Ins. Sur.). OHIO - Extremely high populations present in alfalfa near Wooster, Wayne County; many plants wilting and browning. (Treece).

CORN LEAF APHID (*Rhopalosiphum maidis*) - CALIFORNIA - Heavy on milo plantings in Walnut Grove, Sacramento County. (Cal. Coop. Rpt.). TEXAS - Heavy, local infestations reported on late grain sorghum in Burleson and Brazos Counties. (Randolph). OKLAHOMA - Heavy on second-growth grain sorghum (heads and plants) in Greer County, southwest; light on Johnson grass in Choctaw County, southeast. (Okla. Coop. Sur.). FLORIDA - Infesting stem and leaves of corn at Monticello, Jefferson County. (Miller, Sept. 26). OHIO - Nymphs and adults still present on late-maturing field corn in many northwest areas; majority present between leaf sheath and stalk. (Wells, Lyon).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - CALIFORNIA - Heavy populations in field corn in Ryde, Sacramento County. (Cal. Coop. Rpt.).

AN APHID - MICHIGAN - Colonies of an undetermined species extremely common on newly emerged wheat in Berrien and Ingham Counties; chemical controls being applied to breeding lines of wheat in Michigan State University plots. (Ruppel).

A MEALYBUG - DELAWARE - All stages of an undetermined species abundant on blue-grass sod locally in New Castle County. (Kelsey, et al.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Continues sporadic; ranged light to heavy. Counts per 100 sweeps as high as 10,000 in Graham County, and ranged 350-3,500 in Maricopa, Pinal and Yuma Counties. (Ariz. Coop. Sur.). TEXAS - Heavy populations, 35-40 per sweep, reported on alfalfa in Brazos and Burleson Counties. (Randolph).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Heavy nymphal populations on milo in Visalia, Tulare County. (Cal. Coop. Rpt.). UTAH - Decreased noticeably in Cache-Box Elder County alfalfa during past 2 weeks. (Knowlton). WYOMING - Adults averaged 42 per 100 sweeps in Goshen County alfalfa. (Marks).

PLANT BUGS - NEBRASKA - Lygus lineolaris adults approximately 20 per 10 sweeps and Adelphocoris lineolatus adults 6 per 10 sweeps in southeast and east areas; lower populations present in northeast area. (Roselle, Bergman). NORTH DAKOTA - L. lineolaris adults 0-1 per sweep in alfalfa in north central areas. (N. D. Ins. Sur.). UTAH - A. superbus numerous on alfalfa in Brigham-Willard area, Box Elder County; 90 percent adults. (Knowlton).

STINK BUGS - ARKANSAS - Infestations of stink bugs in soybeans, primarily Acrosternum hilare, quite variable as has been the case in past years. Most fields have none to low numbers; only 2 of 11 fields surveyed in Lonoke County, east central area, infested, and these by A. hilare. Highest count 5 per 30 feet of row. Proximity to alternate hosts very important factor affecting stink bugs in soybeans. Numbers in infested fields increased sharply as is customary at this time of year. (Ark. Ins. Sur., Sharp).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Adult activity in research plots in heavily infested area near Galien, Berrien County, strikingly reduced. Fresh feeding signs on grasses very light. Relatively inactive adults moved deep into cracks used as hibernation sites and quite difficult to find. Beetles previously found in duff and crowns of bunchgrasses have moved out. On survey trip October 1, no especially favored hibernation sites found. Most beetles found within 3 feet of ground in wide variety of situations. (Ruppel, Gomulinski, Castro).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - D. undecimpunctata howardi adults approximately 20 per 10 sweeps on alfalfa in Seward and York Counties; D. virgifera adults 8 per 10 sweeps on alfalfa in same counties. Unidentified larvae causing damage to winter wheat in Burt County. (Bergman). DELAWARE - D. undecimpunctata howardi present on soybeans in several areas of State, but generally less common this fall on most hosts as compared with 1962. (Burbutis). OHIO - Overall damage by D. longicornis does not appear as severe as previously diagnosed, especially in Fayette and Pickaway Counties, central area. However, severe damage resulted in parts of Wyandot County, north central area. D. undecimpunctata howardi caused severe lodging of 15-acre field of silage corn in Pickaway County. (Blair).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Light infestations on soybeans in south central and southwest areas. (Johnson).

ALFALFA WEEVIL (Hypera postica) - VIRGINIA - Larvae ranged 2-17 (averaged 9) per square foot pan sample in field of alfalfa near Christiansburg, Montgomery County. Adults and pupae present. (Pienkowski). Larvae averaged 16 per 100 sweeps in old field of alfalfa near Narrows, Giles County; no adults encountered. (Tarpley).

A WHITE-FRINGED BEETLE (Graphognathus sp.) - GEORGIA - Light to moderate feeding on foliage of peanuts and weeds in southwest Decatur County. (Galbreath).

A BILLBUG (Sphenophorus callosus) - ALABAMA - Feeding on Bahia grass in Lee County. (Barwood).

AN ANTHRICID BEETLE (Notoxus constrictus) - CALIFORNIA - Medium adult populations on corn plantings in Visalia, Tulare County. (Cal. Coop. Rpt.).

SAP BEETLES - CALIFORNIA - Carpophilus humeralis heavy on corn plants in Visalia, Tulare County. (Cal. Coop. Rpt.). OHIO - Glischrochilus quadrisignatus adults still active on late-maturing field corn in northwest; feeding damage occurring on silks and ear tips of green corn. (Lyon).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Heavy damage to late grain sorghum reported in localized areas of Yoakum County. (Tex. Coop. Rpt., Hanson).

A THRIPS (Anaphothrips obscurus) - PENNSYLVANIA - Heavy population reported causing damage to field corn on June 27 at New Chester, Adams County. Det. by K. O'Neill. (Pepper).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - UTAH - Injury to field corn in Utah County increased as season advanced. (Knowlton).

A BERMUDA GRASS MITE (Aceria neocynodonis) - NEVADA - Medium to heavy infestations on hybrid pasture Bermuda grass in Pahrump Valley and lawn Bermuda grass in Lathrop Wells, Nye County; a new county record. (Lauerdale).

Weather of the week ending October 7 (Continued from page 1204)
the coast of Washington and showers, generally less than 0.10 inch, fell over California (except the interior valleys), Oregon, and eastward to Arizona, Utah, Idaho, and Montana. Small amounts fell over Pennsylvania, New York, and along the Atlantic coast as far south as Cape Hatteras, North Carolina. Elsewhere, precipitation was extremely scanty. Wide areas over the northern Great Plains, the middle and southern Rocky Mountains, and eastward to the Great Lakes and southern Atlantic coast received no rain or only light sprinkles.

Temperatures averaged above normal over the western half of the Nation except Texas; also over the northern and central Great Plains and the southern half of Florida. Temperatures averaged below normal over Texas and eastward to the Atlantic Ocean and northeastward to the Ohio River Valley and New York. Temperature departures ranged from +17° at Rapid City, South Dakota, to -7° at Norfolk, Virginia.

In brief summary, over most of the Nation the weather during the week ending October 7 was sunny and dry, with low relative humidity, warm afternoons, and cool nights. (Summary supplied by U.S. Weather Bureau.)

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - PENNSYLVANIA - Severe in nonsprayed and partly sprayed apple orchards in southwestern area (Udine); similar in northwestern area (Adams). Very high in unsprayed apple orchards in southeast; up to 88 percent of fruit infested. (Menusan). OHIO - Trace of second-brood adults emerged in northeastern area. (Still). MICHIGAN - Adults of strain infesting crab apples in Ingham County still present but in fewer numbers; females collected October 1, contained eggs; observed ovipositing. Larvae representing all stages present in fruit which has been dropping for 3 weeks or longer. (Dowdy). WISCONSIN - Damage prevalent in poorly sprayed fruit in Kenosha County. (Wis. Ins. Sur.).

SHOT-HOLE BORER (Scolytus rugulosus) - UTAH - Damage conspicuous in some orchards in Salt Lake County and at Moab, Grand County. (Knowlton).

PLUM CURCULIO (Conotrachelus nenuphar) - PENNSYLVANIA - Below average on apples in southeastern area; number 2 apple insect. (Menusan).

CODLING MOTH (Carpocapsa pomonella) - PENNSYLVANIA - "Stings" and "worms" present in partly sprayed apple orchards in southwestern area. (Udine). Very few noted in northwestern area. (Adams). Low on apples in southeastern area. (Menusan). UTAH - Moderate in Tooele County apples. (Knowlton, Biggs).

Peach Pests in Alabama - ORIENTAL FRUIT MOTH (Grapholitha molesta) extremely active on isolated peaches in Lee County. These trees also under heavy attack by PEACH TREE BORER (Sanninoidea exitiosa) and LESSER PEACH TREE BORER (Synanthedon pictipes) with unusual, large amounts of gum residue collecting on bark and ground from injury. (McQueen).

PLANT BUGS - PENNSYLVANIA - Unusually light on apples in northwestern area. (Adams). Low on apples in southeast. (Menusan).

APPLE LEAFHOPPER (Empoasca maligna) - PENNSYLVANIA - Caused severe leaf injury in poorly sprayed apple orchards in Carbon, Lehigh and Montgomery Counties. Increasing over 1962. (Menusan).

SAN JOSE SCALE (Aspidiotus perniciosus) - PENNSYLVANIA - Appearing in number of orchards; high in apple trees in southwestern area. (Udine). Heavier than in 1962 in northwestern area. (Adams). FLORIDA - Infested leaves of pear at Ocala, Marion County. (Condo, Sept. 26).

FORBES SCALE (Aspidiotus forbesi) - PENNSYLVANIA - Heavier than in 1962 in northwestern area. (Adams).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Found for the first time in State in Jackson County. Infestation in Medford 8 miles in diameter, including Jacksonville, light at perimeter and heavy in center. (Larson). CALIFORNIA - Heavy in walnuts in Gilroy, Santa Clara County; taken for the first time in Placerville, El Dorado County. Heavy in peach fruit in San Jose, Santa Clara County; this is first instance of peaches being infested in northern area. Infestations occurred in late varieties of peaches in Riverside and San Bernardino Counties for many years. (Cal. Coop. Rpt.). UTAH - Larvae infested nearly all English and black walnuts in Willard-Ogden area, Box Elder and Weber Counties, and Tooele area of Tooele County. Very damaging to English and black walnuts at home in Ogden, Weber County. (Knowlton).

PECAN WEEVIL (Curculio caryae) - GEORGIA - Moderate to heavy on pecans in Randolph County. (Osburn, Sept. 27).

CYCLAMEN MITE (Steneotarsonemus pallidus) - OREGON - Attacking catkins of Duchilly filberts in Brooks area, Marion County; tips of infested catkins turning brown and dropping off. (Larson).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Additional female taken in McPhail trap in Nogales, Santa Cruz County. This is fifth specimen reported; inspection of fallen fruit for larvae negative. (Ariz. Coop. Sur.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Heavy on citrus in Sebastopol, Sonoma County; this mite extended range, now nearly statewide and occurring on many hosts other than citrus. (Cal. Coop. Rpt.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Light on sweet orange at Plant City, Hillsborough County. (Custead).

SOFT SCALES (Saissetia spp.) - FLORIDA - S. hemisphaerica and S. oleae moderate on calamondin at Miami, Dade County. (Knowles).

TRUCK CROP INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - OHIO - Larvae light on green potato vines and "green head" tubers near Sylvania, Lucas County; 3 farms with infestations. Estimated pattern of infestation 5 by 10-15 miles, ranging from Sylvania eastward toward Lake Erie and from the Michigan-Ohio State line south. Most infestations at end of field where spray material inadequately applied; sprayed fields have excellent control. Most treatment stopped after September 1. Up to 75 percent of crop for potato chips; therefore, potatoes will be stored at 56-57° F. which may favor population buildup. (Pinkelman, Lyon). MICHIGAN - Blacklight trap near Samaria, Monroe County, yielded 75 or more adults week ending September 30. This represents reduction of about 50 percent of previous week. (Smith, Newman).

TOMATO FRUITWORM (Heliothis zea) - NEW MEXICO - Damage noted in several tomato fields in Luna County; causing minor damage in home gardens in Dona Ana County. (N. M. Coop. Rpt.).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Infested tomato fruit in Hanford, Kings County. (Cal. Coop. Rpt.).

VINEGAR FLIES (Drosophila spp.) - MARYLAND - Heavy around picked tomatoes on farm at Salisbury, Wicomico County. (U. Md., Ent. Dept.).

POTATO APHID (Macrosiphum euphorbiae) - OHIO - Nymphs and adults of red form abundant on potato leaves at Columbus, Franklin County. (Lyon).

A STINK BUG (Euschistus conspersus) - CALIFORNIA - Medium in tomato plantings in Sacramento, Sacramento County; stink bug damage heavier this season than in past several years. (Cal. Coop. Rpt.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Heavy on black-eye peas in Niland, Imperial County. (Cal. Coop. Rpt.).

APHIDS - NEW MEXICO - Unspecified species heavy on chili peppers in Las Cruces area, Dona Ana County; most growers treating. (N. M. Coop. Rpt.). SOUTH CAROLINA - Aphis craccivora and Smyntthurodes betae infested bean leaves in Greenwood County June 20. Det. by L. M. Russell. (McAlister, Nolan).

SPIDER MITES - UTAH - Caused moderate damage to beans in Heber-Midway area, Wasatch County. (Knowlton, Daniels).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Heavy on lima beans in Fountain Valley, Orange County. (Cal. Coop. Rpt.).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW MEXICO - Adults and larvae abundant in cauliflower fields in Albuquerque area, Bernalillo County; larvae causing considerable damage to plants. (N. M. Coop. Rpt.). ALABAMA - Extremely heavy on all collard plantings examined in home gardens in Lee, Macon, Russell and Barbour Counties. (McQueen).

ONION MAGGOT (Hylemya antiqua) - UTAH - Damage moderate to nearly 100 percent in infested home gardens in Wasatch and Cache Counties. (Thornley, Knowlton). Infested 20-90 percent of onions in some Salt Lake County smaller plantings. (Knowlton).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - DELAWARE - Larvae common and feeding on asparagus foliage locally in Kent County. (McCreary).

SOUTHERN POTATO WIREWORM (Conoderus falli) - NORTH CAROLINA - Most abundant species in sweetpotatoes in Sampson County test plots. (Mount).

CYCLAMEN MITE (Stenotarsonemus pallidus) - CALIFORNIA - Heavy on basil (Ocimum basilicum) in Pacifica, San Mateo County. (Cal. Coop. Rpt.).

ROSE STEM GIRDLER (Agrilus rubicola) - UTAH - Present in Morgan area raspberries, Morgan County. (Knowlton, Call).

CABBAGE LOPPER (Trichoplusia ni) - CALIFORNIA - Heavy on black-eye peas in Niland, Imperial County. (Cal. Coop. Rpt.). ARIZONA - Moderate to heavy on lettuce fields of Yuma, Maricopa and Pima Counties; ranged 25-40 per 100 plants. (Ariz. Coop. Sur.). NEW MEXICO - Moderately heavy and damaging cauliflower and lettuce in Bernalillo County. (N. M. Coop. Rpt.). ALABAMA - Extremely heavy on all collard plantings examined in home gardens in Lee, Macon, Russell and Barbour Counties. (McQueen). FLORIDA - Light on cabbage at Sanford, Seminole County; about 25 percent of 100 plants infested. (Desin).

BEE T ARMYWORM (Spodoptera exigua) - CALIFORNIA - Heavy on black-eye peas in Niland, Imperial County. (Cal. Coop. Rpt.). ARIZONA - Light on lettuce fields of Yuma, Maricopa and Pima Counties. (Ariz. Coop. Sur.).

LEAF MINER FLIES (Liriomyza spp.) - CALIFORNIA - Infested tomato fruit at Hanford, Kings County. (Cal. Coop. Rpt.). FLORIDA - Caused heavy damage to old growth on celery plants but practically no damage to new growth at Sanford, Seminole County. (Desin).

A LEAF BEETLE - NEW MEXICO - Moderate to heavy and damaging foliage of eggplant and turnips at Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

SLUGS - WISCONSIN - Feeding heavily on garden crops in Winnebago County; apparently of little consequence in most areas of State during past season. (Wis. Ins. Sur.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Continues to emerge from top bolls in Macon, Lee, Russell and Barbour Counties, following fall rains which resulted in second growth. Some fields have 2-20 squares at tops of plants, with considerable new leaf growth; 80-100 percent of squares with feeding punctures. Where squares and young bolls scarce, weevils feeding on new leaves. (McQueen). TEXAS - Heavy locally in Anderson County. (LaRue).

BOLLWORM (Heliothis zea) - ARIZONA - Populations remain the same or have been reduced in all cotton-growing areas. Few fields being controlled. (Ariz. Coop. Sur.). CALIFORNIA - Heavy on cotton in Brawley, Imperial County. (Cal. Coop. Rpt.).

BOLLWORMS (*Heliothis* spp., et al.) - ALABAMA - Numerous and feeding on squares, bolls and, in many instances, on leaves only; not uncommon to find almost full-grown larvae feeding on cotton leaves, but apparently not having fed on squares or bolls. *H. zea* adults noted as numerous in cotton fields. (McQueen). ARKANSAS - All of 75 larvae collected in Desha County (southeast) determined as *H. zea*. One *H. virescens* and 17 *H. zea* collected in Prairie County (east central) September 25. (Ark. Ins. Sur.).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - In Graham County, 14 larvae found on lint cleaners at Safford on 2 occasions; all larvae have come from same field. (Ariz. Coop. Sur.). OKLAHOMA - All gin trash inspections made in 11 central and southern counties positive; total of 856 specimens found in 528 bushels of trash inspected. Lint cleaner inspections in Caddo, Cotton, Garvin and Stephens Counties positive; inspections in Canadian, Harmon and Tillman Counties negative. (Okla. Coop. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - ARIZONA - Adults emerged from infested cotton fields in Graham County. Possibility of large future infestations exists. (Ariz. Coop. Sur.). NEW MEXICO - Light to heavy, spotted populations defoliating cotton, mostly in southern section of Mesilla Valley, Dona Ana County. (N. M. Coop. Rpt.). ALABAMA - Medium in Baldwin County cotton. (Fairley, Smallwood).

BEE T ARMYWORM (*Spodoptera exigua*) - CALIFORNIA - Light in gin trash at Bakersfield, Kern County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEVADA - Light to medium in several cotton fields in Pahump Valley, Nye County. (Lauderdale). CALIFORNIA - Light numbers noted in gin trash in Bakersfield, Kern County. (Cal. Coop. Rpt.).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Numbers decreasing in cotton fields of Yuma, Maricopa and Pinal Counties; ranged 5-15 per 100 plants. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - CALIFORNIA - Heavy on cotton in Brawley, Imperial County. (Cal. Coop. Rpt.). ARIZONA - Populations about same as previously reported in Graham, Pinal, Maricopa and Yuma Counties. Larvae range 15-30 per 100 plants in most areas. (Ariz. Coop. Sur.).

GARDEN WEBWORM (*Loxostege similalis*) - ARIZONA - Moderate to heavy in some cotton fields in Graham, Pinal and Maricopa Counties. Larvae ranged 75-120 per 100 plants. (Ariz. Coop. Sur.).

A NOCTUID MOTH (*Proxenus mindara*) - CALIFORNIA - Larvae light in gin trash in Bakersfield, Kern County. (Cal. Coop. Rpt.).

COTTON APHID (*Aphis gossypii*) - NEW MEXICO - Populations building up rapidly in many Dona Ana County cotton fields. (N. M. Coop. Rpt.). NEVADA - Light, spotted infestations present in Pahump Valley, Nye County. (Lauderdale).

THRIPS - CALIFORNIA - *Leucothrips piercei* medium on cotton plantings in Winterhaven, Imperial County. *Scirtothrips citri* light in same area. (Cal. Coop. Rpt.).

SPIDER MITES - NEVADA - Generally light on cotton, but medium to heavy in some fields in Pahump Valley, Nye County. (Lauderdale). ALABAMA - Numerous in all fields and appear to be more widespread than usual at this time of year. (McQueen).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SPRUCE NEEDLE MINER (*Taniva albolineana*) - CALIFORNIA - Additional spruce trees infested in Susanville and Johnstownville, Lassen County. Survey will continue with eradicated treatment planned for spring 1964. Pest occurred in Alturas, Modoc County, several years ago but was eradicated. (Cal. Coop. Rpt.).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - COLORADO - Caused extensive but generally not serious damage to ponderosa pine in northern Larimer County. (Dalleske, Thatcher).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - VIRGINIA - Active in 2 Rappahannock County loblolly pine plantations; damaged all trees in 2 loblolly plantations in Pulaski and Montgomery Counties. Infestation increasing in a Russell County loblolly plantation; caused extensive damage to young loblolly pines in Accomack and Northampton Counties. Causing tip kill in several locations in loblolly pine plantation in Westmoreland County. (Va. For. Pest Surv. Rpt., Aug. Summ.).

PINE BARK BEETLES - VIRGINIA - *Dendroctonus* spp. activity apparently increasing, particularly in King William County, and in Chesterfield and Hanover Counties. Active in one area of Orange County and activity noted on shortleaf and Virginia pines in scattered spots in Farmville District. *Dendroctonus frontalis* activity had not increased as rapidly as expected by September 18. Most activity noted in same counties where activity highest in fall of 1962. Continued air survey contemplated until fall coloration limits that activity. *D. frontalis* activity noted in Brunswick County; damage increasing as evidenced by reports of small groups of pines killed in King William, Powhatan, Goochland and Chesterfield Counties. Damaging shortleaf and Virginia pines in Fluvanna County; increased activity reported in Prince Edward, Cumberland, Amelia and Mecklenburg Counties; all areas 0.5 acre or less in size. Damage noted in 5 new spots in Accomack County and 1 spot in Northampton County. *Ips* spp. active in Fluvanna County and in all counties in Farmville District, being most active in Cumberland, Amelia and Prince Edward Counties. Infested Virginia and shortleaf pines at a spot in Scott County and killing 9 loblolly pines in Mathews County. *Ips* spp. and *Dendroctonus* spp. most obvious in loblolly pine in Dinwiddie, Greensville, Sussex and Southampton Counties. (Va. For. Pest Surv. Rpt., Aug. Summ.).

PALES WEEVIL (*Hylobius pales*) - VIRGINIA - Damaged 10 percent of loblolly plantation in Mecklenburg County. (Va. For. Pest Surv. Rpt., Aug. Summ.).

A SPRUCE GALL APHID (*Chermes* sp.) - CALIFORNIA - This and a spruce scale (*Physokermes* sp.) heavy on fir trees in Sebastopol, Sonoma County. (Cal. Coop. Rpt.).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - PENNSYLVANIA - Several infestations reported over State, although affected areas are one acre or less in size. Austrian pine 50 percent defoliated in Clarion County; red pine 25 percent defoliated in Potter County and 75 percent defoliated in Elk County; loblolly pine 10 percent defoliated in York County. (Sevinsky, Armstrong, Simpson, Kane; Sept. 25). Will continue to feed through October. Successful control applied in Clarion County. (Pa. For. Pest Rpt., Sept. 25). VIRGINIA - Larvae defoliated single loblolly pine in Nelson County and single pitch pine sapling and several Virginia pines in Wythe County. Infested 10-12 percent of 3-year-old loblolly pine plantation in Russell County; infested trees 80-90 percent defoliated. Also active on shortleaf and loblolly pine in 2 areas of Wise County and 1 area in Scott County. (Va. For. Pest Surv. Rpt., Aug. Summ.).

WHITE-PINE WEEVIL (*Pissodes strobi*) - VIRGINIA - Activity about same as last year (light) in plantations in Amherst and Loudoun Counties; increasing in 2 Madison County plantations. Damage appears light to white pines in Pulaski County and decreasing in intensity. (Va. For. Pest Surv. Rpt., Aug. Summ.).

GYPSEY MOTH (Porthetria dispar) - PENNSYLVANIA - Survey conducted during summer resulted in trap recoveries of 21 male moths in 10 different locations in Northampton, Monroe and Pike Counties. Most moths caught in August which reflects delay in hatching last spring. Egg masses located in Northampton County; first time infestation reported from county. Affected areas are, for most part, near Delaware River. (Jeffery, Sept. 25).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - PENNSYLVANIA - Infestation exists over several hundred acres in Cumberland and Franklin Counties; defoliation up to 20 percent in mixed oak. (Eckert, Sept. 25).

FALL WEBWORM (Hyphantria cunea) - PENNSYLVANIA - Very heavy on wild cherry in Jefferson and Mercer Counties. (Wolff, Sept. 20). VIRGINIA - Evident in black cherry generally throughout Orange and Culpeper Counties; causing variable defoliation of sourwood and cherry in all counties in Farmville District; noted occasionally on persimmon in Halifax County; causing complete defoliation of sourwood and cherry in Roanoke, Floyd, Patrick and western Franklin Counties. (Va. For. Pest Surv. Rpt., Aug. Summ.).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Defoliation of oak trees continues in Stillwater and Ponca City areas, north central. (Okla. Coop. Sur.).

YELLOW-NECKED CATERPILLAR (Datana ministra) - PENNSYLVANIA - Defoliated few pin oaks in nursery at Harford, Susquehanna County. (Andreychik, Sept. 12). MICHIGAN - Late-stage larvae found on broadleaved trees in Ingham County contain many eggs of a parasite, possibly a tachina fly. (Evans).

A NOTODONTID MOTH (Datana sp.) - TEXAS - Heavy, local larval populations damaging oaks in Brazos County. (Randolph).

AN OECOPHORID MOTH (Psilocorsis quercicella) - SOUTH CAROLINA - Collected from oak leaves in Anderson County October 16, 1962. This is first entry of this species for the Faunal Survey List. Det. by D. M. Weisman. (McAlister).

A SHIELD BEARER (Coptodisca sp.) - ARIZONA - Larvae, possibly of a new species, damaging cottonwood trees in Yuma County; infestations heavy in many areas. (Ariz. Coop. Sur.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - VIRGINIA - Active on black oak and locust in 3 spots in Lee, 2 spots in Wise and 1 spot in Washington Counties. (Va. For. Pest Surv. Rpt., Aug. Summ.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEW MEXICO - Spread to Pajarito-Armijo areas in Bernalillo County noted; damage light to heavy. (N. M. Coop. Rpt.).

LOCUST LEAF MINER (Xenochalepus dorsalis) - VIRGINIA - Damage evident on 3-6 square mile area in Roanoke County. (Va. For. Pest Surv. Rpt., Aug. Summ.).

WILLOW FLEA WEEVIL (Rhynchaenus rufipes) - PENNSYLVANIA - Caused 100 percent browning-off of willows in Chestnut Hill Township, Monroe County, during August. (Denniston).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - PENNSYLVANIA - Causing concern in numerous areas of State. Also a nuisance to homeowners. (Hill, Nichols, Sept. 25).

A BARK BEETLE (Pityophthorus juglandis) - CALIFORNIA - Heavy in black walnut trees locally in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

BRONZE BIRCH BORER (Agrylus anxius) - OHIO - Severely damaged birches in many areas of Toledo, Lucas County, northwest; dead birches quite apparent. (Brockway).

WISCONSIN - Caused death of several white birches in an area of Madison, Dane County. (Wis. Ins. Sur.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - First activity of season reported from Hughes and Okmulgee Counties (east central); also active in Kay (north central) and Choctaw (southeast) Counties on elm and pecan trees. (Okla. Coop. Sur.).

JAPANESE BEETLE (Popillia japonica) - PENNSYLVANIA - Feeding again noticeable on larch in several areas of State. Affected areas turning brown. (Robinson, Brooks; Sept. 25).

A CUBAN MAY BEETLE (Phyllophaga bruneri) - FLORIDA - Feeding damage ranged light to severe on leaves of several tree varieties at Kendall, Dade County, September 30. (Brown).

WALKINGSTICK (Diaperomera femorata) - ARKANSAS - Numbers high at higher elevations in western area. In Rich Mountain area, Polk County (west central), infestations heavy on lower elevations in addition to higher elevations. Infestations at lower elevations have not occurred past few years. (Ark. Ins. Sur.).

APHIDS - CALIFORNIA - Therioaphis tiliae heavy on linden trees in Chico, Butte County. (Cal. Coop. Rpt.). NEVADA - Pterocomma sp. heavy on willows in Reno, Washoe County. (Bechtel). UTAH - Unspecified species heavy on Norway maples and other shade trees in Tooele, Tooele County. (Knowlton, Biggs). Drepanosiphum braggii, mostly sexual forms, heavy on boxelder trees in Wellsville-Wellsville Canyon area, Cache County; foliage very sticky. D. utahensis extremely numerous in parts of Logan and Wellsville Canyons, Cache County, and in Ogden Canyon, Weber County, with foliage very sticky. Small numbers of D. granovskyi also common on maples. (Knowlton). OHIO - Unspecified species infesting Christmas trees at Ravenna, Portage County, northeast. (Blue).

LEAFHOPPERS - OKLAHOMA - Populations continue heavy on American elms in Stillwater area, Payne County; causing spotting of leaves and honeydew deposits on cars beneath trees. Also causing considerable annoyance in homes. (Okla. Coop. Sur.). NEVADA - Empoasca sp. medium on elms in Elko, Elko County; causing leaf chlorosis. (Earnist).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - MARYLAND - Heavy on silver maple at Williamsport, Washington County. (U. Md., Ent. Dept.).

EUROPEAN ELM SCALE (Gossyparia spuria) - UTAH - Severe on number of large elms at Logan, Cache County, and at Salt Lake City, Salt Lake County. (Knowlton).

AN OAK PIT SCALE (Asterolecanium minus) - PENNSYLVANIA - Causing severe dieback to chestnut oak in Franklin County; symptoms noticeable on 40-50 percent of trees. Pest on increase in this area. (Eckert, Sept. 25).

BAGWORM (Thyridopteryx ephemeriformis) - PENNSYLVANIA - Pupating on juniper and arborvitae nursery stock at Cannonsburg, Washington County. (Goodman, Sept. 16). VIRGINIA - Caused moderate damage to arborvitae and pines at 2 locations in Washington County; present on redcedar generally throughout Tappahannock District on individual trees, causing partial defoliation. (Va. For. Pest Surv. Rpt., Aug. Summ.). WISCONSIN - Reported from 2 areas in Fond du Lac County. In all instances, found on nursery stock brought in from outside of State. To date, pest has not been found to survive over winter. (Wis. Ins. Sur.). NORTH DAKOTA - Larvae taken from arborvitae in Hunter area, Cass County. (N. D. Ins. Sur.).

MIMOSA WEBWORM (Homadaula albizziae) - OHIO - Light to moderate infestations observed on honeylocust trees in nursery near Marion, Marion County, central area. (Lyon).

CORN EARWORM (Heliothis zea) - CALIFORNIA - Larvae of this species and Heliothis virescens medium on Bird-of-Paradise tree in Bakersfield, Kern County. (Cal. Coop. Rpt.).

ORANGE TORTRIX (Argyrotaenia citrina) - CALIFORNIA - Larvae medium on fuchsia leaves in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

A NOCTUID MOTH (Catabena esula) - CALIFORNIA - Medium on lantana plants in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A GEOMETRID MOTH (Coryphista meadi) - CALIFORNIA - Larvae medium in twigs of Mahonia aquifolium in San Leandro, Alameda County. (Cal. Coop. Rpt.).

A PYRAUSTID MOTH (Tholera reversalis) - CALIFORNIA - Heavy larval populations found feeding in stems and twigs of Scotch-broom in Banning, Riverside County. (Cal. Coop. Rpt.).

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni) - MARYLAND - Heavy on chrysanthemum planting at Millersville, Anne Arundel County. (U. Md., Ent. Dept.).

ROSE APHID (Macrosiphum rosae) - OHIO - Ranged moderate to heavy on roses at several northwest area locations. (Lyon).

TARNISHED PLANT BUG (Lygus lineolaris) - NORTH DAKOTA - Adults observed working in hardy chrysanthemum flowers in Fargo, Cass County. (Olson).

A SPITTLEBUG - ALABAMA - Feeding on ornamentals throughout Baldwin County; damage uncertain. Common over entire State. (Fairley, Smallwood).

COCCIDS - PENNSYLVANIA - Unaspis euonymi crawlers active on heavily infested landscape planting of euonymus at University Park, Centre County. (Collacott, Sept. 9). VIRGINIA - U. euonymi heavy on bittersweet at a location in Oak Hall, Accomack County. (Amos, Sept. 23). OHIO - Lepidosaphes ulmi ranged light to moderate on several hundred silver maples in west central area. (Faust). NEW MEXICO - Spotted, light to abnormally heavy infestations of U. euonymi reported on euonymus at Albuquerque, Bernalillo County. Heavily infested young plants had to be destroyed at several nurseries. Homeowners experiencing difficulty with control. (N. M. Coop. Rpt.). CALIFORNIA - U. euonymi heavy locally on euonymus in Sacramento, Sacramento County. Leucaspis portaeareae heavy on Podocarpus totara specimen shrubs in Golden Gate Park, San Francisco, San Francisco County. This species subject to eradication as this is only known infestation in State. (Cal. Coop. Rpt.).

NATIVE HOLLY LEAF MINER (Phytomyza illicicola) - ALABAMA - Severely damaged several holly plants in Lee County. (McQueen).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - UTAH - Very troublesome in Perry-Brigham City-Corinne area, Box Elder County. (Knowlton, Sept. 30). Annoying in several parts of Wasatch County. (Knowlton, Davis). NEW MEXICO - Unspecified species annoying residents in several sections of Las Cruces, Dona Ana County. (N. M. Coop. Rpt.). TEXAS - Unspecified species locally heavy about homes in Parker County. (Turney). FLORIDA - In Alachua County, Aedes atlanticus/tormentor biting at South Grove Park (Sept. 23); Aedes infirmatus and Psorophora ferox moderate at same location (Sept. 21); Psorophora confinnis annoying at 2 locations in Gainesville (Oct. 3). (Mead). NORTH CAROLINA - Aedes sollicitans increased greatly along coastal areas about September 16. (Ashton). DELAWARE - Aedes sollicitans adults abundant and annoying in areas of eastern Kent County. (F. Murphey). OHIO - Following species trapped in Lucas County (northwest) during period June 4 through September 13: Culex pipiens 710; Culex restuans 29; Culex salinarius 35; Culex tarsalis 2; Culex territans 14; Culex erraticus 1; Aedes vexans 195; Aedes excrucians 2; Aedes

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Heavy counts of 25-30 per head noted on cattle in Choctaw County, southeast. (Okla. Coop. Sur.). WISCONSIN - Continues active in Waupaca and Price Counties. (Wis. Ins. Sur.).

HORSE FLIES (Tabanus spp.) - OKLAHOMA - Averaged 5 per head on animals in Choctaw County area, southeast. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - VIRGINIA - Adults averaged 16 per head on 2 herds checked in Tazewell County and 10 per head on 2 herds in Bland County. (Tarpley).

HOUSE FLY (Musca domestica) - OKLAHOMA - Counts of 30 per head common on cattle in Choctaw County, southeast. (Okla. Coop. Sur.).

SHEEP KED (Melophagus ovinus) - UTAH - Common on sheep examined in Tooele County. (Biggs, Knowlton).

BROWN DOG TICK (Rhipicephalus sanguineus) - ARIZONA - Increased buildups reported by homeowners in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - PENNSYLVANIA - Nymphs and adults congregating on trees and houses in Northampton, Lehigh and Montgomery Counties. (Menusan). MICHIGAN - Infestations local in southern counties. (Jones). NEBRASKA - Adults concentrating on buildings in urban and rural areas at Beaver Crossing, Seward County. (Bergman). UTAH - Entering buildings in Tooele and Cache Counties. (Knowlton, Biggs).

COCKROACHES - MICHIGAN - Blatta orientalis locally troublesome in southern counties. (Jones). MARYLAND - Supella supellectilium infested home at Rockville, Montgomery County. (U. Md., Ent. Dept.).

CRICKETS - WISCONSIN - Entering homes and causing concern. (Wis. Ins. Sur.). MICHIGAN - Local infestations in southern counties. (Jones). OHIO - Undetermined cricket entering few homes in Columbus, Franklin County. (Teichert). NEVADA - A camel cricket entering homes in Weed Heights, Lyon County. (Batchelder)

EARWIGS - ARIZONA - Forficula sp. becoming serious nuisance to homeowners in Maricopa, Pinal and Pima Counties. (Ariz. Coop. Sur.). GEORGIA - Probably Labidura riparia, heavy in homes in Cairo. (Galbreath).

HOUSE FLY (Musca domestica) - OKLAHOMA - Considerable numbers continue present in buildings and sheltered areas in Stillwater, Payne County. (Okla. Coop. Sur.).

CLUSTER FLY (Pollenia rudis) - OHIO - Causing complaints at Cambridge, Guernsey County. (Scott, Holdsworth). MICHIGAN - Infestations local in southern counties. (Jones).

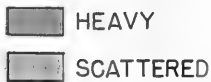
FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Larvae leaving trees and entering homes at Las Cruces. (N. M. Coop. Rpt.).

HACKBERRY-NIPPLE-GALL MAKER (Pachypsylla celtidismamma) - NEBRASKA - Adults annoying homeowners in eastern area. (Bergman).

MILLIPEDS - WISCONSIN - Entering homes and causing concern. (Wis. Ins. Sur.). NEBRASKA - Migrating into buildings and homes in eastern area. (Bergman). NORTH CAROLINA - Very numerous in basement of home in Orange County. (Jones).

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - MARYLAND - Adults noted in pantry of home at Darlington, Harford County. (U. Md., Ent. Dept.).

MORMON CRICKET ADULT SURVEY FALL 1963



PLANT PEST CONTROL DIVISION
ARS, U.S.

AUGUST 1963

CASEMAKING CLOTHES MOTH (Tinea pellionella) - NEBRASKA - Light in 2 homes in Scotts Bluff County. (Bergman).

CARPET BEETLES - MICHIGAN - Infestations local in southern counties. (Janes). WISCONSIN - Becoming noticeable and causing many inquiries; principally Attagenus piceus. (Wis. Ins. Sur.).

CIGARETTE BEETLE (Lasioderma serricorne) - ALABAMA - Infested small lots of peanuts and dried fruit in several homes in Lee County. (McQueen).

SUBTERRANEAN TERMITES - ARIZONA - Numerous infestations around homes in Phoenix area, Maricopa County. (Ariz. Coop. Sur.). NORTH CAROLINA - Reticulitermes hageni swarmed in building in Forsyth County September 17. (Wright).

A NONSUBTERRANEAN TERMITE (Incisitermes minor) - PENNSYLVANIA - Collected from wood paneling in basement of home at Philadelphia August 19. Det. by T. E. Snyder. (Cole).

STORED-PRODUCT INSECTS

Stored-product Insects in Wyoming - SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) adults found in 6 and CONFUSED FLOUR BEETLE (Tribolium confusum) found in 5 of 15 granaries inspected in Goshen County. Infestations light in all infested granaries. Adults of RED FLOUR BEETLE (Tribolium castaneum) found in 7 of 15 granaries; very heavy in one granary, light in all others. (Marks).

Stored-product Insects in Florida - At Orlando, Orange County, Attagenus sp. and Dermestes caninus light inside of feedmill; RED FLOUR BEETLE (Tribolium castaneum) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) light at 2 separate locations; and LESSER MEALWORM (Alphitobius diaperinus) light at 3 different locations. (Lewis, Sept. 25). CIGARETTE BEETLE (Lasioderma serricorne) light in stored seed at Sanford, Seminole County. (Desin, Sept. 25).

BENEFICIAL INSECTS

LADY BEETLES - CALIFORNIA - Hippodamia convergens medium on corn plantings in Visalia, Tulare County. This is unusually late for adults to be active in field. Stethorus picipes medium on grapevines in Kerman, Fresno County. (Cal. Coop. Rpt.). NEBRASKA - Hippodamia sp. adults averaged approximately 2 per 10 sweeps in alfalfa in Saline, Seward and York Counties. (Bergman).

DAMSEL BUGS (Nabis spp.) - NEBRASKA - Averaged approximately 8 adults per 10 sweeps in alfalfa in Seward County. (Bergman).

FLOWER BUGS (Orius spp.) - CALIFORNIA - Nymphs medium on leaves of morning-glory in Visalia, Tulare County. (Cal. Coop. Rpt.).

A STINK BUG (Euthyrhynchus floridanus) - VIRGINIA - All stages common around homes at 2 locations in Newport News. (Amos, Evans).

MISCELLANEOUS INSECTS

A WHITE-FRINGED BEETLE (Graphognathus peregrinus) - FLORIDA - Collected on various native hosts at 3 locations in Liberty County September 17 and 20 (Gary, Tipton, Whitehead); at location in Bay County (Whitehead, Sept. 20); and 2 locations in Okaloosa County September 10 and 19 (Offerell, Lucas, Boyd).

EUROPEAN CHAFER (Amphimallon majalis) - PENNSYLVANIA - Infestation present in approximately one-third of city of Erie. Eradication program to be conducted during October. (Jeffery, Sept. 25).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Heavy female flights in progress throughout Lee, Macon, Russell and Barbour Counties. Appears heaviest mating flight observed in 1963 in these counties. (Barwood et al.).

WASPS - UTAH - Infesting number of trees, offices and buildings on campus of Utah State University, Logan, Cache County. (Haws, Knowlton).

GREATER WAX MOTH (Galleria mellonella) - CALIFORNIA - Infested bee hives in Calexico, Imperial County. (Cal. Coop. Rpt.).

CUTWORMS - COLORADO - Collections at Rocky Ford light trap show drop in numbers of Agrotis orthogonia from 45 to 10 and Feltia subgothica from 55 to 6 during the first and last part of period of September 27-October 4. (Schweissing).

CORRECTIONS

CEIR 13(39):1149 - A PINE APHID (Essigella pini) should read (Eulachnus rileyi). Original determination in error.

CEIR 13(40):1179 - BEET ARMYWORM (Laphygma exigua) should read (Spodoptera exigua).

CEIR 13(40):HIGHLIGHTS and page 1188 - A CHRYSAUGID MOTH (Galasa rubidana) - Delete note.

LIGHT TRAP COLLECTIONS

| WYOMING | Number of traps | Species | Major crop ** |
|---------------------|-----------------|--------------|---------------|
| Centennial 8/23-29 | 11 | Chrysomelids | Wheat |
| Centennial 8/30-9/5 | 8 | Chrysomelids | Wheat |
| Centennial 9/6-9 | 3 | Chrysomelids | Wheat |
| Cheyenne 9/13-19 | 595 | Chrysomelids | Wheat |
| Laramie 9/7-13 | 1 | Chrysomelids | Wheat |
| Laramie 9/14-21 | 2 | Chrysomelids | Wheat |

* EL = blacklight; I = insecticide; MV = mercury vapor; O = other
 ** alf = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn;
 grain = small grains; leg. = legumes (unspecified); let. = lettuce; pan. = peanut; papp. = papilionaceous plants;
 SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed);
 tob. = tobacco; tom. = tomato.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 693rd meeting of the Hawaiian Entomological Society held on September 9, 1963.

AN AMPULICID WASP (Dolichurus stantoni) - A female was taken dragging its prey, a cockroach (juvenile, probably Onychostylus notulatus; det. by A. B. Gurney), by its antenna along bank of Aiea Heights trail. This was introduced from the Philippines in 1917 and has spread through Oahu, Molokai, Kauai and Midway Island. (C. M. Yoshimoto).

AN ANTHRIBID BEETLE (Araecorynus cumingii) - Reared from Mucuna seed leis purchased at the Pali look-out, Oahu, and brought in by local resident on September 5, 1963. This beetle is endemic to the Philippines and has been collected in Guam. Det. by Dr. J. L. Gressitt. (Mabel Chong).

A LACE BUG (Corythucha morrilli) - A moderate infestation of adults and nymphs was noted on Wedelia trilobata at Kokohead, Oahu. This constitutes a new host record for this tingid. (H. Nakao).

AN ORB WEAVER SPIDER (Argiope amoena) - The spider collected January 20, 1963, and exhibited at the February meeting of the Hawaiian Entomological Society (CEIR 13(10):186) has been determined as this species by Dr. W. J. Gertsch. The species is known from China, Japan and New Guinea, but is new to Hawaii. (F. Bianchi).

SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula) is now present on all major islands of Hawaii. In chronological order, latest reports as follows: August 25 - one specimen collected at Tamura's Farm, Kaunakakai, Molokai (J. R. Blalock); August 26 - one specimen found on passion-fruit farm of Maui Farm Inc., Maui (S. Ajifu); August 27 - one adult and one egg mass found 2 blocks below Lanai Avenue, west end of Lanai City, Lanai, on chayote plant (F. Burgos); (also, an unconfirmed report of an infestation in a plantation field); August 28 - pair of adults and an egg cluster found at Fuke's residence, Wailuku, Maui; August 29 - one dead adult found in a rain gauge at Village 6, Puunene, Maui (Reddicts, HSPA); 68 nymphs and 3 adults at Endo's, Paia, Maui, from tomatoes, mustard cabbage, daikon and castor-bean, and 5 nymphs and adults from eggplant at Lahainaluna High School, Lahaina (Kawamura). (C. J. Davis).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton IN Alabama DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|---|------------------------|
| A. Pest or pest complex | <u>Boll weevil, bollworm, spider mites, aphids and plant bugs</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>900,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>371 lbs. (lint)</u> |
| D. Price ^b per unit (lb.) ^c (From CRS) | \$/ | <u>.33</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>900,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>725,000</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>54</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>200 lbs.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>66.00</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>20.00</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>35,000,000 lbs.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>15.00</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>10,875,000</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>11,550,000</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>3,500,000</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>25,925,000</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by James Buttram

Date May 1963

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Peanuts (Commodity) | IN | Alabama (State or District) | DURING | 1962 (Year) |
|-----------|---|--------|--------------------------------|--------|----------------|
| A. | Pest or pest complex <u>Corn earworm, thrips, lesser cornstalk borer, red-headed peanutworm</u> | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | 195,000 | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | 1,010 lbs. | | |
| D. | Price ^b per unit (lb.) ^c (From CRS) | \$/ | .102 | | |
| E. | <u>Acres</u> ^a needing control | No. | 150,000 | | |
| F. | <u>Acres</u> ^a treated | No. | 100,000 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | 40 | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | 404 lbs. | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | 41.21 | | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | 15.00 | | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | 20,200,000 lbs. | | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | 9.75 | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | 975,000 | | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | 2,060,500 | | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | 750,000 | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 3,785,500 | | |

Comment: Corn earworm and lesser cornstalk borer were our worst insects.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by James Buttram

Date May 1963

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Soybeans (Commodity) | IN | Alabama (State or District) | DURING | 1962 (Year) |
|-----------|---|--|--------------------------------|-------------|----------------|
| A. | Pest or pest complex | Corn earworm, velvetbean caterpillar, fall armyworm, southern green stink bug, Mexican bean beetle | | | |
| B. | Number of acres ^a produced (From CRS) | No. | 149,000 | (for beans) | |
| C. | Average yield per acre ^a (From CRS) | Units/ | 20.5 | bu. | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | 2.35 | | |
| E. | Acres ^a needing control | No. | 140,000 | | |
| F. | Acres ^a treated | No. | 90,000 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | 14 | | |
| I. | Loss in yield, units per acre ^a , C x H | Units/ | 2.87 | bu. | |
| J. | Loss in yield, \$ per acre ^a , D x I | \$/ | 6.744 | | |
| K. | Loss in quality, \$ per acre ^a | \$/ | 10.00 | | |
| L. | Yield loss for all acres ^a , (E-F) x I | Units | 143,500 | bu. | |
| M. | Control cost, \$ per acre ^a | \$/ | 10.00 | | |
| N. | Control cost for all acres ^a , F x M | \$ | 900,000 | | |
| O. | Yield loss for all acres ^a , (E-F) x J | \$ | 337,720 | | |
| P. | Quality loss for all acres ^a , (E-F) x K | \$ | 500,000 | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 1,737,720 | | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by James Buttram

Date May 1963

1962 MINNESOTA INSECT LOSS ESTIMATES*

| <u>Crop</u> | <u>Pest or Pest Complex</u> | <u>Acres Treated</u> | <u>Yield Loss and Control Cost</u> |
|---------------|---------------------------------|----------------------|------------------------------------|
| Corn (grain) | Soil insects | 1,000,000 | \$6,280,000 |
| Corn (grain) | European corn borer Cutworms | --- | \$5,234,000 |
| Small grain | All insects | 3,950 | \$ 219,625 |
| Potatoes | All insects | 37,030 | \$ 423,400 |
| Forage (tame) | All insects | 1,950 | \$ 111,850 |
| Apples | All insects | 2,000 | \$ 220,000 |

Additional Acreage Treated for Insect Control

| <u>Canning Crop</u> | | <u>Mosquitoes</u> | |
|------------------------|--------|--|---------|
| 1. Sweet Corn | | Metropolitan Mosquito Control District | |
| A. European corn borer | | Breeding site treatment | |
| First generation | 3,855 | Aerial - fixed wing | 145,068 |
| Second generation | 36,988 | helicopter | 35,896 |
| B. Corn earworm | 6,458 | Ground | 158,940 |
| | | Adulticide (mist blower) | 27,847 |
| 2. Peas | | Other towns, villages, resorst, etc. | |
| A. Pea aphid | 39,627 | Ground | 15,000 |

Insect Control by Aircraft

| | <u>Acres</u> | | <u>Acres</u> |
|---------------------------|--------------|---------------------|--------------|
| Cankerworms | 604 | Forest insects | 78,946 |
| Mosquitoes | | European corn borer | 49,103 |
| (M.M.C.D. not included) | 44,069 | Cutworms | 240 |
| Pea aphid | 34,184 | Legume insects | 399 |
| Armyworms | 2,012 | Beet webworm | 71 |
| Grasshoppers | 3,617 | Greenbug | 98 |
| Potato insects & diseases | 18,532 | White grubs | 20 |
| Corn leaf aphid | 2,985 | Wild rice insects | 73 |
| Leafhoppers | 300 | Miscellaneous | 3,257 |
| Diamondback moth | 2,000 | | |

Total insect control by aircraft 1962: 240,510 acres

* Compiled by Insect Survey Section, Division of Plant Industry, Minnesota Department of Agriculture.

INSECTS COLLECTED FROM TEXAS STORED GRAINS
DURING PERIOD AUGUST 1, 1962-JUNE 1, 1963*

This survey of stored-grain insects was conducted as a part of a special research program designed to determine the distribution and host range of some of the more important storage pests in Texas. The species are listed by crop and by county. Approximately 28 species were collected from about 40 counties in samples of milo, Hegari, vetch, field peas, oats, clover, wheat, barley, corn, rice and ground mixed feed. For convenience, a list of common names appears at the end of the tabulation.

Milo

Guadalupe County

Tribolium castaneum
Cryptolestes ferrugineus

Calhoun County (continued)

Tribolium confusum
Cryptolestes pusillus

Reagan County

Sitophilus oryzae
Tribolium castaneum
Cryptolestes ferrugineus
Rhyzopertha dominica
Oryzaephilus surinamensis
Tribolium confusum

Tarrant County

Tribolium castaneum
Rhyzopertha dominica
Tribolium confusum
Latheticus oryzae

Deaf Smith County

Cryptolestes ferrugineus

Parmer County

Sitophilus oryzae
Tribolium castaneum
Cryptolestes ferrugineus
Sitophilus granarius

Mason County

Cryptolestes ferrugineus
Oryzaephilus surinamensis
Cryptolestes pusillus

Tom Green County

Sitophilus oryzae
Cryptolestes ferrugineus
Rhyzopertha dominica
Oryzaephilus surinamensis
Latheticus oryzae

Goliad County

Tribolium castaneum
Cryptolestes ferrugineus

Childress County

Sitophilus oryzae
Rhyzopertha dominica
Cryptolestes ferrugineus
Tenebroides mauritanicus

Milam County

Cryptolestes pusillus
Prostephanus truncatus
Oryzaephilus surinamensis
Carpophilus dimidiatus

Calhoun County

Tribolium castaneum
Rhyzopertha dominica

Jim Wells County

Sitophilus oryzae
Lasioderma serricorne
Cryptolestes ferrugineus

*Data obtained by Mr. E. O. Morrison, Graduate Research Assistant, Entomology Department, Texas Agricultural and Mechanical University

Jim Wells County (continued)

Rhyzopertha dominica
Tenebroides mauritanicus

Martin County

Rhyzopertha dominica
Oryzaephilus surinamensis

Crockett County

Tribolium castaneum
Rhyzopertha dominica
Sitophilus oryzae

Motley County

Sitophilus oryzae
Tribolium castaneum
Cryptolestes ferrugineus
Tenebroides mauritanicus
Carpophilus dimidiatus

Wilson County

Tribolium castaneum
Cryptolestes ferrugineus
Tribolium confusum
Sitotroga cerealella

Nueces County

Sitophilus oryzae
Cryptolestes pusillus
Cryptolestes ferrugineus
Oryzaephilus surinamensis
Stegobium paniceum
Tribolium castaneum
Rhyzopertha dominica
Plodia interpunctella

Howard County

Sitophilus oryzae
Tribolium confusum
Cryptolestes ferrugineus
Oryzaephilus surinamensis
Rhyzopertha dominica
Tribolium castaneum

Grimes County

Carpophilus dimidiatus
Tribolium confusum
Cryptolestes ferrugineus
Sitophilus oryzae
Rhyzopertha dominica
Tribolium castaneum
Attagenus spp.

Washington County

Oryzaephilus surinamensis
Carpophilus dimidiatus
Rhyzopertha dominica
Tribolium castaneum
Sitophilus oryzae

Walker County

Tenebroides mauritanicus
Rhyzopertha dominica
Cryptolestes ferrugineus
Tribolium castaneum
Oryzaephilus surinamensis

Brazos County

Oryzaephilus surinamensis
Cryptolestes ferrugineus
Sitotroga cerealella
Plodia interpunctella
Rhyzopertha dominica
Attagenus piceus
Tribolium confusum
Tribolium castaneum

Hill County

Cryptolestes ferrugineus
Rhyzopertha dominica
Latheticus oryzae
Stegobium paniceum

Hegari

Victoria County

Oryzaephilus surinamensis
Tribolium castaneum
Cryptolestes ferrugineus
Tribolium confusum
Plodia interpunctella
Rhyzopertha dominica

Brazos County

Sitophilus oryzae

Vetch

Lamar County

Bruchus rufimanus
Bruchus pisorum

Peas

A. Singletary Peas

Lamar County

Bruchus rufimanus

Burleson County

Callosobruchus maculatus

B. Speckled Peas

Houston County

Callosobruchus maculatus

Oats

Lamar County

Bruchus rufimanus

Tarrant County

Sitotroga cerealella
Psocidae
Rhyzopertha dominica

Cooke County

Cryptolestes ferrugineus
Oryzaephilus surinamensis
Dermestes spp.
Rhyzopertha dominica
Cryptolestes pusillus
Latheticus oryzae

Rockwall County

Sitotroga cerealella
Sitophilus oryzae
Tribolium castaneum

Childress County

Cryptolestes ferrugineus
Tribolium castaneum
Tenebroides mauritanicus

Grimes County

Tribolium castaneum
Tribolium confusum
Rhyzopertha dominica
Cryptolestes ferrugineus
Tenebrio obscurus

Washington County

Sitophilus oryzae
Cryptolestes pusillus
Oryzaeophilus surinamensis
Tribolium confusum
Tribolium castaneum
Carpophilus dimidiatus

Brazos County

Oryzaeophilus surinamensis

Clover

Lamar County

Bruchus rufimanus

Wheat

Lamar County

Tribolium castaneum

Knox County

Tenebroides mauritanicus
Oryzaeophilus surinamensis
Sitophilus oryzae
Rhyzopertha dominica

Cooke County

Tenebroides mauritanicus
Oryzaeophilus surinamensis

Rockwall County

Sitophilus oryzae
Rhyzopertha dominica
Cryptolestes ferrugineus

Foard County

Sitophilus oryzae

Barley

Lamar County

Mites

Rockwall County

Rhyzopertha dominica
Oryzaeophilus surinamensis
Tenebroides mauritanicus
Sitophilus oryzae
Sitotroga cerealella
Tribolium castaneum
Plodia interpunctella

Cooke County

Tenebroides mauritanicus
Rhyzopertha dominica
Oryzaeophilus surinamensis
Tribolium confusum

Wilbarger County

Rhyzopertha dominica
Sitophilus oryzae
Cathartus quadricollis

Corn

Lee County

Sitophilus oryzae
Tenebroides mauritanicus
Tribolium confusum
Tribolium castaneum
Prostephanus truncatus
Rhyzopertha dominica
Cryptolestes ferrugineus

Guadalupe County

Tenebroides mauritanicus
Tribolium castaneum
Prostephanus truncatus
Rhyzopertha dominica
Cathartus quadricollis

Cooke County

Sitotroga cerealella

Polk County

Tenebroides mauritanicus
Tribolium castaneum
Oryzaephilus surinamensis
Carpophilus dimidiatus
Cathartus quadricollis

Hill County

Cryptolestes ferrugineus
Plodia interpunctella
Oryzaephilus surinamensis

Wharton County

Tenebroides mauritanicus
Tribolium castaneum
Plodia interpunctella

Robertson County

Cathartus quadricollis

Grimes County

Latheticus oryzae
Attagenus spp.
Tribolium castaneum
Tenebroides mauritanicus
Rhyzopertha dominica
Tribolium confusum
Cryptolestes ferrugineus

Milam County

Sitophilus oryzae
Prostephanus truncatus
Tribolium castaneum
Latheticus oryzae
Cryptolestes ferrugineus
Ephestia spp.

Washington County

Prostephanus truncatus
Tribolium castaneum
Tribolium confusum
Cryptolestes ferrugineus

Burleson County

Tenebrio obscurus
Prostephanus truncatus
Tribolium castaneum

Houston County

Sitophilus oryzae
Tribolium castaneum

Walker County

Rhyzopertha dominica
Tenebroides mauritanicus
Cryptolestes ferrugineus
Tribolium confusum

Polk County

Tenebroides mauritanicus

San Jacinto County

Sitophilus zea-mais
Carpophilus dimidiatus
Typhaea stercorea

Brazos County

Plodia interpunctella
Sitotroga cerealella

Rice

Calhoun County

Rhyzopertha dominica
Tribolium confusum

Chambers County

Tribolium confusum
Corcyra cephalonica

Ground Mixed Feed

Grimes County

Alphitobius diaperinus
Cryptolestes ferrugineus
Tribolium castaneum
Carpophilus dimidiatus
Tenebroides mauritanicus
Tenebrio obscurus

Walker County

Tribolium castaneum

San Jacinto County

Tenebroides mauritanicus
Rhyzopertha dominica
Tribolium castaneum

Trinity County

Tenebrio obscurus
Plodia interpunctella
Attagenus spp.
Ptinus villiger

Brazos County

Sitophilus oryzae

Washington County

Sitophilus oryzae
Tribolium castaneum
Rhyzopertha dominica

Burleson County

Tenebroides mauritanicus
Tribolium castaneum
Tribolium confusum

Scientific and Common Names of Insects Collected from Texas Stored Grains

- Alphitobius diaperinus (lesser mealworm)
Attagenus spp. (dermestid beetles)
Attagenus piceus (black carpet beetle)
Bruchus pisorum (pea weevil)
Bruchus rufimanus (broadbean weevil)
Callosobruchus maculatus (cowpea weevil)
Carpophilus dimidiatus (corn sap beetle)
Cathartus quadricollis (square-necked grain beetle)
Corcyra cephalonica (rice moth)

Cryptolestes ferrugineus (rusty grain beetle)
Cryptolestes pusillus (flat grain beetle)
Dermestes spp. (dermestid beetles)
Ephestia spp. (phycitid moths)
Lasioderma serricorne (cigarette beetle)
Latheticus oryzae (a darkling beetle)
Oryzaephilus surinamensis (saw-toothed grain beetle)
Plodia interpunctella (Indian-meal moth)
Prostephanus truncatus (a seed beetle)
Psocidae (psocids)
Ptinus villiger (hairy spider beetle)
Rhyzopertha dominica (lesser grain beetle)
Sitophilus granarius (granary weevil)
Sitophilus oryzae (rice weevil)
Sitophilus zea-mais (a weevil)
Sitotroga cerealella (Angoumois grain moth)
Stegobium paniceum (drugstore beetle)
Tenebrio obscurus (dark mealworm)
Tenebroides mauritanicus (cadelle)
Tribolium castaneum (red flour beetle)
Tribolium confusum (confused flour beetle)
Typhaea stercorea (a hairy fungus beetle)

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL DIVISION
REPORT

Issued by
PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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

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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

FALL ARMYWORM larval activity increased on alfalfa in Graham County, Arizona, and populations continue damaging to pastures and small grains in areas of Texas; also damaging winter wheat in southwest Kansas. ALFALFA CATERPILLAR populations heavy in alfalfa in areas of California, Arizona and Oklahoma. (p. 1237). PEA APHID serious on alfalfa in areas of Ohio and increased noticeably in areas of Wisconsin. SPOTTED ALFALFA APHID moderate to heavy on seedling alfalfa in Payne and Garfield Counties, Oklahoma, but reproduction occurring and serious damage could result; counts as high as 19 per single leaflet on seedling alfalfa in central Kansas; increased noticeably in Wisconsin and now more widely distributed. (p. 1238).

TARNISHED PLANT BUG populations light to heavy (6-15 per 10 sweeps) on alfalfa in north central and northwest Oklahoma, and ALFALFA WEEVIL adults averaged 33 per 100 sweeps on same crop in areas of Wyoming. GRASSHOPPER adult surveys in Idaho indicate 945,000 acres of rangeland and 88,600 acres of cropland presently infested, despite control programs. (p. 1239). HESSIAN FLY infestation ranged 0-30 percent on early planted wheat in north central Kansas. (p. 1240).

TEXAS CITRUS MITE on Florida citrus higher than in September of prior years and increasing; scattered, heavy infestations may be expected. PURPLE SCALE, GLOVER SCALE and CHAFF SCALE more widespread and infestations heavier than in recent years, and YELLOW SCALE more abundant than in any prior year on record, with further increase expected. (p. 1241).

BEEF LEAFHOPPER apparently will be present in large numbers in Hagerman-Glenns Ferry area of Idaho during the fall; host plants abundant and in vigorous condition. (p. 1242). Single PINK BOLLWORM male moth caught in sex trap October 4 in stub cotton in Maricopa County, Arizona; larval infestation heavy in many cotton fields surveyed in Graham County. (p. 1243). VARIABLE OAK LEAF CATERPILLAR locally severe in areas of Kansas, with severe defoliation noted. (p. 1244).

DETECTION

A FLEAHOPPER (*Spanogonicus albofasciatus*) found for first time in Arkansas. (p. 1243). New county records include EUROPEAN CORN BORER in Warren County, Georgia (p. 1237); PINK BOLLWORM in Chicot County, Arkansas (p. 1243); ELM LEAF BEETLE in Riley, Linn and Miami Counties, Kansas (p. 1245); and A WEEVIL (*Trachyphloeus bifoveolatus*) in Skamania County, Washington (p. 1248).

CORRECTIONS

See page 1249.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1247). Reporting period September 29 - October 5 reflects highest incidence found during any 7-day period this calendar year; majority of cases in Texas being found in and near the overwintering area of a relatively mild winter.

1962 Wisconsin Insect Loss Estimates. (pp. 1253-1254).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Grain Sorghum, Wheat and Cotton in Texas in 1962. (pp. 1255-1257).

Reports in this issue are for week ending October 11, unless otherwise indicated.

WEATHER OF THE WEEK ENDING OCTOBER 14

Clear skies, abundant sunshine, warm days, cool nights, low humidity, and little or no rain described the weather over most of the Nation for week ending October 14. Agriculturalists agreed that it was ideal weather for maturing of late crops and harvest operations, but fine weather created problems in some areas. Some fields became too dry for fall plowing and, especially in New York and New England, the fields and woods became so dry that the fire hazard was serious. In fact, numerous forest fires occurred in those areas. Afternoon temperatures on Monday reached or exceeded 90° over the sandy Southwest, from Texas to Illinois, at Detroit, Michigan, and over southern New England. Numerous stations in those areas registered higher maximum temperatures than had previously occurred in October. On Tuesday, the hot southwesterly flow gave way to an invasion of cooler air which advanced over the northern half of the country. The temperature at Detroit rose to 68° on Tuesday. It had reached 92° the previous afternoon. Boston registered 90° on Monday, 72° on Tuesday. On Wednesday morning, temperatures dropped into the 20's in some spots in New England, and at a few locations in New York, Pennsylvania, and West Virginia. The cooling was especially noticeable in New England. A few stations set new high temperature records on October 7 and new low temperature records 3 days later. Chester, Massachusetts, registered 94° Monday afternoon and 23° on Thursday. Temperatures over the midsection of the Nation continued hot. Fort Smith and Little Rock, Arkansas, registered 96° on Thursday. This equaled Ft. Smith's previous record and set a new record at Little Rock. The temperature at Kansas City, Missouri, climbed to 97° on Thursday. It was the fourth occurrence of 90° temperatures in the first 10 days of October. The long time average is only one 90° maximum in October at Kansas City.

About midweek, a low pressure area developed in the middle Plains. It moved quickly to the Lake Region producing only patchy cloudiness and a few light showers of little importance. Under bright skies, hot afternoon temperatures continued over the Nation's middle. Maximum temperature readings of long standing were replaced by higher readings. A deep low off the upper Pacific coast brought cloudiness and some general rains to northern and central coastal areas. Red Bluff, California, received over an inch of rain and Tatoosh Island, Washington, received more than 3 inches. Light showers dotted southern Florida. High afternoon temperatures returned daily over the southern Plains, especially over eastern Texas, eastern Oklahoma, Arkansas, Louisiana, and Mississippi. In contrast, snow began falling Saturday afternoon at higher elevations in Nevada, Utah, and California. Snow accumulated to 5 inches at Austin, Nevada. On Sunday, temperatures dropped to below freezing above 6,000 feet in northern, central, and eastern sections of Arizona and above 7,000 feet in the southeastern mountains of Arizona. A few thunderstorms developed over southern Florida and a funnel cloud was seen near Key West. Some hail fell in northeastern Georgia. Precipitation was extremely light during the week. Wide areas from southern California to the southern Atlantic coast and from eastern Nebraska to the Gulf of Mexico received no rain. Another area of no precipitation or only light sprinkles extended from northern Minnesota eastward to the Atlantic. A third dry area included eastern Montana and nearby portions of Wyoming and the Dakotas. A few locations received more than an inch. In general, they were the northern Pacific coast, the southeastern coast of Florida, and the extreme northeastern portion of Maine.

Temperatures averaged below normal over the interior valleys of California, on the western slope of the middle Appalachians, along the (continued on page 1250)

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (*Laphygma frugiperda*) - ARIZONA - Increase of larval activity found in Graham County alfalfa; 40-60 per 100 sweeps. (Ariz. Coop. Sur.). TEXAS - Light to heavy populations continue to damage pastures and small grains in various parts of State. Several fields of wheat completely destroyed in Hartley County. (Tex. Coop. Rpt.). KANSAS - Damaging winter wheat in Ford and Gray Counties, southwest; counts of 3-5 larvae per linear foot of row reported. Some application of controls anticipated. (DePew, Sept. 23). ALABAMA - Medium infestation on soybeans in Baldwin County and grasses in Lee, Macon and Russell Counties. Numerous adults in flight in Baldwin County. (Fairley, Smallwood). GEORGIA - Moderate infestation on foliage of soybeans in Grady County. (Barrett).

CORN EARWORM (*Heliothis zea*) - CALIFORNIA - Larvae medium on milo in Visalia, Tulare County. (Cal. Coop. Rpt.). ARIZONA - Present in sorghum fields in Graham, Yuma and Maricopa Counties; averaged 60 per 100 sweeps. (Ariz. Coop. Sur.). COLORADO - Causing some feeding damage to sorghum heads in Baca County. (Hantsbarger). MICHIGAN - Larval injury to field corn in Washtenaw, Livingston, Jackson and Ingham Counties very light during 1963 season. Only 3 ears, from 2 Livingston County fields, showed slight injury of a 520-ear sample taken from 19 fields. Second and third larval stages found October 9. (Dowdy). DELAWARE - Adult collections in blacklight trap in Sussex County greatly reduced; averaged 3 per night October 2-8. (Burbutis). GEORGIA - Light infestation in heads of grain sorghum in Barrow County. (Johnson). ALABAMA - Extremely light on late sorghum in Russell County field. (McQueen).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NORTH DAKOTA - Fall survey conducted in southeast area; included Cass, Traill, Richland, Ransom and Sargent Counties. Averages for area surveyed were as follows: Present plants infested 95.31 (ranged 72-100); borers per infested plant 3.99 (ranged 0-14); borers per 100 plants 391.49 (ranged 0-1,400). Comparable figures for 1962, respectively, were as follows: 79 (range 40-100); 3.74 (range 0-17); and 285 (range 0-1,700). (N. D. Ins. Sur.). MINNESOTA - Stalk breakage of corn in west central district reported; 30 percent of stalks broken above ear, 9 percent below ear and less than 1 percent of ears on ground; latter figure expected to increase before corn harvest because of high larval numbers found in shank. (Minn. Ins. Rpt., Oct. 5). MICHIGAN - Survey of Washtenaw, Livingston, Ingham and Jackson Counties October 8-9 revealed a relatively low level of larval injury to field corn in south central part of Lower Peninsula for 1963. In 19 fields checked, percent of plants infested ranged 0-52 percent (averaged 26 percent). Number of borers averaged about 1.2 per infested plant. Empty holes and holes containing fifth-stage larvae found most frequently. Holes with third and fourth-stage larvae found occasionally, but only one second-stage larva found. (Dowdy). GEORGIA - Moderate infestation in corn in Warren County; a new county record. (Brightwell).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - MISSOURI - Survey in southeast complete; percent girdled corn stalks by county 20.2 in Butler, 31.6 in Dunklin, 2 in Mississippi, 40.6 in New Madrid, 52.4 in Pemiscot, 2.2 in Scott and 34.6 in Stoddard. No economic infestation found in Wayne County (reported as new county in CEIR 13(41):1206). (Munson, Thomas, Wood). KANSAS - Infestation of corn plants in a research plot in Stafford County, south central area, was 21 percent. (Painter).

SUGARCANE BORER (*Diatraea saccharalis*) - TEXAS - Heavy local infestations reported on grain sorghum in Brazoria County. (Teetes).

ALFALFA CATERPILLAR (*Colias eurytheme*) - CALIFORNIA - Heavy populations on alfalfa in Laton, Fresno County. (Cal. Coop. Rpt.). ARIZONA - Larvae continue high on alfalfa in Yuma, Graham and Maricopa Counties; 200-300 per 100 sweeps. (Ariz. Coop. Sur.). OKLAHOMA - Heavy populations reported on alfalfa in Bryan County, south central area; none observed in north central and northwest area fields. (Okla. Coop. Sur.). OHIO - Larvae 5 per 50 sweeps near Cincinnati, Hamilton County; many adults flying throughout alfalfafield. (Lyon).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Caused considerable damage to late cutting alfalfa in northern Elbert County; losses of up to one-third of hay crop estimated by one rancher. (Hantsbarger).

SORGHUM WEBWORM (Celama sorghiella) - ALABAMA - Light on late grain sorghum in Russell County field. (McQueen).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Heavy numbers continue to appear on soybeans and cotton in Baldwin County. (Fairley, Smallwood).

SUNFLOWER MOTH (Homoeosoma electellum) - CALIFORNIA - Medium populations in seeds in sunflower heads in Isleton, Sacramento County. (Cal. Coop. Rpt.).

CUTWORMS - TEXAS - Medium to heavy infestations on wheat in Hartley County. (Dysart).

PEA APHID (Acyrtosiphon pisum) - WASHINGTON - Apteræ rather numerous on alfalfa stubble after third cutting in Walla Walla, Walla Walla County. (Landis).

NEVADA - Only trace numbers found in alfalfa in Lovelock area, Pershing County. (Lauderdale). COLORADO - Light on alfalfa on Western Slope; ranged 50-100 per 100 sweeps. (Bulla). NEBRASKA - Ranged 15-80 per 10 sweeps in central and eastern areas; 100 per 10 sweeps present in Howard County. (Calkins).

WISCONSIN - Increased noticeably; ranged 30-1,000 per sweep in Green, Sauk and western Dane Counties in alfalfa. Predation and parasitism light in most fields, with few lacewing larvae, lady beetle adults and larvae, and *Nabis ferus* being only predators of consequence. (Wis. Ins. Sur.). OHIO - Serious damage occurring on alfalfa in Wayne County, northeast; ranged 200-500 per plant. (Treece).

Heavy in most southwest, central and west central area alfalfa. (Lyon). Seriously infesting alfalfa in Muskingum County, east central area. (Knotts). Serious on alfalfa in Franklin County, central area. (Holdsworth). Infesting alfalfa in Knox County, central area. (Dean). DELAWARE - Common to fairly abundant on alfalfa in several areas of State. (McCreary, Burbutis).

SPOTTED ALFALFA APHID (Therioaphis maculata) - IDAHO - Began appearing generally in many alfalfa fields throughout Elmore County during September. Some fields now described as heavily infested. Unseasonably warm weather this fall in

southern part of State possibly reason for rapid buildup. (Edwards). NEVADA - None found in Pershing County alfalfa fields. (Lauderdale). COLORADO - Light on alfalfa on Western Slope; ranged 10-50 per 100 sweeps. (Bulla). OKLAHOMA -

Moderate to heavy infestation noted on seedling alfalfa in Payne and Garfield Counties; ranged 25-75 per linear foot of row, but reproduction of aphids occurring and serious damage could result. Populations on established stands ranged 25-40 per 10 sweeps in Major County, 175-500 per 10 sweeps in Perkins area of Payne County and averaged 1,500 per 10 sweeps in Pauls Valley area. (Okla. Coop. Sur.). KANSAS - Counts on seedling alfalfa in north central area

ranged from less than one to 19 per single leaflet. Counts on established alfalfa in same area ranged from less than one to 30 per sweep. Damage noted only in heavier infested seedling fields. (Peters). NEBRASKA - Counts per 10 sweeps averaged 8 in Butler County and 6 in Platte County. (Bergman). Sexual forms first recovered this year in Greeley County. (Calkins).

WISCONSIN - Increased noticeably; now more widely distributed. In alfalfa field near Broadhead where populations ranged 5-10 per sweep September 3, numbers now 300 per sweep. Individual aphids present on upper leaves; some honeydew evident. Plants wilting and showing considerable leaf drop. Ranged 2-12 per sweep in Spring Green and Mazomanie areas. Populations in these fields first week of September very light (1 per 10 sweeps). Specimens can be found in few alfalfa fields in northern Green County where soil types heavier and stands denser. (Wis. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - MICHIGAN - Populations generally low in south central area corn fields. Cast skins and other evidence indicates general moderate to heavy infestations earlier. (Dowdy). WISCONSIN - Averaged 1 nymph per 10 sweeps in grain fields at Spring Green; present in grain in southern Dane

County. (Wis. Ins. Sur.). NORTH DAKOTA - Populations low (trace to 100 per plant), but still active on late corn in southeast. Lady beetles present and active. (N. D. Ins. Sur.). OKLAHOMA - First activity of season on small grains noted in McClain County; 1.5 per linear foot of row. (Okla. Coop. Sur.). ALABAMA - Light on late sorghum in Russell County field, but appears to be building up. (McQueen).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - CALIFORNIA - Medium on corn in Visalia, Tulare County. (Cal. Coop. Rpt.). WASHINGTON - Counts 0-30 per plant on fall-planted wheat in Toppenish, Yakima County. Also attacking late oats in milk stage. Twenty-acre infested wheatfield does not look thrifty. (Landis).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WISCONSIN - Nymphs and alates ranged 10-15 per 10 sweeps in field of grain in southern Dane County; averaged 0.5 per sweep in Spring Green area. (Wis. Ins. Sur.).

LYGUS BUGS (Lygus spp.) - NEVADA - Populations very low in all alfalfa checked in Lovelock area, Pershing County. (Lauderdale). COLORADO - Nymphs and adults up to 200-300 per 100 sweeps in Garfield County. (Bulla). OKLAHOMA - Light to heavy populations of Lygus lineolaris noted on alfalfa in north central and northwest areas; 6-15 per 10 sweeps. (Okla. Coop. Sur.).

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Heavy on milo plantings in Isleton, Sacramento County. (Cal. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Populations remain high in alfalfa in Graham and Maricopa Counties; averaged 3,000 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - WYOMING - Adults averaged 33 per 100 sweeps in alfalfa in Fremont, Hot Springs, Washakie and Big Horn Counties. (Marks).

CLOVER ROOT CURCULIO (Sitona hispidula) - WISCONSIN - Adults common, as high as 4 per sweep, in most southern area alfalfa fields. (Wis. Ins. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - D. virgifera and D. undecimpunctata howardi adults present on alfalfa, sorghum and weedy fields in central and eastern areas. (Bergman).

WHITE-FRINGED BEETLES (Graphognathus spp.) - GEORGIA - Light infestation feeding on weeds in city of Bainbridge, Decatur County. (Chesire). FLORIDA - G. peregrinus found lightly infesting native clover at Youngstown, Bay County. (Tipton, Breidenbach; Sept. 24).

A MORDELLID BEETLE - NORTH DAKOTA - Larvae working in sunflower stalks in southeast. Some stalk breakage appears to be due to larval feeding. (N. D. Ins. Sur.).

GRASSHOPPERS - IDAHO - Grasshopper populations in desert areas decreasing as egg laying tapers off. In many areas, populations now 1-5 per square yard where recently ranged 15-20 per square yard. Control accomplished during summer of 1963 on total of 277,626 acres. Despite control programs, adult surveys indicate 945,000 acres of rangeland and 88,600 acres of cropland presently infested. (Evans). OKLAHOMA - Very light, scattered damage noted along field margins of small grain fields in Payne, Logan, Kingfisher, Blaine, Major, Garfield and Noble Counties. Light damage to seedling alfalfa noted in Payne County and moderate damage to alfalfa reported from Blaine County. (Okla. Coop. Sur.). WISCONSIN - Primarily Melanoplus femurrubrum and secondarily M. differentialis increased in some alfalfa fields and decreased in other fields. Egg development continues; 50-80 percent of females contained eggs in southern counties. Egg pods in alfalfa fields difficult to find. Diseased grasshoppers averaged about one per yard in one Green County alfalfafield. (Wis. Ins. Sur.). OHIO - Melanoplus differentialis populations decreasing rapidly in southwest; nematode parasitism prevalent near Washington Court House, Fayette County. (Lyon).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Infestation of early planted wheat in north central area ranges 0-30 percent. Larvae range 1-7 per plant; most less than one-half grown. (Peters). OHIO - Late instars observed on volunteer wheat near Hamilton, Butler County; no larvae observed in regular drilled autumn wheat. (Lyon).

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Heavy on milo in Visalia, Tulare County. (Cal. Coop. Rpt.). TEXAS - Severe localized damage reported on second-growth grain sorghum in Brazoria County. (Teetes).

A LEAF MINER (Liriomyza sp.) - CALIFORNIA - Medium in alfalfa leaves in Visalia, Tulare County. (Cal. Coop. Rpt.).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Survey on October 10 revealed no adults on Eley crab apple on Michigan State University campus. This is first week since September 11, when first noticed, that adults of strain attacking this fruit not readily observed. Larvae numerous in fruits on trees and on ground. (Dowdy). OHIO - Infestations noted in some commercial apple orchards more than usual this year. Approximately 50 percent of apples, Wealthy and Northern Spy varieties, injured in 5-acre commercial block in Wayne County, north-east area. However, some apple orchards having potential for injury did not receive economic infestations. (Forsythe).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Abundant on fruit trees on Western Slope orchards. Major portion of population now in overwintering form. (Bulla). KANSAS - Heavy on apples in Riley County, northeast; moving into crevices of bark on trunks to hibernate. Some apple drop occurred. (Eshbaugh, Thompson; Sept. 27).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Small numbers of eggs observed on treated apple trees (Red Delicious) near Dayton, Montgomery County; ranged 20-25 eggs per twig. (Meyer).

CODLING MOTH (Carpocapsa pomonella) - COLORADO - Injury to harvested peaches and apples ranging from 1 to 10 percent in Mesa and Montrose Counties; little injury noted on apples in Delta County. (Bulla).

PEAR-SLUG (Caliroa cerasi) - WASHINGTON - Larvae skeletonizing young pear trees near Royal Camp, Othello, Grant County. (Landis).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Alates returning to peach orchards in Mesa County from summer host plants; some nymphs of egg-laying forms present on leaves. (Bulla).

BLACK CHERRY APHID (Myzus cerasi) - COLORADO - Noted on sour cherry trees in Mesa County; some egg-laying forms present. (Bulla).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Larvae heavy in walnut husks in Redwood City, San Mateo County, and adults heavy in traps in Placerville, El Dorado County. (Cal. Coop. Rpt.). WASHINGTON - Infesting backyard walnuts at Pasco, Franklin County. (Hokenson, Telford). UTAH - Infesting large percentage of black walnuts at Providence, Cache County; most larvae left husks. (Hanson, Knowlton).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Numerous, large larvae in hickory nuts and pecans in Dallas and Lee Counties. (McGlohon et al.).

HICKORY HORNED DEVIL (Citheronia regalis) - GEORGIA - Light numbers feeding on foliage of pecans in Bibb County. (Bumgardner, Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - FLORIDA - Infesting stem of Japanese persimmon at Bonita Springs, Lee County. (Walsh, Shirah; Oct. 2).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Female trapped in McPhail trap in Nogales, Santa Cruz County, on October 3; this is sixth fly trapped in State this year. Larval inspections made in fall fruit continue negative. (Ariz. Coop. Sur.; PPC).

BLACK CITRUS APHID (Toxoptera aurantii) - CALIFORNIA - Nymphs and adults heavy on citrus trees in Woodland, Yolo County; infestations slightly out of season. (Cal. Coop. Rpt.).

COCCIDS - CALIFORNIA - Coccus hesperidum and Icerya purchasi medium on lemon in Merced, Merced County. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Medium populations skeletonizing citrus leaves in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Moderate on leaves of orange at Groveland, Lake County, in October (Henderson, Brown, Fatic); and at Fort Lonesome, Hillsborough County (Custead, Oct. 7); light on leaves of Citrus sp. at Brooksville, Hernando County (Sellers, Sept. 16).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Medium on citrus nursery stock in Woodland, Yolo County. (Cal. Coop. Rpt.).

A MITE (Agistemus fleschneri) - FLORIDA - Found infesting lemon at Apopka, Orange County. (Muscgrove, Sept. 27).

Citrus Insect Situation in Florida - End of September - On leaves, CITRUS RUST MITE (Phyllocoptiruta oleivora) infested 61 percent of groves (norm 59 percent); 43 percent economic (norm 37 percent). On fruit, CITRUS RUST MITE infested 68 percent of groves (norm 70); 44 percent economic (norm 46 percent). Population dropped into moderate range and now average for time of year. Upward trend will start in mid-October. Highest districts Gainesville, Brooksville, Bartow and west coast. CITRUS RED MITE (Panonychus citri) infested 43 percent of groves (norm 40 percent); 16 percent economic (norm 19 percent). Population slightly below average level and will remain in low range. Highest districts west coast and Brooksville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 33 percent of groves (norm 15 percent); 19 percent economic (norm 4 percent). Population higher than in September of prior years and increasing. Scattered, heavy infestations may be expected. Highest districts Gainesville, west coast and ridge. PURPLE SCALE (Lepidosaphes beckii) infested 68 percent of groves (norm 56 percent); 14 percent economic (norm 2 percent). GLOVER SCALE (L. gloverii) infested 61 percent of groves (norm 25 percent); 21 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 66 percent of groves (norm 39 percent); 14 percent economic (norm 1 percent). Latter 3 species are more widespread and infestations heavier than in recent years. Although scale populations are increasing, proportion of parasitized scales also increasing. YELLOW SCALE (Aonidiella citrina) infested 34 percent of groves (norm 9 percent); 6 percent economic (norm 1 percent). A. citrina is more abundant than in any prior year on record and further increase is expected. BLACK SCALE (Saissetia oleae) infested 49 percent of groves (norm 31 percent); 21 percent economic (norm 10 percent). Although population above normal for September, decrease to low level will occur in late October. Highest districts ridge and Indian River. WHITEFLY populations increased far above September normal. Rapid decrease expected in late October. GRASSHOPPERS continue above normal abundance. STINK BUGS are near average and less abundant than in 1962. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

Quarterly Citrus Insect and Mite Outlook in Florida - October through December
This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau's 30-day outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect Situation in Florida" usually given twice each month.

Effects of the December 1962 freeze on tree condition and on pest populations are diminishing but still evident. MITES were more abundant in cold-damaged groves July through September. SCALES, MEALYBUGS and WHITEFLIES were less numerous in cold-damaged groves. Much of the increase reported for scales in State due to buildup from abnormally low post-freeze levels to average pre-freeze levels in these cold-damaged groves.

CITRUS RUST MITE will continue at high level in cold-injured groves. Trend will be upward in most groves through November and will be more noticeable on fruit than on leaves. TEXAS CITRUS MITE will remain above average and will gradually increase until mid-December. Moderate to heavy infestations expected in 25 percent of groves; majority will be in cold-damaged groves. CITRUS RED MITE populations will be near average. Upward trend in late October will cause scattered infestations, mostly in cold-damaged groves. PURPLE SCALE, GLOVER SCALE, CHAFF SCALE and YELLOW SCALE will continue at above average level and will gradually increase. Although majority of groves will have light infestations, about 20 percent will develop heavy infestations of one or more of these scale species. These are expected to be spotty infestations in the inner canopy of trees. BLACK SCALE will remain above average with a decrease to low level expected in November. Unaspis citri and Pinnaspis strachani will increase in scattered groves now infested. GRASSHOPPERS and PLANT BUGS will be occasional problems. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues damaging in Yuma, Pima and Maricopa Counties; averaged 80 per 100 sweeps in lettuce fields. (Ariz. Coop. Sur.). GEORGIA - Light to moderate on commercial cabbage in Gwinnett County. (Woodliff). FLORIDA - Infesting 30 percent of 200 cabbage plants at Sanford, Seminole County. (Desin).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Light on lettuce in Yuma County but appears to be increasing in Maricopa County. (Ariz. Coop. Sur.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - This species and beet armyworm (Spodoptera exigua) medium, spotty on green onions in Soledad, Monterey County. (Cal. Coop. Rpt.).

GARDEN WEBWORM (Loxostege similalis) - ARIZONA - Moderate infestations found on lettuce in Maricopa County; averaged 40 larvae per 100 sweeps. (Ariz. Coop. Sur.). ALABAMA - Heavy populations ruined most older turnips in some isolated home gardens in Lee, Russell and Macon Counties. (McQueen).

BEET LEAFHOPPER (Circulifer tenellus) - IDAHO - Populations extremely light during summer in southern part of State, but fall buildups large on Russian-thistle and other host plants in Hagerman-Glenns Ferry area. Host plants abundant and in vigorous condition. Apparently large numbers of beet leafhoppers will be present in endemic area during fall. (Evans).

SQUASH BUG (Anasa tristis) - KANSAS - Heavy, 100 or more per plant, noted on squash in Riley County; infestation did not appear until late in season. (Hall, Thompson; Sept. 20).

MELON APHID (Aphis gossypii) - CALIFORNIA - Heavy populations on okra plantings in Verona, Sutter County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (*Myzus persicae*) - WASHINGTON - Averaged 3 apterae per leaf in one 5-acre field of spinach at College Place, Walla Walla County; both alatae and apterae present. (Landis).

LEAF MINER FLIES - FLORIDA - New growth of celery at Sanford, Seminole County, damaged by 7 percent infestation of *Liriomyza* sp. larvae. Old growth, which was 100 percent infested, dying and falling off. Crop 5 inches high and 300 plants sampled. (Desin). NEVADA - Light, spotted infestation of an undetermined species in sugar beet leaves (adults mostly emerged) noted in Lovelock area, Pershing County. (Lauderdale).

SPINACH LEAF MINER (*Pegomya hyoscyami*) - WASHINGTON - Spinach field borders lightly infested at College Place, Walla Walla County; more abundant than usual; eggs and larvae present. (Landis).

WIREWORMS - NORTH CAROLINA - Larvae collected from sweetpotato field in Johnston County; of 18 specimens collected one week ago, 17 *Conoderus vespertinus* and one *C. lividus*. Larvae observed feeding on sweetpotatoes left lying on top of ground and several found with heads still in sweetpotatoes. (Mount). GEORGIA - Light to moderate infestation of *C. vespertinus* in sweetpotatoes in Lee County (Glover, Barnes; Sept. 19); heavy infestation of undetermined wireworm in sweetpotatoes in Jasper County (Milner, Sept. 27).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - GEORGIA - Heavy on lima beans in Chatham County. (Vanderford, Oct. 3). ALABAMA - Adults and larvae heavy on southern peas and beans in home gardens in Macon, Lee and Barbour Counties; numerous egg masses noted. (McQueen).

A THRIPS (*Leucothrips piercei*) - CALIFORNIA - Medium populations on okra in Bard, Imperial County. (Cal. Coop. Rpt.).

SPIDER MITES - NEVADA - Medium infestation of undetermined species on sugar beets in Lovelock area, Pershing County. (Lauderdale). WASHINGTON - Unseasonably hot weather allowed rapid buildup of *Tetranychus telarius* on sugar beets at Othello, Grant County; field borders being treated. (Landis).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Infestations of migrating weevils developed above Caprock in following western counties: Briscoe, Floyd, Crosby, Dickens and Garza. (Newton).

A FLEAHOPPER (*Spanogonicus albofasciatus*) - ARKANSAS - Collected from cotton on September 28 in Jefferson County for a new State record. (Ark. Ins. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - TEXAS - Light to heavy infestations reported in Briscoe, Crosby, Dickens and Garza Counties. (Newton).

BOLLWORM (*Heliothis zea*) - ARIZONA - Larvae continue present in Graham, Yuma, Pinal and Maricopa Counties; very few controls being applied. (Ariz. Coop. Sur.). TEXAS - Heavy localized damage reported from Hall County. (Hoosier).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - One male moth caught in sex trap on October 4 located in stub cotton 2 miles west of Chandler Heights, Maricopa County; this is an eradication area. In Graham County, where eradication methods have not been conducted, larvae appearing in large numbers; many fields surveyed showed heavy degree of infestation; counts as high as 40-50 larvae per 100 bolls. (Ariz. Coop. Sur.; PPC). OKLAHOMA - Larvae continue to be found in gin trash; greatest number found in Tillman County (97 larvae in 88 bushels of trash) and in McIntosh County (89 larvae in 35 bushels of trash). None found in 50 bushels of trash examined in Harmon County and 24 bushels in Wagoner County.

Some larvae found in Beckham, Greer, Jackson, McCurtain, Muskogee, Nowata, Pittsburg and Wagoner Counties. (Okla. Coop. Sur.). ARKANSAS - Recovered from gin trash in Chicot County. This is a new county record. (Ark. Ins. Sur., PPC).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Remains numerous in all areas. With increase in defoliation of cotton, larvae moving in great numbers to other plants and crops. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - ARIZONA - Damaging early defoliated cotton in Yuma County. Large increases noted during past week. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Counts of 1-2 per tip noted on Scotch pine in Saline County, central area; pupae in buds. (Thompson, Oct. 4).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WISCONSIN - Absent in Point Beach area, Manitowoc County, where populations high during past years. (Wis. Ins. Sur.).

A PINE SHOOT MOTH (Rhyacionia pasadenana) - CALIFORNIA - Pupae heavy in buds of Monterey pines in Vallejo, Solano County. (Cal. Coop. Rpt.).

AN ENGRAVER BEETLE (Ips calligraphus) - GEORGIA - Killed 28 pine trees on 3 lots in suburban Macon, Bibb County. (Brightwell).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Infestations present on Colorado blue spruce in Licking County, central area. Averaged 4-5 per needle in many instances. (Walker, Oct. 3).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Continues to defoliate oaks throughout eastern half of State. (Okla. Coop. Sur.). KANSAS - Locally severe on oaks in Sedgwick (south central), McPherson and Saline (central) Counties. Severe defoliation noted. (Thompson, Charlton; Oct. 4, 5).

FALL CANKERWORM (Alsophila pometaria) - OKLAHOMA - Heavy on oak trees in Sequoyah (east central) and Garfield (northwest) Counties. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Continues active on variety of trees throughout State. (Okla. Coop. Sur.).

COTTONWOOD DAGGER MOTH (Acronicta lepusculina) - KANSAS - Locally severe on Lombardy poplar in Reno County, central. (Thompson, Sept. 30). Also reported from Cowley (southeast) and Riley (northeast) Counties. (Gates, Peters).

CATALPA SPHINX (Ceratonia catalpae) - KANSAS - Locally severe on catalpa in Riley County, northeast; larvae stripping leaves on occasional trees. (Rettenmeyer, Thompson).

SADDLED PROMINENT (Heterocampa guttivitta) - WISCONSIN - Caused light defoliation of hard maples on about 200-acre area of Door County. Larvae absent October 10. (Wis. Ins. Sur.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - KANSAS - Locally severe on American elms in Reno County. (Thompson, Sept. 30).

ELM LEAF BEETLE (Galerucella xanthomelaena) - WASHINGTON - Slightly more abundant on elms at Othello, Grant County, than for past 2 years. (Landis). UTAH - Defoliated many elms in Farmington-Layton area, Davis County, and in Roy-Ogden area, Weber County. (Knowlton). NEBRASKA - Heavy adult concentrations found in

old lumber piled out-of-doors in Nemaha County. (Bergman). KANSAS - Eggs and few larvae present on Siberian elms in Riley County (northeast) for a new county record. (Charlton, Oct. 1). Larvae and pupae present on same host in Linn and Miami Counties; also new county records. (Guldner, Oct. 4). Heavy on Siberian elms in Saline County, central area. Last brood nearly complete. Adults entering homes to hibernate. (Thompson, Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continues to damage elm and pecan trees at various locations throughout eastern part of State as far west as Oklahoma City and Ponca City. (Okla. Coop. Sur.).

TWIG PRUNER (Elaphidion villosum) - DELAWARE - Larvae abundant in oak twigs and causing heavy twig drop in one area of southeast Sussex County. (MacCreary).

BOXELDER BUG (Leptocoris trivittatus) - ALABAMA - Rather large numbers again feeding on silver maple in Calhoun County. (Mathews).

EUROPEAN ELM SCALE (Gossyparia spuria) - KANSAS - Severe on American elms in Saline County, central area. Nymphs migrated to bark of branches in preparation for overwintering. Some trees killed; dieback severe on others. (Thompson, Oct. 4).

LEAFHOPPERS - OKLAHOMA - Large numbers reported on elms in Oklahoma City and in McIntosh and Payne Counties. Also common in lawns throughout State. (Okla. Coop. Sur.).

WALKINGSTICK (Diapheromera femorata) - WISCONSIN - Single male observed in Door County October 10. (Wis. Ins. Sur.).

GALL WASPS - CALIFORNIA - Larvae of Andricus fullawayi, Andricus kingi, Antron clavula and Antron douglasii heavy in leaves of Quercus lobata (California white oak) in Visalia, Tulare County. Andricus confertus also heavy. Disholcaspis chrysolepidis infesting Quercus garryana (Oregon white oak) in Yreka, Siskiyou County. This is first record of this host being infested in State. (Cal. Coop. Rpt.).

SPIDER MITES - CALIFORNIA - Tetranychus willamettei infesting willows in Fair Oaks, Sacramento County. (Cal. Coop. Rpt.). UTAH - Tetranychus spp. discoloring mountain ash at Farmington and Kaysville, Davis County. Unspecified species discolored blue spruce, Pfitzer junipers, arborvitae and other evergreens in Davis County. (Knowlton, Stokes).

A JUNIPER TWIG MOTH (Periploca nigra) - CALIFORNIA - Populations heavy in juniper in Stockton, San Joaquin County. Species has been more spotty in occurrence this season than in 1962, when it caused considerable damage. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Larvae medium on passion-vines (Passiflora spp.) nursery stock in Pacifica, San Mateo County. (Cal. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - NEBRASKA - Larvae feeding on cotton in York County. (Roselle). Adults being taken in light traps in western area. (Bergman).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Light on chrysanthemums in Wasco, Kern County, and heavy on ornamentals and conifer nursery stock in Visalia, Tulare County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Aphis spiraeicola heavy on Photinia sp. in Los Altos, Santa Clara County. Macrosiphum scoliopi medium on Easter lilies at a location in Arcata and light in McKinleyville, Humboldt County. Neothomasia populicola nymphs and adults heavy on poplar leaves in Wasco, Kern County. (Cal. Coop. Rpt.). UTAH - Pterocomma sp. numerous on willows at Murray, Salt Lake County. Drepanaphis utahensis, mostly males and egg-laying females, extremely numerous on bigtooth

maple in Blacksmith Fork Canyon, Cache County; bushes sticky. Therioaphis tiliae heavy on linden trees. (Knowlton, Hanson). MARYLAND - Aphids moderate on rose buds at University Park, Prince Georges County. (U. Md., Ent. Dept.).

HACKBERRY-NIPPLE-GALL MAKER (Pachypsylla celtidismamma) - MARYLAND - Galls abundant on hackberry at Hagerstown, Washington County. (U. Md., Ent. Dept.).

LACE BUGS (Corythucha spp.) - FLORIDA - C. cydoniae severe on leaves of Pyracantha sp. at Jacksonville, Duval County. (King, Oct. 4). C. ciliata severe on leaves of sycamore at Tampa, Hillsborough County. (Jamieson, Sept. 23).

ROSE LEAFHOPPER (Edwardsiana rosae) - UTAH - Discoloring rose foliage at Providence and Logan, Cache County. Many have moved to spirea near roses at Logan. (Knowlton, Hanson).

COCCIDS - CALIFORNIA - Saissetia hemisphaerica medium on Euonymus sp. in San Francisco, San Francisco County. Lecanium sp. ranged medium to heavy on coleus plants in Galt, Sacramento County. (Cal. Coop. Rpt.). ALABAMA - Fiorinia theae heavy on isolated Burford hollies used as ornamental base plantings at rural homes in Macon and Lee Counties. (McQueen). FLORIDA - Pinnaspis strachani infesting palm leaves at Orlando, Orange County. (Crews). NORTH CAROLINA - An undetermined mealybug infesting begonia in a Hertford County greenhouse. (Langdon, Mount). Chrysomphalus tenebricosus noted on maple at a Wake County location. (Spell, Mount). MARYLAND - Unaspis euonymi infesting euonymus at Ellicott City, Howard County. Coccus hesperidum heavy on English ivy at Trappe, Talbot County. (U. Md., Ent. Dept.).

AN ERIOPHYID MITE (Eriophyes loewi) - WASHINGTON - Possibly this species, seriously bronzing lilac foliage at Pullman, Whitman County. (Telford).

AN ACARID MITE (Tyrophagus sp.) - FLORIDA - Severe on wedelia at Tampa, Hillsborough County. (Hale, Sept. 27).

INSECTS AFFECTING MAN AND ANIMALS

A CALLIPHORID FLY (Cochliomyia sp.) - MISSISSIPPI - Larvae collected from cattle in Forrest County during July do not completely agree with C. hominivorax, although they are close. May be natural hybrids with C. macellaria, or some aberration in development or mutation. Det. by C. W. Sabrosky. (Ouzts).

HORN FLY (Haematobia irritans) - UTAH - Continues annoying to cattle in Farmington-Layton area, Davis County, and in southern Weber County. (Knowlton). OKLAHOMA - Populations unchanged in Stillwater area, Payne County (north central). Ranged 600-800 per head on cattle in McIntosh County (east central); moderate infestations reported in Mayes (east central) and Cleveland (central) Counties. (Okla. Coop. Sur.). GEORGIA - Averaged 100 per animal on beef cows in Burke County; averaged 8 per animal on treated beef cows in Pike County, and 5 per treated beef cow in Spalding County. Averaged 114 per untreated animal in Spalding County. (Roberts, Oct. 2).

A DEER FLY (Chrysops atlanticus) - DELAWARE - Adults annoying in an eastern area of Kent County. (Lake, Murphey).

HORSE BOT FLY (Gasterophilus intestinalis) - CALIFORNIA - Heavy on legs of horses in Florin, Sacramento County. (Cal. Coop. Rpt.).

MOSQUITOES - UTAH - Continue a problem in many parts of State. (Fronk, Knowlton). Troublesome in Fielding-Brigham City-Perry area, Box Elder County. (Knowlton). NEBRASKA - Quite troublesome in Franklin and Kearney County areas. (Roselle). MINNESOTA - Hatching continues and unspecified species have been nuisance in some areas. (Minn. Ins. Rpt.).

Polistes spp. prevalent in Black River Falls area, Jackson County, October 5, but not stinging despite molestation and warm temperatures. (Wis. Ins. Sur.).

AN EPIDERMOPTID MITE (Dermatophagoides sp.) - CALIFORNIA - Heavy on humans and clothing in Santa Maria, Santa Barbara County. (Aldermann Pest Control).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Invading homes and schoolrooms in several northern localities. (Knowlton). MINNESOTA - Causing concern to few homeowners by collecting in sunny locations. (Minn. Ins. Rpt.). OHIO - Heavy numbers moving into home at Shreve, Wayne County, northeast. (White). Several requests for control received in Franklin County, central area. (Jones). Noted near Urbana, Champaign County, west central. (Lyon). MARYLAND - Annoying homeowners at several localities in Washington County. (U. Md., Ent. Dept.). NORTH CAROLINA - Problem in a home in Gaston County. (Mount).

CIGARETTE BEETLE (Lasioderma serricorne) - ALABAMA - Reported by several residents in Lee County as infesting cornmeal, grits and dried fruit. (McQueen). GEORGIA - Heavy in cereals in homes in Macon, Bibb County. (Johnson). MARYLAND - Adults abundant in home at Hyattsville, Prince Georges County. (U. Md., Ent. Dept.).

A WEEVIL (Trachyphloeus bifoveolatus) - WASHINGTON - Infesting homes in Cooke, Skamania County. This is a new county record. (Adlard, Brannon).

AN EARWIG (probably Labidura riparia) - GEORGIA - Moderate to heavy infestations in homes in Dublin, Laurens County, and in Waynesboro, Burke County. (Stamey, Fortson; Oct. 4).

STORED-PRODUCT INSECTS

Stored-product Insects in Florida - CIGARETTE BEETLE (Lasioderma serricorne) ranged light to heavy in stored grain at Sanford, Seminole County (Desin, Sept. 24); infested wheat at Winston, Polk County (Risk, Dunham; Sept. 26) and ground feed on floor at Gainesville, Alachua County (Adkins, Oct. 4). SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) ranged light to heavy in stored grain at Sanford, Seminole County. (Desin, Sept. 24).

Stored-product Insects in Wyoming - Inspection of 28 granaries in Fremont, Washakie and Big Horn Counties showed the following species present: SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) adults very light to moderate in 25 granaries; RED FLOUR BEETLE (Tribolium castaneum) adults light and active in 19 granaries; CONFUSED FLOUR BEETLE (T. confusum) adults active and very light in 12 granaries; CADELLE (Tenebroides mauritanicus) adults active and very light in 10 granaries; MEAL MOTH (Pyralis farinalis) larvae present in 2 granaries. (Marks).

RUSTY GRAIN BEETLE (Cryptolestes ferrugineus) - OHIO - Noted at Steubenville, Jefferson County, east central. (Knight, Holdsworth).

BENEFICIAL INSECTS

FLOWER BUGS (Orius spp.) - UTAH - O. tristicolor moderately numerous in flowers of rabbitbrush heavily infested with thrips in northern localities. (Knowlton). WISCONSIN - O. insidiosus averaged 2 per sweep in alfalfa in western Dane County. Also prevalent and annoying in Madison area October 5. (Wis. Ins. Sur.).

DAMSEL BUGS (Nabis spp.) - NEVADA - Heavy in all alfalfa fields in Lovelock, Pershing County. (Lauderdale).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA.- Moderate in grove at Duette, Manatee County. Det. by W. Breidenbach. (Holden, Sept. 24).

A LEAF TIER (Udea profundalis) - CALIFORNIA - Adults heavy on grass under oak trees in Tudor, Sutter County. (Cal. Coop. Rpt.).

CUTWORMS - COLORADO - Total of 53 Agrotis orthogonia and 16 Feltia subgothica collected in light trap at Rocky Ford during period October 1-7. (Schweissing).

A SNAIL (Oxychilus cellarius) - CALIFORNIA - Heavy in dichondra lawn in Carlsbad, San Diego County. (Cal. Coop. Rpt.).

INTERCEPTIONS

A SNAIL (Helicella maritima) - OHIO - One live and 2 dead specimens found aboard ship from Taranto, Italy, on general cargo; no infestation found on vessel, SS Exiria. (Fryer, Sept. 16).

KHAPRA BEETLE (Trogoderma granarium) - OHIO - One cast skin found on bag of rice in dry storeroom during initial inspection of SS Bintang at Ashtabula on September 19; one live larva later found on rice in same location during follow-up inspection at Cleveland on September 22. Vessel authorized movement with storeroom under seal. (Fryer).

CORRECTIONS

CEIR 13(41):1218 - EAWIGS - ARIZONA - Forficula sp. should read Labidura riparia.

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on July 31, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in baggage at Laredo, Texas.

A WEEVIL (Apion sp., probably carduorum Kby.) (a pest of artichoke in the Mediterranean area) twice in stores at Baltimore, Maryland, and Philadelphia, Pennsylvania.

LIGHT-BROWN APPLE MOTH (Austrotortrix postvittana (Wlk.)) (or related tortricid species) in apple cargo after treatment; 3 times at Honolulu, Hawaii; 2 times at Charleston, South Carolina; and 2 times at Seattle, Washington.

PEACH FRUIT MOTH (Carposina niponensis Wlsm.) in apples in quarters at Corpus Christi, Texas.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 7 times; once in stores and 6 times in baggage; 1 time at Wilmington, North Carolina; 3 times at San Francisco and once at San Diego, California; and twice at New York International Airport, New York.

MELON FLY (Dacus cucurbitae Coq.) (or probably that species) twice in stores at San Diego, California.

ORIENTAL FRUIT MOTH (Dacus dorsalis Hend.) in baggage at San Francisco, California.

A WEEVIL (Epicaerus sp., probably cognatus Sharp) in baggage at Calexico, California.

A STINK BUG (Eurydema ornata (L.)) (an economic pest of crucifers throughout the Palearctic Region) with cargo (between layers of wood in roll of cable) at Dover, Delaware.

A PYRAUSTID MOTH (Evergestis forficalis (L.)) (an economic species on crucifers, celery, beets and other hosts in parts of Europe, U.S.S.R., Japan) in stores at Houston, Texas.

SUGAR-BEET CROWN BORER (Gnorimoschema ocellatella (Boyd)) (pest of beets in Mediterranean area) 3 times in stores; twice at Philadelphia, Pennsylvania, and once at New York, New York.

A NOCTUID MOTH (Gortyna flavago (Schiff.)) (an important pest of artichoke in Mediterranean region) in stores at Baltimore, Maryland.

LARGE WHITE BUTTERFLY (Pieris brassicae (L.)) (a widespread crucifer pest in the Old World) pupae adhering to wooden boxes in cargo at New Orleans, Louisiana.

AN ANDEAN POTATO WEEVIL (Premnotrypes sp.) in stores at Baltimore, Maryland; New Orleans, Louisiana; and Mobile, Alabama.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) 16 times; 6 times in stores, 1 time in quarters and 9 times in baggage; 1 time at San Pedro, California, and 15 times at New York International Airport, New York.

A TORTRICID MOTH (Tortrix excessana (Wlk.)) (a needle-tying species) in apple cargo at Honolulu, Hawaii.

KHAPRA BEETLE (Trogoderma granarium Everts) (or probably that species) 25 times in stores, ship's hold and contaminating cargoes of woolen carpets, guar gum, gum karaya, gum arabic, cotton piece goods, cotton waste and rubber; 15 times at New York, New York; 1 time at Houston, Texas; 2 times at San Pedro, California; 1 time at Philadelphia, Pennsylvania; 4 times at Charleston, South Carolina; and 2 times at Cleveland, Ohio.

Weather of the week ending October 14 (continued from page 1236)
Gulf and Atlantic coast from Mobile, Alabama, to Nantucket, Massachusetts, and over northeastern New England. Elsewhere over the country, temperatures averaged above normal. Due to the high afternoon temperatures on several days, temperatures over the middle and northern Great Plains averaged 8° to 10° above normal. At the end of the week, the long Indian summer continued with clear skies, abundant sunshine, warm days, cool nights, low humidity, and no important rain over most of the Nation. (Summary supplied by U.S. Weather Bureau).

1962 WISCONSIN INSECT LOSS ESTIMATES*
 Prepared by Division of Plant Industry
 Wisconsin Department of Agriculture

| Crop | Acres Planted | Acres Treated | Yield Untreated Acreage (See legend for units) | Yield Treated Acreage | Percent Reduction | Total Cost (\$) | Loss from Untreated Acreage (\$) | Gain or Loss from Treatment (\$) | Principal Pests |
|-----------------|---------------|---------------------------------|--|-----------------------|-------------------|-----------------|----------------------------------|----------------------------------|-----------------------------------|
| Corn (grain) | 1,500,000 | 700,000 sd. t. 210,000 s & f | 36,285,000 bu. | 60,515,000 bu. | 4 | \$1,820,000 | \$3,127,000 | \$3,003,000 | Soil insects, European corn borer |
| Corn (ensilage) | 1,035,000 | --- | --- | --- | -- | --- | --- | --- | --- |
| Corn (sweet) | 107,400 | 21,165 | 294,924 t. | 80,004 t. | 5 | 68,786 | **546,374 | 65,320 | European corn borer, corn earworm |
| Oats | 2,336,000 | 10,000 | 129,093,000 bu. | 565,000 bu. | trace | 12,500 | 1,511,900 | -6,000 | Armyworm, greenbug |
| Hay | 3,914,000 | 50,000 | 9,698,640 t. | 125,500 t. | 3 | 100,000 | 5,564,160 | -28,000 | All insects |
| Soybeans | 101,000 | --- | 1,767,500 bu. | --- | trace | --- | 11,362 | --- | All insects |
| Peas | 112,300 | 21,689 | 195,719,760 lb. | 65,534,560 lb. | 15 | 75,911 | 3,030,032 | 649,369 | Pea aphid |
| Tobacco | 12,000 | 5,000 | 11,116,000 lb. | 8,260,000 lb. | 2 | 40,000 | 132,160 | 54,400 | Soil insects, cutworms |
| Potatoes | 50,000 | 50,000 | --- | 10,550,000 cwt. | 65 | 750,000 | --- | 10,963,500 | Potato leafhopper |
| Cabbage | 5,900 | 5,900 | --- | 1,770,000 cwt. | 95 | 70,800 | --- | 1,425,735 | Aphids, loopers, cabbage maggot |
| Cucumber | 14,200 | 2,160 | 30,100 t. | 5,400 t. | trace | 6,480 | 15,652 | -3,672 | Cucumber beetles |
| Snap beans | 27,900 | 3,647 | 48,506 t. | 7,294 t. | 20 | 10,941 | 678,114 | 91,029 | Leafhoppers |
| Lima beans | 5,700 | 3,351 | 4,134,240 lb. | 8,846,640 lb. | 20 | 10,053 | 115,759 | 155,084 | Leafhoppers |

1962 Wisconsin Insect Loss Estimates (continued)

| Crop | Acres Planted | Acres Treated | Yield Untreated Acreage (See legend for units) | Yield Treated Acreage | Percent Reduction | Total Cost (\$) | Loss from Untreated Acreage (\$) | Gain or Loss from Treatment (\$) | Principal Pests |
|--------------|---------------|---------------|--|-----------------------|-------------------|-----------------|----------------------------------|----------------------------------|--|
| Carrots | 2,100 | 849 | 425,340 cwt. | 288,660 cwt. | 2 | 7,641 | 10,683 | 3,817 | Six-spotted leafhopper |
| Lettuce | 3,000 | 3,000 | --- | 435,000 cwt. | 10 | 27,000 | --- | 193,100 | Six-spotted leafhopper |
| Beets | 7,900 | 370 | 71,535 t. | 3,515 t. | trace | 1,110 | 10,843 | -45 | Leaf miners |
| Mint | 4,300 | 700 | 151,200 lb. | 29,400 lb. | trace | 1,750 | 9,360 | 1,890 | Loopers |
| Onions | 2,200 | 2,200 | --- | 572,000 cwt. | 25 | 17,600 | --- | 397,100 | Onion maggot, onion thrips |
| Apples | 10,000 | 10,000 | --- | 1,400,000 bu. | 90 | 1,100,000 | --- | 790,000 | Codling moth, apple maggot |
| Cherries | 8,500 | 8,500 | --- | 13,500 t. | 85 | 680,000 | --- | 466,000 | Apple maggot |
| Cranberries | 5,168 | 4,500 | 69,205 bbl. | 466,200 bbl. | 1 | 22,500 | 5,611 | 15,300 | Cranberry fruitworm, black-headed fireworm |
| Strawberries | 2,000 | 1,300 | 2,172,800 lb. | 4,160,000 lb. | * 3 | 58,500 | 16,223 | 12,606 | Strawberry leaf roller, meadow spittlebug |

* Acreage and yield values derived from Crop Reporting Service data; Acreage treatment courtesy of University of Wisconsin Extension Service and Wisconsin Canner's Association. Yield based on current 1962 data, prices on 1961 data.

** Actual value unobtainable due to inability to evaluate loss in time necessitated by trimming.

Legend: t. = ton
cwt. = hundredweight
bbl. = barrel
lb. = pound
bu. = bushel

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Grain sorghum (Commodity) | IN | Texas (State or District) | DURING | 1962 (Year) |
|-----------|--|--------|------------------------------|--------|----------------|
| A. | Pest or pest complex <u>Sorghum midge, corn earworm, sorghum webworm</u> | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>5,052,000</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>40 bu.</u> | | |
| D. | Price ^b per unit (<u>bu.</u>) ^c (From CRS) | \$/ | <u>0.85*</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>3,000,000</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>1,000,000</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>30</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>12 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>10.20</u> | | |
| K. | Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>negligible</u> | | |
| D. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>24,000,000 bu.</u> | | |
| M. | Control cost, \$ per <u>acres</u> ^a | \$/ | <u>1.50</u> | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>1,500,000</u> | | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>20,400,000</u> | | |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>negligible</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>21,900,000</u> | | |

Comment: Seed treatment data not included. Estimate of total losses is probably conservatively low--sorghum midge destroyed up to 100% of sorghum grain in late planted fields in the Panhandle area. Also, considerable acreage was improperly treated resulting in additional costs with no yield increase.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Texas DURING 1962 (Harvest)
(Commodity) (State or District) (Year)

| | | | |
|----|---|---|--------------------|
| A. | Pest or pest complex | <u>Fall armyworm, army cutworm, greenbug, winter grain mite</u> | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | <u>No.</u> | <u>2,731,000</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | <u>Units/</u> | <u>16 bu.</u> |
| D. | Price ^b per unit (bu.) ^c (From CRS) | <u>\$/</u> | <u>1.50*</u> |
| E. | <u>Acres</u> ^a needing control | <u>No.</u> | <u>270,000</u> |
| F. | <u>Acres</u> ^a treated | <u>No.</u> | <u>130,000</u> |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | <u>%</u> | <u>8</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | <u>Units/</u> | <u>1.28 bu.</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | <u>\$/</u> | <u>1.92</u> |
| K. | Loss in quality, \$ per <u>acre</u> ^a | <u>\$/</u> | <u>negligible</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | <u>Units</u> | <u>179,200 bu.</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | <u>\$/</u> | <u>1.00</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | <u>\$</u> | <u>130,000</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | <u>\$</u> | <u>268,800</u> |
| P. | Quality loss for all <u>acres</u> ^a , (E-F) x K | <u>\$</u> | <u>negligible</u> |
| Q. | Combined control cost and losses, N + O + P | <u>\$</u> | <u>398,800</u> |

Comment: Yields were considerably below the average of 23.0 bushels in 1961 due to
unfavorably dry weather during the spring of 1962. Insects were of minor consequence only.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton IN Texas DURING 1962
(Commodity) (State or District) (Year)

| | | |
|--|--|------------------------|
| A. Pest or pest complex | <u>Bollworm, boll weevil, tobacco budworm, fleahoppers, thrips, cabbage looper, spider mites, lygus bugs, pink bollworm, beet armyworm</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | <u>6,580,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>343 lbs. lint</u> |
| D. Price ^b per unit (lb.) ^c (From CRS) | \$/ | <u>.30*</u> |
| E. <u>Acres</u> ^a needing control | No. | <u>4,935,000</u> |
| F. <u>Acres</u> ^a treated | No. | <u>3,950,000</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | <u>25</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>85.75 lbs.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>25.73</u> |
| K. Loss in quality, \$ per <u>acre</u> ^a | \$/ | <u>1.00</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>84,463,750 lbs.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | <u>10</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | \$ | <u>39,500,000</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>25,344,050</u> |
| P. Quality loss for all <u>acres</u> ^a , (E-F) x K | \$ | <u>985,000</u> |
| Q. Combined control cost and losses, N + O + P | \$ | <u>65,829,050</u> |

Comment: These figures do not reflect losses due to diseases, and in many instances losses due to a combination of insects and diseases are impossible to separate.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

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AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID locally heavy in Independence County, Arkansas, and Oktibbeha County, Mississippi; continues to increase in Wisconsin and some damage observed in southeast Illinois and Bedford County, Virginia; and generally low populations observed in Kansas. (p. 1261). APPLE GRAIN APHID and ENGLISH GRAIN APHID recorded on small grains in Payne and Logan Counties, Oklahoma; appearance earlier than normal. (p. 1274). SOUTHWESTERN CORN BORER caused less lodging of corn plants in Arkansas than for past 3 years, and damage by the borer found in several Alabama counties. (p. 1262). ALFALFA WEEVIL adults continue active in Utah and Colorado, and larvae continue to feed on alfalfa in Maryland with few fields showing damage in latter State. (p. 1263). HESSIAN FLY damage to early planted wheat variable in central and northern portions of south central Kansas, and SORGHUM MIDGE caused light to heavy losses to late grain sorghum in Lea County, New Mexico. (p. 1264).

PINK BOLLWORM more general throughout Oklahoma than past 2 seasons, and specimens recovered from several Arkansas counties and Louisiana parishes. Pink bollworm infestation general in Eddy County, New Mexico, cotton; and heavy numbers of larvae still being found in lint cleaners and in cotton fields in Graham County, Arizona. (p. 1267).

Larvae of a GALL MIDGE, probably *Contarinia coloradensis*, caused extensive damage to ponderosa pines in area of Colorado, and INTRODUCED PINE SAWFLY caused noticeable defoliation of pine in 3 Minnesota counties. (p. 1269). Heavy populations of WALKINGSTICK defoliating oaks on Ouachita National Forest in Oklahoma. (p. 1274).

DETECTION

SOUTHWESTERN CORN BORER recorded for first time in Alabama; found in Pickens, Choctaw, Sumter, Hale, Greene and Tuscaloosa Counties. (p. 1262). New county records of significance were SMALLER EUROPEAN ELM BARK BEETLE in Ventura County, California (p. 1269); WHITE-FRINGED BEETLES in Forsyth County, Georgia; Itawamba and Prentiss Counties, Mississippi; Catawba and Cleveland Counties, North Carolina; Virginia Beach (formerly Princess Anne County), Virginia; and Liberty County, Florida (p. 1273) (Liberty County, Florida, previously reported in CEIR 13(41): 1219, but not as new county record); and IMPORTED FIRE ANT in Galveston County, Texas (p. 1273).

CORRECTIONS and ADDITIONAL NOTES

See page 1274.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1271).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Grain Sorghum, Wheat, Alfalfa, Cotton, Beef and Dairy Cows in Oklahoma in 1962. (pp. 1277-1282).

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana - 1962. (pp. 1283-1284).

Insects Not Known to Occur in the United States (Indian sugarcane leafhopper (*Pyrilla perpusilla* (Walker))). (p. 1285).

Reports in this issue are for week ending October 18, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER 1963

The Weather Bureau's 30-day outlook for the period mid-October to mid-November calls for temperatures to average above seasonal normals in the eastern two-thirds of the Nation, except near normal along Gulf and South Atlantic coasts. In the western third, below normal averages are predicted, except near normal in the Pacific Northwest and along the west coast. Precipitation is expected to remain subnormal in the eastern quarter of the country (except the extreme Southeast), but substantial rains should replace dry weather over much of the central United States. Precipitation in excess of normal is anticipated in most regions west of the Continental Divide. In areas not specified, near normal amounts are in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING OCTOBER 21

At the beginning of the week, a huge high pressure area spread over the East. Another was centered over the central Rocky Mountains. Fair weather with typical Indian summer continued over the East. Afternoon temperatures were generally in the 70's and 80's with a few 90's scattered over the central and southern Great Plains. Minimums were mostly in the 40's and 50's, except in the higher elevations of the northern Appalachians and at a few stations in New York and New England where they dropped to freezing or near freezing. In the West, minimum temperatures ranged from the 30's in the mountains and higher latitudes to the 50's along the Mexican border. An upper level low pressure system, which separated the two high pressure areas, produced some generous rains over the central Great Plains. Wichita, Kansas, received 1.10 inches of rain on Wednesday. Des Moines, Iowa, received 1.87 inches on Thursday, and Concordia, Kansas, received 1.11 inches on Friday. Lesser amounts fell daily from Wednesday to Friday over a wide area which extended from Kansas to Lake Michigan.

At midweek, an intense storm system - the remnants of a tropical storm from the Pacific - provided rains over most of California and inland as far as the southern Rocky Mountains. Needles, California, received 1.10 inches of rain on Friday and 1.18 inches fell at Phoenix, Arizona, on Saturday. Another storm moved into the Far Northwest about midweek. It produced light rains over the Northwestern States. When it reached the Great Plains, they had become loaded with moist tropical Gulf air. Precipitation fell Sunday over a wide area extending from the Great Basin to Wisconsin and from Montana to Oklahoma. Tulsa, Oklahoma, received 1.91 inches and 1.37 inches fell at Wichita, Kansas, on Sunday. No important rain fell during the week east of a line from Port Arthur, Texas, to Cleveland, Ohio, except at Hatteras, North Carolina, and vicinity, where more than 3 inches fell on Saturday and Sunday in connection with hurricane Ginny which was remaining almost stationary about 125 miles southeast of Hatteras. Drought continued over the eastern United States. In some States, it was the 5th week of dry weather and the longest dry spell of record. Numerous woods and forests were closed to the public because of the extreme danger of forest fires. Stockwater supplies ran low and ponds and wells dried in some areas. In some areas, where light rains fell, runoff was insufficient to raise stream levels. With warm daytime temperatures, abundant sunshine, and low humidity, evaporation increased, intensifying the drought and the forest fire danger became more frightening. Precipitation totaled less than an inch over most of the West. Some spots along the Canadian border received no rain. Some spots in the southern Rockies received more than 1 inch. The total for Phoenix, Arizona, was 1.43 inches.

Temperatures averaged below normal over two small areas. In the interior valleys of California, temperatures averaged from 1° to 3° below (continued on page 1276)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Continues to increase; 4-5 fold increase noted since last report (CEIR 13(42):1238) at observation field near Brodhead, Green County; ranged 1,200-1,500 per sweep on October 15. Combination of drought and aphids causing severe damage to fields in area, with alates composing 5 percent of population. Predators and disease continue scarce; small nymphs more common than preceding week. Specimens found in scattered fields in Sauk, Dane, Green and Rock Counties; many of which previously not infested by this species. Populations in previously infested fields have also shown increase. (Wis. Ins. Sur.). ILLINOIS - Varied 6-440 (average 176) per sweep in alfalfa in Hardin and Pope Counties (extreme southeast) and 0-0.8 in Johnson County (south central). Although some alfalfa in Hardin-Pope County area sticky with honeydew and showing some slight discoloration and leaf curling, no leaf drop apparent. Alfalfa in area not suffering from drought as much as in Johnson County. (Ill. Ins. Rpt.). NEBRASKA - Ranged 20-40 per 10 sweeps in southwestern areas bordering Kansas and Colorado State lines. Averaged approximately 3 per 10 sweeps in Dawson County. (Bergman). KANSAS - Averaged less than one per sweep on alfalfa in southwestern area. No damage noted on seedling or established alfalfa. (Peters). ARKANSAS - Heaviest infestation observed since pest first recorded in State noted in Oil Trough area, Independence County (northeast). Aphids too numerous for accurate count when taken in sweep net or other methods; several hundred per square foot shaken from plants. Honeydew heavy. (Ark. Ins. Sur.). MISSISSIPPI - Large numbers noted on alfalfa at State College, Oktibbeha County, October 17. (Ouzts). VIRGINIA - All stages present in large numbers in field of newly seeded alfalfa in Bedford County; damage moderate. (Amos, Boone; Oct. 9).

YELLOW CLOVER APHID (*Therioaphis trifolii*) - WISCONSIN - Alates appearing. (Wis. Ins. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - UTAH - Very numerous on alfalfa in Centerville-Farmington area, Davis County. (Knowlton). NEBRASKA - Ranged 20-150 per 10 sweeps in southwestern area alfalfa. (Bergman). WISCONSIN - Continues to increase in southern counties; ranges 100-500 per sweep in majority of alfalfa. In fields where populations low, larvae of lady beetles and lacewings average 3-6 per sweep; *Nabis ferus* also common in many fields. (Wis. Ins. Sur.). ILLINOIS - Varied 0.2-260 (average 64) per sweep in alfalfa in Hardin and Pope Counties (extreme southeast) and 8-400 (average 204) per sweep in Johnson County (south central). (Ill. Ins. Rpt.). OHIO - Populations remain extremely high in Wayne County, northeast; counts often as high as 300 per sweep. (Treece). Damage serious in many alfalfa fields throughout northwest; counts remain high with host plants brown and dying. Injury serious in many alfalfa fields in Seneca, Wyandot, Hancock, Wood and Sandusky Counties. (Treece, Lyon). MARYLAND - Ranged 0-12 per sweep in 6 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Remains abundant on alfalfa in an area of New Castle County. (Burbutis).

PLANT BUGS - UTAH - *Lygus* spp. averaged 3 per 25 sweeps in alfalfa in Logan-Smithfield area, Cache County; 20 percent nymphs, largely third instar. (Knowlton). NEBRASKA - *Lygus lineolaris* adults per 10 sweeps in alfalfa were 10-20 in southwestern area and 6 in Dawson and Phelps Counties. (Bergman). ILLINOIS - Adult counts per 100 sweeps in alfalfa in Hardin and Pope Counties (southern area) as follows: *Adelphocoris lineolatus* 5-10 (average 9); *Adelphocoris rapidus* 10-20 (average 14); *Lygus lineolaris* 10-400 (average 138). Nymphs of these 3 species ranged from 0 to 20 (average 6) per 100 sweeps. (Ill. Ins. Rpt.). MARYLAND - *L. lineolaris* adults ranged 1-2 per sweep in Frederick County alfalfa. (U. Md., Ent. Dept.).

CHINCH BUG (*Blissus leucopterus*) - VIRGINIA - Severe on one-half to one-third of bluegrass lawn in Grundy, Buchanan County. Large areas of grass dead; adjoining areas dying. (Tarpley, Abbott; Oct. 11).

A COREID BUG (*Liorhyssus hyalinus*) - CALIFORNIA - Nymphs and adults of this species and *Lygus* sp. medium on sorghum in Robbins, Sutter County. (Cal. Coop. Rpt.).

MEADOW SPITTELEBUG (*Philaenus spumarius*) - MARYLAND - Adults ranged 0-5 per 5 sweeps in 6 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (*Empoasca fabae*) - ILLINOIS - Adults varied 0-250 (average 55) and nymphs 0-400 (average 45) per 100 sweeps in alfalfa in Hardin and Pope Counties. (Ill. Ins. Rpt.). WISCONSIN - Nymphs and adults remain common in many alfalfa fields in southern part of State; counts as high as 15 per sweep. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Apparently decreasing in alfalfa fields in Graham, Pinal and Maricopa Counties; ranged 200-250 per 100 sweeps. (Ariz. Coop. Sur.).

SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) - WISCONSIN - Adults averaged 6 per 10 sweeps in grain in Spring Green area, Sauk County. (Wis. Ins. Sur.).

RICE DELPHACID (*Sogatia orizicola*) - FLORIDA - Sweepings on Kreamer Island, Palm Beach County, revealed 5 specimens in one collection; rice being plowed under. (PPC, South. Reg., Sept. Rpt.).

CORN EARWORM (*Heliothis zea*) - ARIZONA - Light to moderate and causing some damage to sorghum in Yuma County. (Ariz. Coop. Sur.). MICHIGAN - Larval injury to field corn in Gratiot, Isabella, Wayne, Monroe, Lenawee, Hillsdale and Calhoun Counties extremely low this season. Only 2 ears from a Gratiot County field showed slight injury; 1,045 ears sampled from 36 fields. (Janes, Newman). ILLINOIS - Damage survey attempted in southern part of State; however, as 25-30 percent of corn harvested, accurate survey could not be made. As this is first attempt at this type of survey, trial survey in southeast district showed 0.1 percent damage to field corn. (Ill. Ins. Rpt.). NORTH CAROLINA - Damaged almost all ear tips in field of corn in Jackson County. Det. by D. A. Mount. (Gibson). ALABAMA - Although few in number, full-grown larvae noted in most extremely late sweet and field corn in western counties. No moths noted. (McQueen).

ALFALFA CATERPILLAR (*Colias eurytheme*) - UTAH - Few noted in alfalfa fields in Davis and Weber Counties. Moderately numerous in some alfalfa in Logan-Smithfield area, Cache County. (Knowlton). ARIZONA - Decreasing in most alfalfa in Graham, Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ALABAMA - Found for first time in State in Pickens County in fall of 1962. Cooperative survey this season showed pest and damage to corn in Choctaw, Sumter, Hale, Greene and Tuscaloosa Counties. Not found in Mobile, Bibb, Washington and Marengo Counties. Counties yet to be surveyed in 1963 are Jefferson, Walker, Fayette, Lamar, Marion, Franklin, Colbert and Lauderdale; survey to be completed in Perry County. If pest found in these counties, further survey to east will be necessary to determine southern and eastern penetration of pest into State. (Henderson, McQueen). ARKANSAS - Amount of lodging of corn from girdling less than past 3 years; same areas surveyed each of 4 years. Few summer phase (spotted) larvae found in corn of later planting dates; however, all larvae found, below ground level. (Ark. Ins. Sur.). NEW MEXICO - Larvae common in stalks and roots of corn plants checked in Quay, Curry and Roosevelt Counties. (N. M. Coop. Rpt.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Survey made in 11 counties; very light infestations in corn noted only in Tuscaloosa and Perry Counties. (McQueen). Infested 30 percent of grain sorghum in several areas of Lauderdale County; much heavier in isolated areas of some fields. (Buttram).

BEE T ARMYWORM (*Spodoptera exigua*) - TEXAS - Heavy, localized population damaging oats in Falls County. (Wood). ARIZONA - Present in some alfalfa in Yuma and Maricopa Counties; averaged 20 per 100 sweeps. (Ariz. Coop. Sur.).

FALL ARMYWORM (*Laphygma frugiperda*) - TEXAS - Light to heavy populations damaging lawns in Brazos County. (Newton). ALABAMA - Completely destroyed 2-acre field of sweet corn in Bibb County. Earlier damage noted in several western counties. (McQueen). Stripping kudzu in isolated areas of Mobile County. (Bolton, Seibels, et al.).

A NOCTUID MOTH (*Stibadium spumosum*) - CALIFORNIA - Larvae heavy in flowers of common sunflower in Los Banos, Merced County. (Cal. Coop. Rpt.).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - GEORGIA - Light on soybeans in northeast and southeast areas. (Johnson).

A FIERY SKIPPER (*Hylephila phylaeus*) - CALIFORNIA - Larvae heavy on grass roots and sod in Lafayette, Contra Costa County. (Cal. Coop. Rpt.).

ALFALFA WEEVIL (*Hypera postica*) - MARYLAND - Larvae continue to feed on alfalfa in most sections of Frederick County; ranged 0.6-50 per 50 sweeps, with few fields showing conspicuous injury. (U. Md., Ent. Dept.). ILLINOIS - No adults, larvae nor damage observed in alfalfa in Hardin, Pope or Johnson Counties, southern area. (Ill. Ins. Rpt.). COLORADO - Adults appearing in alfalfa fields in northeastern area; range 6-10 per 100 sweeps. (Hantsbarger). UTAH - Adults active during warm periods of the day and sometimes numerous in Logan-Smithfield area alfalfa fields, Cache County. (Knowlton).

CLOVER LEAF WEEVIL (*Hypera punctata*) - WISCONSIN - First and second stage larvae appearing in alfalfa and clover. (Wis. Ins. Sur.).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - WISCONSIN - Common in most alfalfa in Dane, Sauk, Green, Rock and Iowa Counties; ranged as high as 5 per sweep in some fields. (Wis. Ins. Sur.).

A WEEVIL (*Sitona scissifrons*) - WISCONSIN - Present in alfalfa in Sauk County. (Wis. Ins. Sur.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - OHIO - Adults feeding on silks of treated and untreated field corn near Van Wert, Van Wert County, northwest; populations widespread. (Oetzl). Observed feeding on gladiolus flowers near Bowling Green, Wood County, northwest; adults present since last summer. (Jones). Low adult counts noted in red clover in Defiance County, northwest. (Lyon).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - NEBRASKA - Adults very active in 12 fields of corn in Keith County. (Bergman).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - GEORGIA - Moderate to heavy on soybeans in northeast and southeast areas. (Johnson, Freeman). NORTH CAROLINA - Damaged about one-quarter acre of 3-acre field of newly seeded alfalfa. (Love, Robertson).

A CERAMBYCID BEETLE (*Derobrachus brevicollis*) - GEORGIA - Infestation ranged light to moderate in Bahia grass in Early County. (Cooper, Oct. 1).

A SCARAB (*Cyclocephala* sp.) - CALIFORNIA - Larvae heavy in grass in golf course in Oroville, Butte County. Conditions have been very favorable past 2 years; many infestations being reported. (Cal. Coop. Rpt.).

FLEA BEETLES - NEW MEXICO - Heavy population killing out wheat in small area near Clovis, Curry County. (N. M. Coop. Rpt., Oct. 11). NORTH CAROLINA - Severely damaged approximately one-half of 6-acre field of rye near Snow Hill, Greene County; rye about 5 inches high. (Robertson).

A WIREWORM - MICHIGAN - Larvae of undetermined species caused approximately 15 percent reduction of stand of wheat in Clinton County field. (Janes).

A THRIPS (Frankliniella occidentalis) - CALIFORNIA - Adults heavy on sorghum in Witter Springs, Lake County. (Cal. Coop. Rpt.).

GRASSHOPPERS - NORTH DAKOTA - Adults remain active along roadsides in southwest; ranged 3-10 per square yard near Mott, Hettinger County. (N. D. Ins. Sur.). UTAH - Numerous in small areas, but general population decreased greatly in central and northern areas. (Knowlton). WISCONSIN - Melanoplus femurrubrum continues common; dissected females show continued egg production. Many showing signs of wing chewing. Eggs difficult to find in alfalfa. (Wis. Ins. Sur.).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Percent early planted wheat plants infested in central and northern portions of south central area ranges 0-60; average about 7.5 percent plants infested. Heaviest infestation generally in north central area. (Somsen).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Light to heavy losses reported in late grain sorghum in Lea County. (N. M. Coop. Rpt.).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Ranged light to moderate in winter wheat fields in Adams County. (Hantsbarger).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - ALABAMA - Present in varying degrees in 55 corn fields surveyed in 11 west and southwest counties; 5-10 percent of cornstalks completely "hulled" out and falling in some fields, especially in new ground areas and several fields near old home sites. No damage noted to grain or ears. Downed cornstalks will affect harvest. (McQueen).

SOYBEAN CYST NEMATODE (Heterodera glycines) - Cysts recovered from fields in Pender, Currituck and Perquimans Counties, NORTH CAROLINA. Samples taken in Fayette County, TENNESSEE, revealed additional 1,035 acres infested. Cysts recovered from samples taken in Tunica County, MISSISSIPPI, adjacent to infested area in De Soto County. (PPC, South. Reg., Sept. Rpt.).

A SNAIL (Hawaiiia minuscula) - CALIFORNIA - Heavy on lawn and sidewalk locally in Napa, Napa County. (Cal. Coop. Rpt.).

FRUIT INSECTS

RED-HUMPED CATERPILLAR (Schizura concinna) - NORTH CAROLINA - Larvae feeding on apple trees in Henderson County. Det. by D. A. Mount. (Bennett).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - Moderate to heavy on pears at Bellingham, Whatcom County. All instars present; fruit blackened with honeydew. (Holland).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Extremely heavy on few apple trees in Lee County; some infestation noted on nearby pear trees. (Bagby).

ERIOPHYID MITES - CALIFORNIA - Eriophyes pyri and Eptimerus pyri heavy on pear trees in Healdsburg, Sonoma County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Medium in black walnuts in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Larvae found on pecan trees in Cooke County. (Turney). ALABAMA - Stewart pecans under trees examined at 3 locations in Tallapoosa County; 80 percent of nuts infested. (Barwood, Harris).

A CARPOSINID MOTH (Bondia comonana) - CALIFORNIA - Larvae medium on trunks of almonds in Turlock, Stanislaus County. (Cal. Coop. Rpt.).

BLACK PECAN APHID (Melanocallis caryfoliae) - TEXAS - This species and Monellia spp. occurring in large numbers on pecan in Cooke and McLennan Counties. (Turney, Meisch).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Damaging grapes in many home gardens in Maricopa County. (Ariz. Coop. Sur.).

GRAPE LEAF FOLDER (Desmia funeralis) - CALIFORNIA - Medium on wild grapevines in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

GRAPE WHITEFLY (Trialeurodes vittatus) - CALIFORNIA - Nymphs light on grape leaves in Redwood Valley, Mendocino County. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Three male specimens taken, one positive and 2 tentatively identified this species from Baja California; 4,806 trap inspections made of 1,615 traps on 840 properties in State. Total of 26,150 trees sprayed on 5,116 properties in Municipios Ensenada and Tijuana, Baja California. Fifth eradication insecticide application started in Ensenada and fourth well underway in Tijuana. (PPC, Mex. Reg., Sept. Rpt.). ARIZONA - Four adults taken in McPhail traps in Nogales area October 9. This makes total of 10 flies trapped in Nogales this year. (Ariz. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - MEXICO - Total of 4,865 trap inspections made of 2,460 traps in States of Chiapas, Veracruz, Tamaulipas, Baja California, Sonora and Sinaloa; all traps negative. (PPC, Mex. Reg., Sept. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - All citrus trees in Edinburg, Hidalgo County, inspected and found negative; surveys in commercial groves in county negative also. (PPC, South. Reg., Sept. Rpt.). MEXICO - Biological Control Zone - Inspection of 56,830 citrus trees on 247 properties in State of Tamaulipas showed 1,589 trees infested on 122 properties in 5 municipios. Light on 1,852 trees and medium on 7 trees. Biological control in area generally good. Reports indicate necessity of parasite liberations on 25 properties in 12 States and Territory of Baja California and possibility of parasite captures on 32 properties. In Apatzingan, Michoacan, and Rio Verde, San Luis Potosi, 92,200 specimens of a parasitic eulophid (Prospaltella opulenta) captured for release in Obregon, Sonora; Gutierrez Zamora, Veracruz; and Merida, Yucatan. Considerable improvement in biological control noted in State of Chiapas since June. Chemical Control Zone - No infestations found in States of Nuevo Leon and Sonora; 81,946 citrus trees on 318 properties inspected. (PPC, Mex. Reg., Sept. Rpt.).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Light on leaves and fruit of orange at 2 locations in Orange City, Volusia County. (Roberts, Oct. 3).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Heavy on citrus in Napa, Napa County. (Cal. Coop. Rpt.).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Larval increases found in oranges and related citrus in Pinal and Maricopa Counties. Damage heavy in some areas. (Ariz. Coop. Sur.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Infested leaves of sweet orange (Citrus sinensis) at 2 different locations in Electra, (Condo, Graham; Oct. 10), and at Weirsdale, Marion County (Graham, Oct. 8).

TRUCK CROP INSECTS

PSYLLIDS - COLORADO - Becoming heavy on remaining tomatoes in Fort Collins area, Larimer County. (Simpson).

POTATO TUBERWORM (Gnorimoschema operculella) - VIRGINIA - Infesting potato tubers locally in Louisa County. (Tarpley, Hunter).

HORNWORMS (Protoparce spp.) - MARYLAND - Larvae abundant on garden planting of tomatoes at Havre de Grace, Harford County. (U. Md., Ent. Dept.).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Larvae heavy on potato plantings in Arvin, Kern County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Light to moderate in lettuce fields in Yuma and Maricopa Counties, and in Red Rock area of Pinal County; ranged 30-40 per 100 plants in many fields. (Ariz. Coop. Sur.). FLORIDA - Infested 32 percent of 200 sampled cabbage plants at Sanford, Seminole County; damage minor; no other insects observed. (Desin).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - ALABAMA - Heavy on turnips in home garden areas of Tallapoosa, Coosa, Chambers, Autauga and Bibb Counties. (Barwood et al.).

CABBAGE APHID (Brevicoryne brassicae) - OHIO - Nymphs and adults heavy on cabbage plants in home garden in Morrow County. (Reese).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Heavy on green beans in Evans and Tattnall Counties. (Freeman, Oct. 12). MICHIGAN - Adults heavy on young volunteer beans in previously harvested Gratiot County field; feeding evidence indicates larvae completed development on these plants. (Janes). OHIO - All stages noted in home garden in Mahoning County, northeast; approximately 300 adults collected from lima and wax garden beans. Serious plant injury present. (Cibula).

COWPEA CURCULIO (Chalcodermus aeneus) - ALABAMA - During recent experiment in Lee County, 50-100 larvae collected for each 200 pods of field peas examined on uncontrolled plots. (Bass).

COWPEA APHID (Aphis craccivora) - ALABAMA - Numerous on cowpeas in Mobile, Bibb, Hale and other counties where plants remain green. (Seibels, Bolton, et al.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Heavy on string beans in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

MITES - NEW MEXICO - Problem on beans in home gardens in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt., Oct. 11).

GREEN PEACH APHID (Myzus persicae) - UTAH - Numerous on leaves of sugar beets at Smithfield, Cache County. (Knowlton).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Present in Yuma and Maricopa County lettuce fields; ranged 10-20 per 100 plants. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Light larval populations damaged heading lettuce in Pinal and Maricopa Counties. (Ariz. Coop. Sur.). COLORADO - Adults appearing in small numbers at lights in Larimer County. (Thatcher).

SQUASH BUG (Anasa tristis) - OHIO - Nymphs and adults noted sucking sap from leaves and stems of squash at roadside market in Sandusky County. (Lyon).

HORNED SQUASH BUG (Anasa armigera) - MARYLAND - Abundant on squash, gourd and pumpkin in garden at Havre de Grace, Harford County. (U. Md., Ent. Dept.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Adults medium on cantaloup plantings in Los Banos, Merced County. (Cal. Coop. Rpt.).

DRIED-FRUIT BEETLE (*Carpophilus hemipterus*) - CALIFORNIA - Medium on cantaloupe fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

AN EARWIG (*Euborellia* sp.) - CALIFORNIA - Medium on cantaloupe fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

A LEAF MINER FLY (*Liriomyza* sp.) - FLORIDA - Infested 64 percent of 300 celery plants at Sanford, Seminole County; damage minor. (Desin).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - In LOUISIANA, 21 newly infested properties found in previously known infested parishes. One newly infested property found in Perry County, MISSISSIPPI; seedbed cleaned and destroyed by burning; nearby plantings dusted. No infestations found in fields where dusting program followed in GEORGIA; unusually heavy infestation found in wild hosts in Albany, Dougherty County. Herbicide treatments continue in Charleston, Beaufort and Jasper Counties, SOUTH CAROLINA; heavy infestation of wild hosts on Sullivans Island, Charleston, dusted with good results. (PPC, South. Reg., Sept. Rpt.).

TOBACCO WIREWORM (*Conoderus vespertinus*) - NORTH CAROLINA - Only species collected from sweetpotato test plots near St. Paul, Robeson County; 8 larvae collected. (Mount).

MORNING-GLORY LEAF MINER (*Bedellia somnulentella*) - CALIFORNIA - Severely mining sweetpotato leaves in Madera, Madera County. (Cal. Coop. Rpt.).

AN APHID (*Aphis rubifolii*) - FLORIDA - Moderate on leaves of blackberry at Groveland, Lake County. (Henderson, Oct. 3).

DRYBERRY MITE (*Phyllocoptes gracilis*) - WASHINGTON - All stages attacking thornless blackberries in 12 backyard plants at Grandview, Yakima County. (Cone).

COTTON INSECTS

BOLLWORM (*Heliothis zea*) - TEXAS - Scattered, light to heavy infestations occurring in high and rolling plains areas in western part of State. Control about ceased as cotton rapidly reaching maturity. (Rummel). ARIZONA - Populations remain in top crop. Damage continues in top bolls in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

PINK BOLLWORM (*Pectinophora gossypiella*) - Heavy infestations apparent from lint-cleaner inspections in Gonzales and Lavaca Counties, TEXAS; infestation in Coyanosa area, Pecos County, still very heavy. Gin-trash and lint-cleaner inspections made in 11 central and southern OKLAHOMA counties; specimens recovered in all instances. Specimens recovered for first time this season in ARKANSAS in Columbia, Howard, Lawrence, Little River, Lonoke and Yell Counties. Specimens also recovered for first time this season in LOUISIANA in Caddo, De Soto, Rapides and Sabine Parishes. Lint-cleaner inspections made in 26 MISSISSIPPI counties negative. In GEORGIA, 2 gin-trash machines used; all inspections including lint cleaner negative. Limited lint-cleaner inspections in the CAROLINAS negative. (PPC, South. Reg., Sept. Rpt.). ARKANSAS - Recovered from gin trash in Woodruff County, for new county record. (Ark. Ins. Sur.). Inspections negative in PPC Western Region except in eastern ARIZONA and eastern NEW MEXICO. In latter State, bloom and boll inspections made. (PPC, West. Reg., Sept. Rpt.). ARIZONA - Heavy numbers still being found on lint cleaners and in cotton fields in Graham County. Adults taken in light traps near Florence, Pinal County. Exit holes found in stub cotton fields. (Ariz. Coop. Sur.). NEW MEXICO - Larvae found in waste collected at cotton gin in southern Dona Ana County, October 11. Infestation general in cotton fields in Eddy County; heaviest in southern part of county. Growers concerned with late buildup. (N. M. Coop. Rpt.).

COTTON LEAFWORM (*Alabama argillacea*) - GEORGIA - Heavy on cotton in Lowndes County. (Zeigler). ARKANSAS - Moths observed about lights at night in several areas of northeast and east central sections; no larvae found. Cotton too far advanced for damage to occur. (Ark. Ins. Sur.). NEW MEXICO - Larvae completely defoliated cotton plants where controls not used in several Lea County fields during late September and early October. (N. M. Coop. Rpt.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Large numbers still being found in fields where defoliation has not occurred in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CELERY LEAF TIER (*Udea rubigalis*) - CALIFORNIA - Larvae heavy in gin trash in Blythe, Riverside County. (Cal. Coop. Rpt.).

BOLL WEEVIL (*Anthonomus grandis*) - NEW MEXICO - None found during inspection of gin trash machines in Eddy and Dona Ana Counties. Pest has not yet been found in State. (N. M. Coop. Rpt.).

COTTON APHID (*Aphis gossypii*) - ARIZONA - Moderate populations causing some damage to top crop in Yuma County. (Ariz. Coop. Sur.).

MITES - NEW MEXICO - Several heavy infestations noted in Chaves and Eddy County cotton fields. (N. M. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - GEORGIA - Moderate on loblolly pine in Macon and Dooly Counties. (Brown, Roberts; Oct. 11). ALABAMA - Badly damaged 2 plantings of 5 to 7-year-old loblolly pines on approximately 140 acres near Atmore, Escambia County; 90-100 percent of tips killed back 1-7 inches. Other, smaller damaged areas noted in roadside plantings in Autauga and Tuscaloosa Counties. No larvae found, but large numbers of pupae present. (McQueen). Inspection of 30-acre evergreen nursery near Tanner-Williams community on October 3 showed 20-acre plot of young Scotch pines heavily infested with this pest, as well as *Ips* spp. and *Neodiprion lecontei*. Almost 100 percent of stand infested with these 3 species. Small yellow jackets (*Vespula vulgaris*) and large wasps (*Polistes rubiginosus*) swarming in large numbers about resinous pitch dripping from wounds, making inspection difficult. (Seibels, Bolton).

A PINE CONE MOTH (*Laspeyresia piperana*) - CALIFORNIA - Larvae heavy in cones of ponderosa pines in Bass Lake and Mammoth Pool areas of Sierra National Forest. An unspecified cone resin midge also present. (Mount, Cooley; USFS).

SPRUCE NEEDLE MINER (*Taniva albolineana*) - COLORADO - Causing some severe but scattered damage to blue spruce in Fort Collins, Larimer County. (Thatcher).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - NORTH CAROLINA - Continues active in epidemic area of Davidson County and surrounding counties. New spots appearing in Stokes, Rowan, Randolph, Guilford, Yadkin and Davidson Counties; active in several large spots in northeastern Vance and northwestern Warren Counties. Individual large spots also found in Gates and Nash Counties. (For. Pest Newsltr.).

WESTERN PINE BEETLE (*Dendroctonus brevicomis*) - CALIFORNIA - Local populations on private land causing fading and death in several Coulter pines in Corte Madera area, Cleveland National Forest. This is first report of damage in this area. (Cal. Coop. Rpt., USFS).

AN ENGRAVER BEETLE (*Ips avulsus*) - NORTH CAROLINA - Caused primary damage that resulted in death of numerous trees during late summer in Vance, Warren, Northampton and Gates Counties; attacked tops of trees. Larger *Ips* spp. and *Dendroctonus* spp. then entered lower parts of these trees. Up to 50 trees killed in many spots.

Activity ceased in most instances, except Dendroctonus spp. remain active in bases of trees. (Mount).

PINE APHIDS (Cinara spp.) - WISCONSIN - Cinara sp. very common on needles of red pine in western Dane and Sauk Counties. Alates present and eggs being laid October 16. (Wis. Ins. Sur.). VIRGINIA - C. strobi infesting white pine at a location in Gloucester County. (Tarpley, Goode; Oct. 7).

A GALL MIDGE (probably Contarinia coloradensis) - COLORADO - Larvae caused extensive damage to ponderosa pines. Damage observed from Colorado Springs, El Paso County, north to Colorado-Wyoming State line on trees of front range foothills. (Thatcher).

INTRODUCED PINE SAWFLY (Diprion similis) - MINNESOTA - Feeding by second generation continues in Brainerd-Crosby area, Crow Wing County; defoliation quite noticeable. Reported in Meeker and Pine Counties on large white pine; feeding damage very evident. (Minn. Ins. Rpt., Oct. 14).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Pupae heavy on trunks of oaks in San Leandro, Alameda County. (Cal. Coop. Rpt.).

FALL CANKERWORM (Alsophila pometaria) - NORTH DAKOTA - Female activity continues in Fargo area, Cass County; 187 and 123 females respectively, collected from trunks of 2 large elms on October 18. Eight males also collected. Moths taken below bands placed on trunks. (Post).

WHITE-LINED SPHINX (Celerio lineata) - CALIFORNIA - Heavy larval populations defoliating desert plants in Morongo Valley, Riverside County. Early rains caused plant growth at this time rather than in spring which is normal time of occurrence for species. (Cal. Coop. Rpt.).

A NOTODONTID MOTH (Datana sp.) - TEXAS - Larvae continue to cause considerable damage to oaks in Brazos County area. (Meisch).

GYPSY MOTH (Porthetria dispar) - A few male adults noted in flight in Rutland and Addison Counties, VERMONT, as late as September 21; nine males caught in experimental traps during week of September 23. About one-half of the traps removed in State. A few egg clusters found on nursery properties in southern New England; however, most egg clusters located on border areas some distance from nursery stock. Four egg masses removed from 2 shipments of collected nursery stock in CONNECTICUT; 16 shipments inspected. Traps removed in NEW YORK except in mountainous sections of northern area. Throughout NEW JERSEY, 259 moths collected from 154 traps located in Sussex, Passaic, Warren, Morris, Bergen and Somerset Counties. (PPC, East. Reg., Sept. Rpt.).

NORWAY-MAPLE APHID (Periphyllus lyropicetus) - OHIO - Heavy throughout several areas in State. On 4 maples observed in Wayne County (northeast), counts approximately 8-10 young nymphs per stem mother, with 20-25 stem mothers per leaf. Stem mothers moving by hundreds on limbs and trunks of these trees. (Lyon).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - CALIFORNIA - Adults medium on Chinese elms at Thousand Oaks, Ventura County. This is apparently first record of infestation in Ventura County. (Cal. Coop. Rpt.).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Larvae heavy on Proboscidea sp. in Mission San Jose, Alameda County. This species more prevalent this season than in past years; appears to be including more host plants in its range. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Moderate numbers appearing on shrubs in Brazos County. (Newton).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Larvae heavy on prostrate juniper, barberry and aralia in Oroville, Butte County. (Cal. Coop. Rpt.).

A LEAF TIER (Udea profundalis) - CALIFORNIA - Heavy on yard plants and shrubs in Dos Palos, Merced County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - DELAWARE - Adults still feeding on roses in an area of New Castle County. (Bray).

FULLER ROSE BEETLE (Pantomorus godmani) - GEORGIA - Caused moderate defoliation of rose and azalea in Emanuel County. (Ashley, Oct. 11).

A LEAF BEETLE (Disonycha limbicollis) - CALIFORNIA - Adults heavy on Polygonum coccineum at the West Nice Boat Landing, Nice, Lake County. (Cal. Coop. Rpt.).

TWO-STRIPED WALKINGSTICK (Anisomorpha buprestoides) - GEORGIA - Probably this species, caused almost complete defoliation of 50 percent of privet, aucuba and other plants in town of Stone Mountain, De Kalb County. (Vanderford, Oct. 11).

APHIDS - CALIFORNIA - Pterocomma smithiae adults and nymphs heavy on willows in Quincy, Plumas County. Macrosiphoniella sanborni heavy and damaging ornamentals in Woodland, Yolo County. (Cal. Coop. Rpt.). MICHIGAN - Various species continue numerous on dogwood, chrysanthemum and other ornamentals in Ingham County. (Wells). OHIO - Undetermined species heavy on most willows throughout northwest area. (Bell, Lyon).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Found on the following new hosts at Barberville, Volusia County: Confederate-rose (Hibiscus mutabilis), golden-rain-tree (Koelreuteria sp.), grape (Vitis sp.), ivy (Hedera sp.), loquat (Eriobotrya japonica), and arrowroot (Maranta arundinacea). Most scales males; usually found on upper surface of leaf along midrib. Approximately 50 percent of scales parasitized. Females found on confederate-rose and grape. Also found infesting camellia, firethorn, ligustrum, and orange. (Roberts, Oct. 11).

Coccids in Florida - Fiorinia theae severe on leaves of Camellia sasanqua at Wauchula, Hardee County (Lamb, Oct. 9); Ceroplastes ceriferus moderate on stem and leaves of Podocarpus nagi at Apopka, Orange County (Musgrove, Sept. 27); Ceroplastes floridensis moderate to severe on Pyracantha sp. at Eau Gallie, Brevard County (Levan, Sept. 18).

CYCLAMEN MITE (Steneotarsonemus pallidus) - CALIFORNIA - Light on household African-violets and in a commercial establishment in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (Aculus massalongoi) - WASHINGTON - Seriously bronzing lilac foliage at Pullman, Whitman County. Det. by H. H. Keifer. (Telford, Oct. 11).

INSECTS AFFECTING MAN AND ANIMALS

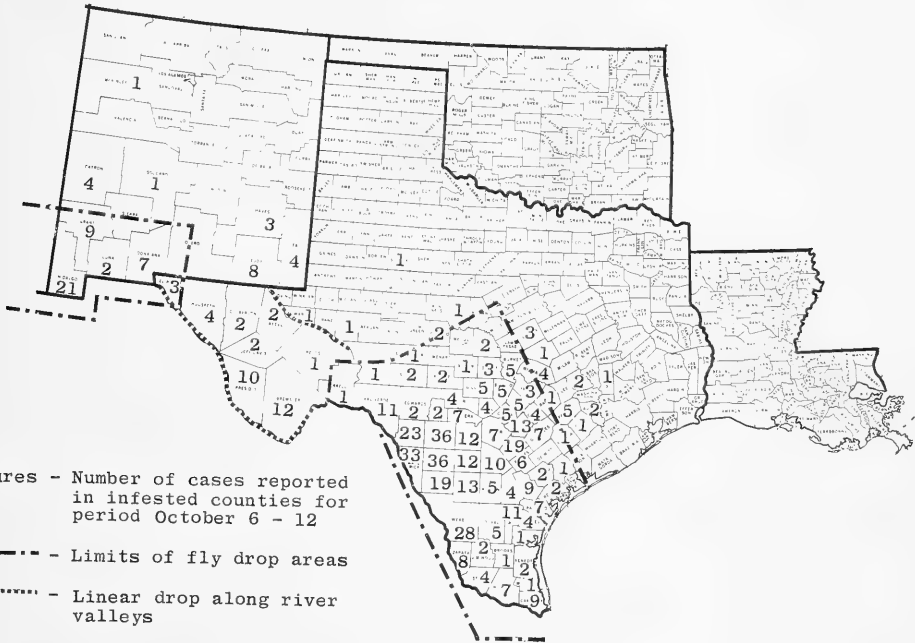
MOSQUITOES - UTAH - Annoying in some fields in Lewiston-Cornish area, Cache County. (Knowlton). NORTH DAKOTA - Culiseta inornata active during warm nights; some attempts at biting observed. Culex tarsalis and Culex pipiens also active. (Noetzel). TEXAS - Unspecified species annoying residents in Cooke and Brazos Counties. (Turney, Newton). ALABAMA - Mosquitoes apparently much lighter than most years, except in coastal and lake areas of State; however, populations appear to be considerably increased in east central counties. (Barwood).

HORN FLY (Haematobia irritans) - GEORGIA - Averaged 137 per animal on beef cows in Spalding County. (Roberts, Oct. 11).

HOUSE FLY (Musca domestica) - COLORADO - Large numbers gathering in windows causing concern among householders. (Thatcher). ALABAMA - Appearing in increased numbers in Tallapoosa County, especially around fishing areas of lakes. (Barwood).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period October 6 - 12, a total of 511 infestations (including one of unknown origin) was reported from 79 counties in TEXAS, and 64 infestations from 10 counties in NEW MEXICO. A total of 105,545,050 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period October 6 - 12

- - - - - Limits of fly drop areas
- Linear drop along river valleys

CATTLE GRUBS (Hypoderma spp.) - ALABAMA - Approximately 50 herds noted without close examination in 11 west and southwest counties; no grubs found in backs of animals. Should appear in mid-November and December. (Ledbetter).

FACE FLY (Musca autumnalis) - NORTH CAROLINA - Very numerous in home in Ashe County; homeowner has already killed sufficient number of flies to fill 2 half-gallon jars. (Gardner, Axtell).

MUSCOID FLIES - DELAWARE - Several species causing considerable annoyance in New Castle County by entering homes and garages in large numbers. (Lake, Burbutis).

PUSS CATERPILLAR (Megalopyge opercularis) - ARIZONA - Larvae annoying homeowners in Santa Cruz County. (Ariz. Coop. Sur.). NORTH CAROLINA - Larva "stung" woman in Burke County. (Speas, Robertson).

VESPID WASPS - UTAH - Yellow jackets and other species annoying in several areas in Provo Canyon, Utah County. (Knowlton). ALABAMA - Vespa spp. appear to be more of a problem than usual. (Pearson, Barwood, McGlohon, et al.).

TROPICAL RAT MITE (Ornithonyssus bacoti) - CALIFORNIA - Heavy in residence in Redding, Shasta County; causing severe reactions by biting children. Also infesting warehouse in Ryer Island, Sacramento County. (Cal. Coop. Rpt.).

BROWN DOG TICK (Rhipicephalus sanguineus) - DELAWARE - Infestations reported in several New Castle County homes. (MacCreary).

BLACK WIDOW SPIDER (Latrodectus mactans) - UTAH - Reported in and about homes in several communities in Salt Lake, Davis, Utah and Weber Counties. (Knowlton).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Entering homes and causing nuisance at several localities in Prince Georges County. (U. Md., Ent. Dept.). VIRGINIA - Common in yards and creating nuisance around homes in Pulaski, Pulaski County (Oct. 4); Lawrenceville, Brunswick County (Sept. 30); Blackstone, Nottaway County (Oct. 2); Lynchburg, Campbell County (Oct. 7); and Blacksburg, Montgomery County (Oct. 10). (Tarpley, Derting, Basham, Schilling, Rowell). NORTH CAROLINA - Annoying to homeowner in Vance County. (Young, Woodlief, Robertson). MICHIGAN - Adults and nymphs continue annoying to homeowners in many localities in Lower Peninsula counties. (Dowdy). NORTH DAKOTA - Adults and nymphs becoming nuisance around homes over State. (N. D. Ins. Sur.). UTAH - Continues a problem in many localities over State. (Knowlton).

A COREID BUG (Leptocoris rubrolineatus) - NEVADA - Nymphs and adults congregating on trees and homes in Reno-Sparks area, Washoe County. (Bechtel).

AN EARWIG (probably Labidura riparia) - GEORGIA - Heavy in homes in Dublin, Laurens County. (Ashley, Oct. 9).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEVADA - Adults entering homes and other buildings in west central counties. (Coop. Rpt.).

CIGARETTE BEETLE (Lasioderma serricorne) - DELAWARE - Adults heavy in New Castle County home. (Connell).

BLACK CARPET BEETLE (Attagenus piceus) - DELAWARE - Larvae present in a New Castle County home. (MacCreary).

A SPRINGTAIL (Drepanura knaba) - UTAH - Numerous in several rooms of home at Bountiful, Davis County. Det by D. L. Wray. (Knowlton).

A MILLIPED - NORTH DAKOTA - An undetermined species being commonly observed and reported a nuisance around homes in New England area, Hettinger County. (N. D. Ins. Sur.).

TERMITES - VIRGINIA - Present in home in Farmville, Prince Edward County (Tarpley, Dudley, Oct. 10). UTAH - Unspecified subterranean species infesting 2 homes with attached garages at Logan, Cache County. (Knowlton).

STORED-PRODUCT INSECTS

Stored Grain Insects in Wyoming - Adults of GRANARY WEEVIL (Sitophilus granarius), RED FLOUR BEETLE (Tribolium castaneum) and CADELLE (Tenebroides mauritanicus) each found in one of 9 granaries inspected in Laramie County near Pine Bluffs; adults of SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) found in 2 of these same 9 granaries. (Marks).

RICE WEEVIL (Sitophilus oryzae) - NORTH CAROLINA - Problem in rye and wheat bins in McDowell County. (Love, Robertson).

MISCELLANEOUS INSECTS

WHITE-FRINGED BEETLES (Graphognathus spp.) - Surveys made in 20 FLORIDA counties; found for the first time in Liberty County. In GEORGIA, infestations found for the first time in Forsyth County, but this and previously reported infestation in Thomas County not large. Delimiting surveys completed in Madison, Morgan and Tuscaloosa Counties, ALABAMA, with no significant finds made. Found for the first time in Itawamba and Prentiss Counties, MISSISSIPPI; detection surveys made in 14 counties with heavy populations noted in several locations in southern part of State. Foliage treatment applied on all infested acreage in ARKANSAS during month; extensions of infested areas found in Craighead, Greene and Poinsett Counties. Inspection of 17 TENNESSEE counties revealed no increase in infested area except in Shelby and Davidson Counties. Emergence of adults 2 and 3 years after treatment causing considerable concern in Tennessee and other States. Treatment completed in McCormick County, SOUTH CAROLINA; some extensions of infestations found in other counties. Infestations found for the first time at Newton, Catawba County, and near Kings Mountain, Cleveland County, NORTH CAROLINA. Extensions of known infestations found in several other counties. (PPC, South. Reg., Sept. Rpt.). Collected for the first time in Virginia Beach, VIRGINIA (formerly Princess Anne County). (PPC, East. Reg., Sept. Rpt.).

JAPANESE BEETLE (Popillia japonica) - Trapping program completed in MICHIGAN; traps removed. In Detroit area, Wayne County, 161 acres treated; 7 new locations found in Detroit during month; additional specimens found Battle Creek area, Calhoun County, which increased size of infested area; 5 locations found infested in Washtenaw County; 3 adults collected in Grand Rapids, Kent County, and 8 new locations found in Monroe and Lenawee Counties. In ILLINOIS, one specimen collected for the first time in Clay County at Flora. Approximately 700 acres spot treated in Chicago, Cook County. (PPC, Cent. Reg., Sept. Rpt.). OHIO - Low grub population present throughout northeastern area; primarily second and third instars. Many eggs and larvae failed to survive due to continued drought. Grub counts approximately one-half those of 1962. (Polivka).

LARDER BEETLE (Dermestes lardarius) - COLORADO - Infested honey-house in Crowley County. (Hantsbarger).

A JAPANESE WEEVIL (Calomycterus setarius) - WISCONSIN - Few noted in field of alfalfa in Dane County. (Wis. Ins. Sur.).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae heavy on leaves of desert annuals in Morongo Valley, Riverside County. (Cal. Coop. Rpt.).

SAY STINK BUG (Chlorochroa sayi) - CALIFORNIA - Nymphs and adults medium on Russian-thistle stands in Riverside, Riverside County. (Cal. Coop. Rpt.).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Adults medium on weeds in Lakeport, Lake County. (Cal. Coop. Rpt.).

A SOLDIER FLY (Hermetia illucens) - CALIFORNIA - Heavy in earthworm beds under rabbit hutches; causing concern over loss of worms and eggs. (Cal. Coop. Rpt.).

A VINEGAR FLY (Drosophila sp.) - OHIO - Heavy on overripe fruit and decaying vegetation at roadside markets and in homes throughout State. (Lyon).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Reported for first time in Galveston County, TEXAS. New areas of infestation found in Rapides and West Carroll Parishes, LOUISIANA; appraisal surveys in St. Landry and West Baton Rouge Parishes made, with mounds treated when found. Surveys in ARKANSAS revealed few

mounds in Union and Ashley Counties in vicinity of known infestations. Treatments completed at Hazelhurst, Copiah County, and McComb, Pike County, MISSISSIPPI; appraisal surveys revealed no infestations on 3,000 acres in Covington, Rankin and Smith Counties. Surveys and spot treatment continued in peripheral areas of ALABAMA; no large infestations found. Treatment completed at Robins Air Force Base, Houston County, GEORGIA; appraisal surveys in Chatham and Effingham Counties negative. Extensions of infestations found in Horry, Jasper and Richland Counties, SOUTH CAROLINA. Treatment completed at Marine Air Facility at Jacksonville, Onslow County, NORTH CAROLINA; extension of infested area found in county. Negative inspections made in 9 TENNESSEE counties. (PPC, South. Reg., Sept. Rpt.).

CORRECTIONS

CEIR 13(42):1244 - NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - KANSAS - Should read Counts of 2-3 infested tips per tree noted on Scotch pine...

CEIR 13(42):1246 - AN ERIOPHYID MITE (*Eriophyes loewi*) - WASHINGTON - Delete note.

ADDITIONAL NOTES

OKLAHOMA - Light populations of APPLE GRAIN APHID (*Rhopalosiphum fitchii*) noted in small grains in Payne and Logan Counties. This is first record for this season and it is about 15 days earlier than the November 1 average based on survey records of past 8 years. Light populations of ENGLISH GRAIN APHID (*Macrosiphum avenae*) noted for first time this season in early planted small grains in Payne and Logan Counties. This is almost one month earlier than average first occurrence of November 13 based on survey record of past 5 years. SPOTTED ALFALFA APHID (*Therioaphis maculata*) populations continue at about same level as last week in Perkins area on seedling alfalfa; ranged 50-75 per square foot. Counts on established stands ranged 350-500 per 10 sweeps in Payne County with lower counts of 25 per 10 sweeps present in Logan County. Counts of 70 per 10 sweeps noted in Tillman County; moderate infestations in Caddo County (west central). Light, scattered counts of CORN EARWORM (*Heliothis zea*) ranged 0-4 per 10 sweeps on alfalfa in Payne and Logan Counties. Heavy populations of GARDEN WEBWORM (*Loxostege similalis*) on alfalfa in Cotton County (southwest) with light to moderate infestations reported in Washita County (west central). None observed in fields checked in Payne and Logan Counties (north central). FALL ARMYWORM (*Laphygma frugiperda*) heavy on seedling alfalfa in Caddo County; some activity also reported on small grains in Kingfisher County. Several species of GRASSHOPPERS continue causing light damage to small grains around field margins. PINK BOLLWORM (*Pectinophora gossypiella*) more general throughout State than in past 2 seasons. Gin-trash inspections continued positive in counties surveyed; lint-cleaner inspections positive in Tillman County. Heavy populations of WALKINGSTICK (*Diaperomera femorata*) defoliating oaks on Ouachita National Forest area, Le Flore County, northward to Ottawa County. Damage to elm and pecan trees by TWIG GIRDLER (*Oncideres cingulata*) continues from Ottawa County (northeast) to Bryan County (south central). Several species of APHIDS present on variety of ornamentals in Stillwater area, Payne County. HORN FLY (*Haematobia irritans*) populations down appreciably in Stillwater area from last week; ranged 50-500 per animal in Bryan County. HOUSE FLY (*Musca domestica*) continues annoying around homes and public buildings with onset of cooler weather. (Okla. Coop. Sur.).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|---|---|----|--|--------|---|
| ATTACKING | <u>Grain sorghum</u> (Commodity) | IN | <u>Oklahoma</u> (State or District) | DURING | <u>1962</u> (Year) |
| Corn earworm, sorghum webworm, fall armyworm, corn leaf aphid, southwestern corn borer | | | | | |
| A. | Pest or pest complex | | | No. | <u>658,000 (grain) (71%)</u> <u>266,000 (forage) (29%)</u> |
| B. | Number of <u>acres</u> ^a produced (From CRS) | | | Units/ | <u>30.0 bu. (grain)</u> <u>8.5 ton (forage)</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | | | \$/ | <u>1.01 bu. (grain)</u> <u>16.50 ton (forage)</u> |
| D. | Price ^b per unit (bu./ton) ^c (From CRS) | | | No. | <u>317,520 (grain & forage)</u> |
| E. | <u>Acres</u> ^a needing control | | | No. | <u>60,330 (grain & forage)</u> |
| F. | <u>Acres</u> ^a treated | | | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | | | % | <u>29 (grain)</u> <u>23 (forage)</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | | | Units/ | <u>8.7 bu. (grain)</u> <u>1.955 ton (forage)</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | | | \$/ | <u>8.79 (grain)</u> <u>32.18 (forage)</u> |
| K. | Loss in quality, \$ per <u>--</u> ^a | | | \$/ | <u>---</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | | | Units | <u>1,588,664 bu. (grain)</u> <u>145,813 ton (forage)</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | | | \$/ | <u>2.58</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | | | \$ | <u>155,650</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | | | \$ | <u>1,605,098 (grain)</u> <u>2,400,145 (forage)</u> |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | | | \$ | <u>---</u> |
| Q. | Combined control cost and losses, N + O + P | | | \$ | <u>4,160,893</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz
Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat IN Oklahoma DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|----|---|---|----------------------|
| A. | Pest or pest complex | <u>Greenbug, cutworms, mites, Hessian fly</u> | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>3,787,000</u> |
| C. | Average yield per <u>acres</u> ^a (From CRS) | Units/ | <u>19.0 bu.</u> |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>2.05</u> |
| E. | <u>Acres</u> ^a needing control | No. | <u>1,067,935</u> |
| F. | <u>Acres</u> ^a treated | No. | <u>259,500</u> |
| G. | Reduction due to not treating where needed: | | |
| H. | Loss in yield, percent | % | <u>22</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>4.18 bu.</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>8.57</u> |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>--</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>3,379,258 bu.</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>2.04</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>529,380</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>6,928,288</u> |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>--</u> |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>7,457,668</u> |

Comment: Although control costs were reduced over last year, yield loss up due to higher price per bu. (+23/bu.).

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa IN Oklahoma DURING 1962
(Commodity) (State or District) (Year)

| | | |
|---|---|---------------------|
| A. Pest or pest complex | <u>Pea aphid, corn earworm, spotted alfalfa aphid, webworms</u> | |
| B. Number of <u>acres</u> ^a produced (From CRS) | <u>No.</u> | <u>418,000</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | <u>Units/</u> | <u>2.6 ton</u> |
| D. Price ^b per unit (<u>ton</u>) ^c (From CRS) | <u>\$/</u> | <u>20.50</u> |
| E. <u>Acres</u> ^a needing control | <u>No.</u> | <u>238,260</u> |
| F. <u>Acres</u> ^a treated | <u>No.</u> | <u>66,710</u> |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | <u>%</u> | <u>33</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | <u>Units/</u> | <u>.86 ton</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | <u>\$/</u> | <u>17.63</u> |
| K. Loss in quality, \$ per <u>--</u> ^a | <u>\$/</u> | <u>--</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | <u>Units</u> | <u>147,533 ton</u> |
| M. Control cost, \$ per <u>acre</u> ^a | <u>\$/</u> | <u>3.61</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | <u>\$</u> | <u>240,823</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | <u>\$</u> | <u>3,024,426.50</u> |
| P. Quality loss for all <u>--</u> ^a , (E-F) x K | <u>\$</u> | <u>--</u> |
| Q. Combined control cost and losses, N + O + P | <u>\$</u> | <u>3,265,249.50</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton IN Oklahoma DURING 1962
(Commodity) (State or District) (Year)

| | |
|--|---|
| A. Pest or pest complex | <u>Boll weevil, bollworm, cotton fleahopper, aphids, thrips</u> |
| B. Number of <u>acres</u> ^a produced (From CRS) | <u>No. 705,000 planted, 645,000 harvested 1/</u> |
| C. Average yield per <u>acre</u> ^a (From CRS) | <u>Units/ 274 lb. 1/</u> |
| D. Price ^b per unit (1b.) ^c (From CRS) | <u>\$/ .294 lb. 2/</u> |
| E. <u>Acres</u> ^a needing control | <u>No. 585,150</u> |
| F. <u>Acres</u> ^a treated | <u>No. 374,500</u> |
| G. Reduction due to not treating where needed: | |
| H. Loss in yield, percent | <u>% 31</u> |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | <u>Units/ 85 lbs.</u> |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | <u>\$/ 25.00</u> |
| K. Loss in quality, \$ per <u>--</u> ^a | <u>\$/ --</u> |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | <u>Units 17,905,250 lbs.</u> |
| M. Control cost, \$ per <u>acre</u> ^a | <u>\$/ 13.55</u> |
| N. Control cost for all <u>acres</u> ^a , F x M | <u>\$ 5,074,475</u> |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | <u>\$ 5,266,250</u> |
| P. Quality loss for all <u>--</u> ^a , (E-F) x K | <u>\$ --</u> |
| Q. Combined control cost and losses, N + O + P | <u>\$ 10,340,725</u> |

Comment: 1/ Based on 1961 figures.

2/ Based on 1962 figures.

Entries in B & C not available from CRS at time losses computed.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Beef (Commodity) | IN | Oklahoma (State or District) | DURING | 1962 (Year) |
|-----------|--|---|---------------------------------|--------|----------------|
| A. | Pest or pest complex | <u>Horn fly, ticks, horse flies, stable fly, lice</u> | | | |
| B. | Number of <u>head</u> ^a produced (From CRS) | No. | <u>3,764,000</u> | | |
| C. | Average yield per <u>head</u> ^a (From CRS) | Units/ | <u>372 lbs.</u> | | |
| D. | Price ^b per unit (cwt.) ^c (From CRS) | \$/ | <u>20.70</u> | | |
| E. | <u>Head</u> ^a needing control | No. | <u>3,387,600</u> | | |
| F. | <u>Head</u> ^a treated | No. | <u>2,100,300</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>14</u> | | |
| I. | Loss in yield, units per <u>head</u> ^a , C x H | Units/ | <u>52 lbs.</u> | | |
| J. | Loss in yield, \$ per <u>head</u> ^a , D x I | \$/ | <u>10.75</u> | | |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>--</u> | | |
| L. | Yield loss for all <u>head</u> ^a , (E-F) x I | Units | <u>66,939,600 lbs.</u> | | |
| M. | Control cost, \$ per <u>head</u> ^a | \$/ | <u>1.59</u> | | |
| N. | Control cost for all <u>head</u> ^a , F x M | \$ | <u>3,339,477</u> | | |
| O. | Yield loss for all <u>head</u> ^a , (E-F) x J | \$ | <u>13,838,475</u> | | |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>--</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>17,177,952</u> | | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz

Date 5-20-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING | Dairy cows (Commodity) | IN | Oklahoma (State or District) | DURING | 1962 (Year) |
|-----------|--|-----------------------------------|---------------------------------|--------|----------------|
| A. | Pest or pest complex | Horn fly, stable fly, lice, ticks | | | |
| B. | Number of head ^a produced (From CRS) | No. | 264,000 | | |
| C. | Average yield per head ^a (From CRS) | Units/ | 6,250 lbs. | | |
| D. | Price ^b per unit (cwt.) ^c (From CRS) | \$/ | 4.21 | | |
| E. | Head ^a needing control | No. | 245,500 | | |
| F. | Head ^a treated | No. | 191,100 | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | 16 | | |
| I. | Loss in yield, units per head ^a , C x H | Units/ | 10 cwt. | | |
| J. | Loss in yield, \$ per head ^a , D x I | \$/ | 42.10 | | |
| K. | Loss in quality, \$ per -- ^a | \$/ | -- | | |
| L. | Yield loss for all head ^a , (E-F) x I | Units | 544,000 cwt. | | |
| M. | Control cost, \$ per head ^a | \$/ | 1.99 | | |
| N. | Control cost for all head ^a , F x M | \$ | 380,290 | | |
| O. | Yield loss for all head ^a , (E-F) x J | \$ | 2,290,240 | | |
| P. | Quality loss for all -- ^a , (E-F) x K | \$ | -- | | |
| Q. | Combined control cost and losses, N + O + P | \$ | 2,670,530 | | |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by Sidney E. Kunz

Date 5-20-63

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana
(Indiana Fall Corn Insect Survey, 1962)^{a/}

Prepared by R. T. Everly

| Area | Counties | Fields | Acres planted in '000s | Yield in '000s | Total loss ^{b/} | | Av. loss per acre |
|---------|----------|--------|------------------------|----------------|--------------------------|------------|-------------------|
| | | | | | Bushels | Dollars | |
| | | | Acres | Bushels | Bushels ^{c/} | Dollars | Dollars |
| NNW | 7 | 16 | 507.7 | 42,548.0 | 2,986,870 | 2,688,183 | 5.29 |
| NNC | 5 | 11 | 321.3 | 23,091.1 | 1,094,518 | 985,066 | 3.06 |
| NNE | 6 | 10 | 272.3 | 18,900.8 | 661,528 | 595,375 | 2.19 |
| NW | 6 | 15 | 478.8 | 43,326.1 | 1,078,989 | 971,090 | 2.03 |
| NC | 8 | 10 | 542.6 | 49,243.5 | 497,359 | 447,623 | .82 |
| NE | 10 | 19 | 505.4 | 41,453.9 | 505,738 | 455,164 | .90 |
| SW | 8 | 13 | 295.9 | 24,985.9 | 2,723,463 | 2,451,117 | 8.28 |
| SC | 7 | 11 | 216.3 | 17,913.5 | 1,954,363 | 1,758,927 | 8.13 |
| SE | 9 | 16 | 484.8 | 42,718.1 | 2,563,513 | 2,307,162 | 4.76 |
| SSW | 10 | 17 | 425.0 | 31,192.7 | 4,064,409 | 3,657,968 | 8.61 |
| SSC | 7 | 10 | 136.1 | 8,991.6 | 330,891 | 297,802 | 2.19 |
| SSE | 9 | 10 | 111.8 | 8,070.8 | 309,919 | 278,927 | 2.49 |
| NN | 18 | 37 | 1,101.3 | 84,539.9 | 4,742,916 | 4,268,624 | 3.88 |
| N | 24 | 49 | 1,526.8 | 134,023.5 | 2,082,086 | 1,873,877 | 1.23 |
| S | 24 | 40 | 997.0 | 85,617.5 | 7,241,339 | 6,517,205 | 6.54 |
| SS | 26 | 37 | 672.9 | 48,255.1 | 4,705,219 | 4,234,697 | 6.29 |
| West | 31 | 61 | 1,707.4 | 142,052.7 | 10,853,731 | 9,768,358 | 5.72 |
| Central | 27 | 47 | 1,216.3 | 99,239.7 | 3,877,131 | 3,489,418 | 2.87 |
| East | 34 | 55 | 1,374.3 | 111,143.6 | 4,040,698 | 3,636,628 | 2.65 |
| State | 92 | 163 | 4,298.0 | 352,436.0 | 18,771,560 | 16,894,404 | 3.93 |

^{a/} County acreages and yields supplied by Dr. R. E. Straszheim (U.S.D.A.), Department of Agricultural Statistics.
^{b/} Based on average prices of a bushel of corn on November 15 and December 17, 1962 (\$.90 per bushel).
^{c/} See following page for breakdown of total bushel loss due to birds, European corn borer, corn earworm, corn leaf aphid and Angoumois grain moth.

Losses in Yield of Corn Grown for Grain Due to Insects and Birds in Indiana (continued)

Losses due to

| Area | Birds | | | European corn borer | | | Corn earworm | | | Corn leaf aphid | | | Angoumois grain moth | | |
|---------|-------|-----------|------|---------------------|------|-----------|--------------|------------|------|-----------------|------|---------|----------------------|---------|--|
| | Pct. | Bushels | Pct. | Bushels | Pct. | Bushels | Pct. | Bushels | Pct. | Bushels | Pct. | Bushels | Pct. | Bushels | |
| NNW | .02 | 8,510 | 2.6 | 1,106,248 | .3 | 127,644 | 4.1 | 1,744,468 | 0. | 0 | | | | | |
| NNC | .04 | 9,236 | .7 | 161,638 | .1 | 23,091 | 3.9 | 900,553 | 0. | 0 | | | | | |
| NNE | .60 | 113,405 | .4 | 75,603 | .2 | 37,802 | 2.3 | 434,718 | 0. | 0 | | | | | |
| NW | .29 | 125,646 | 1.0 | 433,261 | .2 | 86,652 | 1.0 | 433,261 | 0. | 0 | | | | | |
| NC | .01 | 4,924 | .5 | 246,218 | .2 | 98,487 | .3 | 147,730 | 0. | 0 | | | | | |
| NE | 0. | 0 | .6 | 248,723 | .1 | 41,454 | .5 | 207,270 | .02 | 8,291 | | | | | |
| SW | 0. | 0 | 1.0 | 249,859 | 1.2 | 299,831 | 8.7 | 2,173,773 | 0. | 0 | | | | | |
| SC | 1.00 | 179,135 | .7 | 125,394 | 1.3 | 232,876 | 7.9 | 1,415,665 | .01 | 1,791 | | | | | |
| SE | .20 | 85,436 | .8 | 341,745 | .1 | 42,718 | 4.9 | 2,093,187 | 0. | 427 | | | | | |
| SSW | 1.12 | 349,358 | .9 | 280,734 | 2.0 | 623,854 | 8.8 | 2,744,958 | .21 | 65,505 | | | | | |
| SSC | .70 | 62,941 | .9 | 80,924 | 1.7 | 152,857 | 0. | 0 | .38 | 34,168 | | | | | |
| SSE | 1.70 | 137,204 | .2 | 16,142 | .8 | 64,566 | .9 | 72,637 | .24 | 19,370 | | | | | |
| --- -- | | | | | | | | | | | | | | | |
| NN | .22 | 131,151 | 1.3 | 1,343,489 | .2 | 188,537 | 3.8 | 3,079,739 | 0. | 0 | | | | | |
| N | .10 | 130,570 | .7 | 928,202 | .2 | 226,593 | .6 | 788,261 | .01 | 8,291 | | | | | |
| S | .40 | 264,571 | .8 | 716,998 | .9 | 575,425 | 7.2 | 5,682,625 | 0. | 2,218 | | | | | |
| SS | 1.17 | 549,503 | .7 | 377,800 | 1.5 | 841,277 | 3.2 | 2,817,595 | .36 | 119,043 | | | | | |
| West | .36 | 483,514 | 1.4 | 2,070,102 | .9 | 1,137,981 | 5.6 | 7,096,460 | .05 | 65,505 | | | | | |
| Central | .44 | 256,236 | .7 | 614,174 | .8 | 507,311 | 3.0 | 2,463,948 | .16 | 35,959 | | | | | |
| East | .62 | 336,045 | .5 | 682,213 | .3 | 186,540 | 2.2 | 2,807,812 | .06 | 28,088 | | | | | |
| State | .47 | 1,075,795 | .8 | 3,366,489 | .7 | 1,831,832 | 3.6 | 12,368,220 | .09 | 129,552 | | | | | |

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

INDIAN SUGARCANE LEAFHOPPER (*Pyrilla perpusilla* (Walker))^{1/}

Economic Importance: This fulgorid planthopper is one of the most destructive pests of sugarcane and corn in Pakistan and India, and is common in Afghanistan. Adults and nymphs suck plant juices from the underside of the leaves and retard plant growth if not checked. The pest is capable of reducing the sucrose content of the juice of sugarcane by about 1.5 to 2 percent or even more. Honeydew is also sometimes a problem. In addition, cattle refuse to feed on sugarcane, corn and sorghum damaged by this pest. In 1953-1954, a scheme costing 1,071,000 rupees was organized to control the pest in the Peshawar Region of Pakistan. Seventy thousand areas of sugarcane and fifty thousand acres of corn were treated that year, which resulted in a saving of approximately 6 million rupees. Recently, Fennah (4) made a study of the species of the genus *Pyrilla* Stål found in Ceylon and India. He concluded that two polytypic species are present: *P. perpusilla* (Walker), widespread in India and now recognized as extending to Ceylon and to Thailand, and *P. aberrans* (Kirby) (strict sense), formerly regarded as being confined to Ceylon, but now found to occur also in south India. Fennah described and named 10 geographical subspecies of the former and 5 of the latter. Included is *P. perpusilla pusana* (Distant) which is represented by 3 color forms, each predominant in the population at a particular period of the year.



Indian Sugarcane Leafhoppers
on Sugarcane Leaf

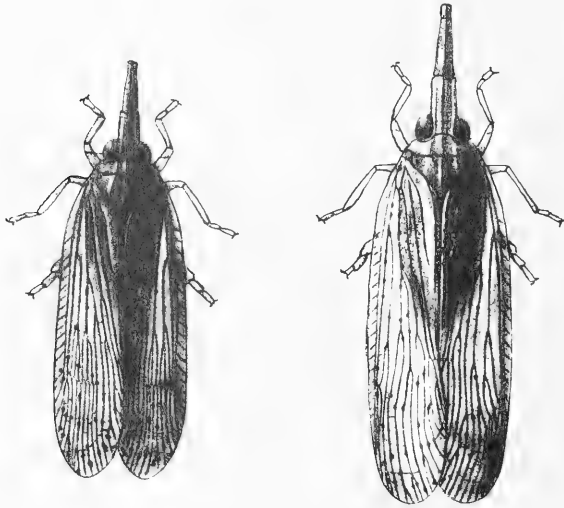
Hosts: Sugarcane, wheat, barley, oats, sorghum, corn, Sudan grass and other native and cultivated grasses.

Distribution: India, Pakistan, Afghanistan, Ceylon and east to Thailand.

Life History and Habits: Females lay up to 773 eggs. They are laid in clusters on the host plants and are covered with whitish, fluffy material. Eggs hatch in 7-12 days during April-October and 20-41 days during November-March. There are 5 nymphal stages. The nymphal stage occupies 24-65 days during April-September and 78-208 days during October-March. The pest has 3-4 broods a year; the last two (when present) overlapping each other. Adults are most common during late March. Eggs are laid on sprouting sugarcane in April. From May to December, all stages of the pest are encountered, but from January to the latter part of March, nymphs predominate. When sugarcane is harvested, the pests migrate to other susceptible crops such as wheat, barley, oats and other grasses. When the small grains are harvested, they migrate to sugarcane, corn and sorghum.

^{1/} Also called sugarcane pyrilla
Homoptera:Fulgoroidea:Lophopidae

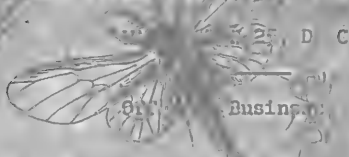
Description: ADULT (P. perpusilla perpusilla (Wlk.)) - Body and legs ochraceous, paler beneath than above; termina yellowish-white, semi-opaque, apical area and outer claval margin speckled with minute black spots; wings pale hyaline; dorsal ridge to cephalic process much less prominent in front of the central transverse ridge than behind it. Length (excl. tegm.) 9 mm. or three-eighths of an inch. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.)



Male and Female of Indian Sugarcane Leafhopper (Pyrrilla perpusilla (Walker))

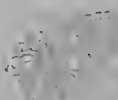
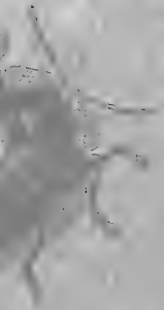
Major References: 1. Abbas, H. M. and Hasnain, A. Z. 1958. Nat. Agr. Chem. News and Pesticide Rev. 16(4):11-12, 18 pp. 2. Aggarwala, D. 1943. The Fungus Diseases and Insect-Pests of Sugarcane. pp. 53-58, Bihar. 3. Distant, W. L. 1906. The Fauna of British India--Rhynchota. Vol. 3. Heteroptera-Homoptera, 503 pp. 4. Fennah, R. G. 1963. Bul. Ent. Res. 53(4):715-735. 5. Rahman, K. A., and Nath, R. 1940. Bul. Ent. Res. 31(2):179-190.

Figures: Male and female from Pruthi, H. S. 1937. Ind. J. of Agr. Sci. 7(3): 511-512, plate 44.



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AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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Survey and Detection Operations
Plant Pest Control Division
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Hyattsville, Maryland 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

PEA APHID causing severe injury to alfalfa in many southeast Ohio fields; locally heavy in areas of Maryland, Delaware and Wisconsin, and building up in Dona Ana County, New Mexico. Large SPOTTED ALFALFA APHID populations depositing heavy amounts of honeydew on alfalfa in Wagoner, Muskogee and Sequoyah Counties, Oklahoma. Occasional specimens of GREENBUG found on wheat in Bixby area of Oklahoma (first record of season), but none found on wheat in Texas Panhandle. (p. 1289). Adults of CLOVER ROOT CURCULIO ranged 3-6 per sweep in many fields of alfalfa and mixed clover-alfalfa in Wisconsin. (p. 1291).

CITRUS FLAT MITE present on most citrus in Yuma County, Arizona, and causing damage in some areas. On Florida citrus, CITRUS RUST MITE populations increased into high range and TEXAS CITRUS MITE continues to be more abundant than in prior years. In addition, PURPLE SCALE, GLOVER SCALE, CHAFF SCALE and YELLOW SCALE continue to be above average in abundance; and WHITEFLIES (larvae) increased further and are the highest in 12 years of record, but a decrease is expected in November. (p. 1293).

CABBAGE LOOPER increasing rapidly in lettuce fields in Yuma and Maricopa Counties, Arizona; large egg deposits found in most areas. (p. 1293).

Two PINK BOLLWORM larvae found in stub cotton field near Coolidge Airport, Pinal County, Arizona; sex lure traps at this location have captured 10 moths. These finds in an eradication area. Heavy pink bollworm infestations being noted on cotton in Coynosa area of Pecos County and in portions of Ward and Reeves Counties, Texas; and remains severe in cotton fields near Solomon, Graham County, Arizona. (p. 1294).

WESTERN PINE BEETLE and ENGRAVER BEETLES damaging ponderosa pine in areas of California. (p. 1295).

HORNETS continue to harass humans and pets in parts of Alabama; populations larger than normal. (p. 1299).

COTTON LEAFWORM taken in California for first time; not expected to overwinter, however. (p. 1294).

DETECTION

New State records were WHEAT CURL MITE in Arkansas (p. 1292) and a LEAF BEETLE (*Diabrotica cristata*) in Alabama (p. 1301). New county records of significance were SMALLER EUROPEAN ELM BARK BEETLE in Midland County, Texas (p. 1297), and a WHITE-FRINGED BEETLE (*Graphognathus* sp.) in Chattahoochee County, Georgia (p. 1301).

SPECIAL REPORTS

Ohio Spittlebug Survey - 1963. (p. 1290).

Status of the Screw-worm in the Southwest. (p. 1299).

The Alfalfa Weevil in the Eastern United States. (pp. 1304-1306).

Reports in this issue are for week ending October 25, unless otherwise indicated.

WEATHER OF THE WEEK ENDING OCTOBER 28

Dry weather continued over most of the Nation from the Rocky Mountains eastward to the Atlantic coast. The important exceptions included the lower Rio Grande Valley, a few small scattered areas in the northern and central Great Plains, and a narrow strip along the coast of the Carolinas. Parts of Kansas remained "extremely dry" as was much of Oklahoma. Most of Illinois received no rain of consequence. The drought continued in Indiana and was in the sixth week in Ohio. Columbus, Ohio, received no more than very light sprinkles in 45 days. In Pennsylvania, the drought was in the 4th week. Wells and streams were low. Some stations in New Jersey received from light sprinkles to 0.40 inch of rain on the 28th. It was the first rain since October 4. The situation was equally severe in the South. Louisiana had received almost no rain since September 29. The drought persisted in Mississippi, Alabama and Georgia, and was in the 4th week in Tennessee. The drought was in the third week in Kentucky and continued in the Carolinas (except along the coast), in Virginia, and northern Maryland. In much of the drought area, the danger of forest and brush fires was extremely high. More than 100 woodland fires occurred in New England during the week.

Hurricane Ginny, centered at the beginning of the week about 115 miles southeast of Cape Hatteras, North Carolina, drifted southward to a position off the coast of north central Florida. By midweek, she began moving northwestward producing rains along the Carolina coast. Hurricane warnings were displayed Friday from Charleston, South Carolina, to Cape Fear, North Carolina, and residents were warned to prepare for hurricane winds and high tides. The damage, however, was confined mostly to beach erosion in North Carolina. By the end of the week, Ginny had brought heavy rains and strong winds to the Carolina coast and had moved eastward toward Bermuda.

The Pacific Northwest received substantial rains from three storms during the week. The first front produced heavy rains, 2 to 3 inches or more, and gales along the Washington coast. By midweek, the front had crossed the Rocky Mountains and trailed from Lake Winnipeg across the Dakotas, the Nebraska Panhandle, Colorado, and southwestward to San Diego, California, and a new giant of a storm brought more rains to the Northwest. This second front moved quickly across the Great Plains and by Monday morning, October 28, stretched from near Boston, Massachusetts, to Midland, Texas. It produced some light sprinkles over the northern and central interior but was followed by the first freezing temperatures of the season over the northern and central Great Plains. In many areas, this was the latest that the first freezing temperatures of the fall season had occurred. The third storm was approaching the Pacific Northwest at the end of the week. Widespread rains fell over the northern Great Plains on Monday, September 21. Scattered rains, not heavy (except locally) but significant, dampened Texas and Oklahoma during the first half of the week. More scattered rains occurred over the north central areas, but the totals failed to relieve the dry situation which has resulted from the scanty rains over the past several weeks.

Temperatures for the week averaged below normal over Oregon, northern California, and southwestern Washington; also in the vicinity of Bakersfield, California. They averaged above normal over most of the rest of the Nation. Most of the Country from Oklahoma City, Oklahoma, northward to the Canadian Border, eastward to Tennessee, and northeastward to New England averaged more than 10° above normal. Numerous stations over the northern Great Plains and Lake region averaged 15° above normal. Some of the areas where no rain fell during the week include southern California, most of Arizona, New Mexico (except the north central), the Texas High Plains, western Kansas, eastern Colorado, southwestern Nebraska, Louisiana, the eastern half of Arkansas, southeastern Missouri, east central Indiana, most of Ohio, Tennessee, western North Carolina, western South Carolina, Mississippi, Alabama, Georgia (except the coast), western Florida Peninsula, and much of the area from Richmond, Virginia, northeastward to New England. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

PEA APHID (Acyrtosiphon pisum) - NEW MEXICO - Appears to be building up in alfalfa fields in Dona Ana County as temperatures become cooler. (N. M. Coop. Rpt.). OKLAHOMA - Light in alfalfa in Choctaw County, southeast; ranged 2-4 per 10 sweeps. Noted in fields checked in east central area. (Okla. Coop. Sur.). WISCONSIN - Populations appear to have decreased somewhat in southern part of State; however, counts continue to range 300-500 per sweep in few fields in western Dane County. Averaged about 30 per sweep in most fields in southeast and southern areas. (Wis. Ins. Sur.). OHIO - Severe injury observed in many southeast area alfalfa fields. Populations remain extremely high in spite of rapid buildup of lady beetle adults and larvae. Aphids ranged 900-1,000 per 50 sweeps in numerous Athens County alfalfa fields. (Lyon). MARYLAND - Damaging alfalfa in Harford County. (U. Md., Ent. Dept.). DELAWARE - Causing rather extensive injury to field of alfalfa in Kent County. (MacCreary).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Large populations depositing heavy amounts of honeydew on alfalfa in Wagoner, Muskogee and Sequoyah Counties, east central; ranged 1,500-3,000 per 10 sweeps. Ranged 30-150 per 10 sweeps in Choctaw County, southeast. (Okla. Coop. Sur.). NEBRASKA - Averaged 500 per 10 sweeps in some areas of Boyd County; ranged 30-150 per 10 sweeps in fields surveyed in Keya Paha and Knox Counties. No sexual forms found in these 3 counties. (Bergman). WISCONSIN - Little change noted since last report. Noticeable numbers present in new seeding alfalfa in more heavily infested areas of State. (Wis. Ins. Sur.).

GREENBUG (Schizaphis graminum) - OKLAHOMA - Occasional specimens found in wheat in Bixby area, Tulsa County (east central). This is first record of season and corresponds to average first occurrence of October 25, based on survey records of past 8 years. (Okla. Coop. Sur.). TEXAS - Found in low numbers on western wheatgrass (Agropyron smithii) during past summer; still present on this grass but in very low numbers. As yet, has not been found on wheat in panhandle area. (Daniels).

CORN LEAF APHID (Rhopalosiphum maidis) - MICHIGAN - Populations generally low to moderate in east central and southwest counties in Lower Peninsula. Cast skins and other evidence indicate general moderate to heavy infestations earlier. (Newman, Janes).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Populations of 3 per foot of row noted in wheat in Pawnee County area, north central. (Okla. Coop. Sur.).

YELLOW SUGARCANE APHID (Sipha flava) - WISCONSIN - Populations common in most grassy alfalfa fields. (Wis. Ins. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OHIO - Averaged 1 adult per 2 sweeps in several widely distributed alfalfa fields in southeast area. (Lyon).

CHINCH BUG (Blissus leucopterus) - ALABAMA - Light to heavy in all late corn fields recently surveyed in southwest and western counties; extremely heavy in late planted corn for roasting ears. At least 50 percent nymphs. (McQueen).

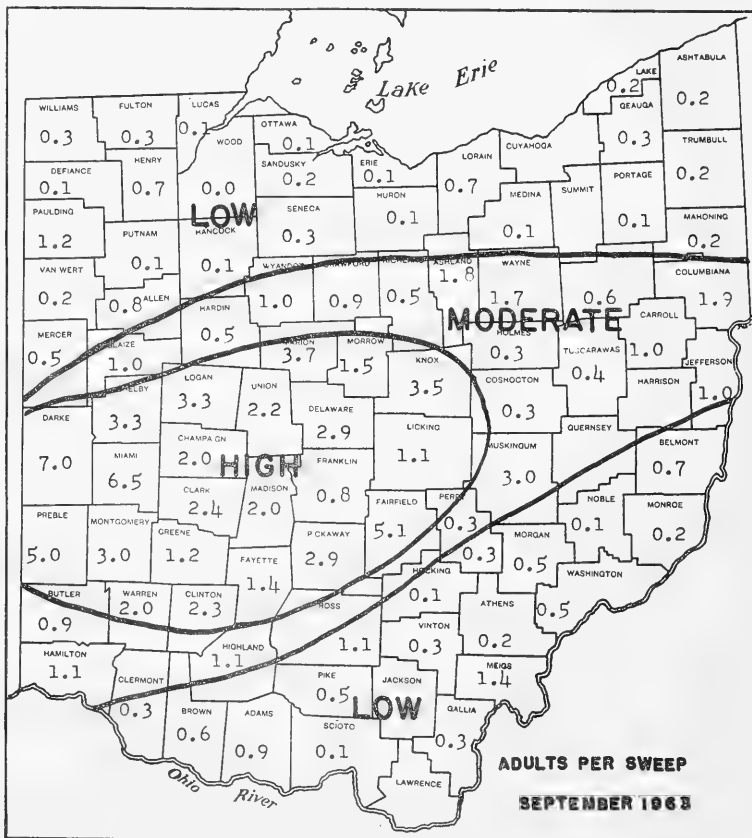
A SPITTLEBUG (Prosapia bicincta) - GEORGIA - Moderate in lawns in Columbus area, Muscogee County. (Greene).

STINK BUGS - OKLAHOMA - Counts of several species ranged 1-5 per 10 sweeps in Choctaw County alfalfa (southeast). (Okla. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Ranged 4-6 per 10 sweeps in alfalfa in Choctaw County, southeast. Only occasional specimens noted in fields checked in Sequoyah and Muskogee Counties, east central. (Okla. Coop. Sur.).

Ohio Spittlebug Survey - 1963

Results of annual fall survey of meadow spittlebug (*Philaenus spumarius*) adult populations presented on map below. On the basis of the survey just completed, spittlebug populations are above those of 1962. There will undoubtedly be damage in a band across the central portion of the State next spring, whereas, populations will remain low and noneconomic in much of northern and southeastern areas. Some fields in low areas may benefit from spraying next spring. Conversely, there will undoubtedly be fields in moderate and high areas that will have relatively low numbers, as spittlebug populations are often quite variable from field to field. If nymphs can be easily found while quite small, they are likely to be abundant enough to cause damage. On the average, one adult per sweep in early September will produce one nymph per stem the following spring. Control measures will pay dividends where nymphal populations are at or above one per stem. (Treece, Lyon, Holdsworth).



CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - UTAH - Numerous in alfalfa fields in Collinston-Fielding area, Box Elder County. (Knowlton).

LEAFHOPPERS - OHIO - Specimens collected in virus-diseased cornfield near Friendship, Scioto County (south central), determined as follows: Graphocephala versuta, 1 male; Draeculacephala spp., 19 males, 19 females; Kolla bifida, 6 males, 2 females; Aceratagallia sanguinolenta, 6 males, 1 female; Deltocephalus flavicosta, 1 female; Stirellus bicolor, 1 female; Stirellus obtutus, 1 female; Chlorotettix spp., 2 females; Exitianus exitiosus, 7 males, 3 females; Endria inimica, 6 males, 3 females; Acinopterus acuminatus, 1 male. (Freytag, Sept. 26).

CLOVER LEAF WEEVIL (Hypera punctata) - WISCONSIN - Larvae becoming more noticeable in clover and alfalfa fields; first to third instars present. Adults common in few fields. (Wis. Ins. Sur.).

CLOVER ROOT CURCULIO (Sitona hispidula) - WISCONSIN - Adults range 3-6 per sweep in many fields of alfalfa and mixed clover-alfalfa. (Wis. Ins. Sur.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MICHIGAN - Only slight statewide injury evidenced in 18-county autumn survey. Of 90 corn fields selected at random, only 3 (2 in Lapeer County and 1 in Lenawee County) showed evidence of attack. Yield reduction in these instances estimated at 10-15 percent. (Janes, Newman).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - OHIO - Averaged 4 adults per 50 sweeps in field of alfalfa near Marietta, Washington County. Many females with eggs. (Lyon).

Corn Pests in Alabama - RICE WEEVIL (Sitophilus oryzae), GRANARY WEEVIL (Sitophilus granarius), SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), and other species entering corn ears in fields in Lee, Chambers and Tallapoosa Counties, especially where ears previously damaged by corn earworm (Heliothis zea). (Barwood).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW MEXICO - Survey negative in Quay, Curry, Roosevelt and southern counties to October 15. (N. M. Coop. Rpt.).

NORTH DAKOTA - Preliminary data from fall survey indicate heavy infestations in southeastern area. (Hintz). WISCONSIN - Few moths still being taken in light traps at Mazomanie and Platteville. (Wis. Ins. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - NEW MEXICO - Present in corn roots or stalks in most corn fields checked in southern counties. (N. M. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - MICHIGAN - Larval injury to field corn in Berrien, Cass, Van Buren, Kent, Lapeer, Tuscola and Saginaw Counties extremely low in 1963. Only 1 ear, from a Berrien County field, showed injury; 875 ears sampled from 35 fields. (Newman, Janes).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Moderate counts of 9 per 10 sweeps noted in Tillman County alfalfa. (Okla. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - WISCONSIN - Ranged 1-3 larvae per sweep in many alfalfa fields in southern area. (Wis. Ins. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Reports of damage to grasses and small grains continue in most sections of State. (Meisch).

GRASSHOPPERS - UTAH - Some grasshoppers, largely Melanoplus spp., still active at elevations up to 7,000 feet in Logan and Blacksmith Fork Canyons in Cache and Rich Counties. (Knowlton). NEBRASKA - Melanoplus differentialis and M. femurrubrum adults averaged approximately 4 per square yard in margins of corn fields in Cass and Otoe Counties. (Roselle). SOUTH DAKOTA - Egg survey complete,

with samples taken from areas with economic adult infestations during summer; egg pods ranged 0-9 per square yard in southeast district. (Hintz). NORTH DAKOTA - Egg surveys conducted in central, north central, northwestern and west central areas; infestations ranged light to threatening and development varied from clear to segmented; 4-8 percent of eggs infested with bee fly and carabid beetle larvae. Dominant species included M. bivittatus, M. sanguinipes, M. packardii, M. differentialis and M. femurrubrum. (Brandvik). WISCONSIN - M. femurrubrum egg development continues; deposition sites difficult to find; negative in most fields. (Wis. Ins. Sur.).

HESSIAN FLY (Phytophaga destructor) - OHIO - No specimens found in autumn planted wheat fields throughout southeast. Very light infestations observed in volunteer wheat plants growing in this season's harvested wheat fields. (Lyon).

AN ALFALFA SEED CHALCID (Bruchophagus roddi) - UTAH - Infesting 2.77 percent of alfalfa seed examined from 13 fields at Delta, Millard County; counts ranged 0-13 percent of seed infested. (Haws). Counts higher in some other seed-producing areas. (Knowlton).

WHEAT CURL MITE (Aceria tulipae) - ARKANSAS - Collected on orchardgrass at University of Arkansas Farm at Fayetteville, Washington County, during July 1963. Det. by H. H. Keifer. This is a new State record. (Ark. Ins. Sur.).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NEW MEXICO - Losses in apple orchards much higher this season than for several years in Rio Arriba and Santa Fe Counties. Many growers were unable to obtain satisfactory control with use of insecticides. (N. M. Coop. Rpt.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - WYOMING - Small infestations found on apple trees in Cheyenne area, Laramie County, October 9. (Spackman).

SAN JOSE SCALE (Aspidiotus perniciosus) - NEW MEXICO - Light to moderate infestations found on apple trees in Velarde area, Rio Arriba County. (N. M. Coop. Rpt.).

SPIDER MITES - NEW MEXICO - Light infestations, probably Tetranychus mcDanieli, can still be found on foliage in apple orchards in Rinconada area, Rio Arriba County. (N. M. Coop. Rpt.). GEORGIA - An unspecified species heavy on 20 acres of apples in Cobb County. (Taylor).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - This and yellow species continue very active on pecans; increased in population per tree on trees still having suitable live leaves. Majority of trees already defoliated by combination of damage by aphids, spider mites, disease and drought. (Bagby, Eden, et al.). TEXAS - This species and Monellia spp. present in large numbers on pecans in Tarrant County. (Turney).

PECAN WEEVIL (Curculio caryae) - GEORGIA - Heavy in hickory nuts in Crawford County; two-thirds of fruits examined infested with larvae. (Harvey).

HICKORY SHUCKWORM (Laspeyresia caryana) - TEXAS - Light to moderate populations damaging pecans in Tarrant County. (Turney).

A LEAF BLOTCH MINER (Cameraria caryaefoliella) - ALABAMA - Has been a widespread pest of pecans in Mobile County since June; apparently present in area for several years. (Eden).

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Infesting additional black walnut trees in Logan and Providence areas, Cache County. (Knowlton).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Larvae continue abundant on citrus and other fruits in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Populations abundant on citrus trees in Yuma County. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (Brevipalpus citri) - ARIZONA - Present on most citrus and causing damage in some areas of Yuma County. (Ariz. Coop. Sur.).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Eight additional adults found in McPhail traps at Nogales; this makes total of 18 found this year. Fruit inspection continues negative. (Ariz. Coop. Sur.). CALIFORNIA - Bait spray treatment scheduled to continue through December 13, due to report of male fly taken in Tijuana, Mexico, October 10. All survey and detection in State has been negative to October 25. (Cal. Coop. Rpt.).

Citrus Insect Situation in Florida - Mid-October - On leaves, CITRUS RUST MITE (Phyllocoptera oleivora) infested 66 percent of groves (norm 64 percent); 45 percent economic (norm 37 percent). On fruit, CITRUS RUST MITE infested 67 percent of groves (norm 71 percent); 44 percent economic (norm 47 percent). Population increased into high range and will continue high. Although statewide abundance will be near normal, infestations will be above normal on leaves, especially in cold-damaged groves. Highest districts are Gainesville, Bartow, Brooksville, west coast and upper east coast. CITRUS RED MITE (Panonychus citri) infested 48 percent of groves (norm 42 percent); 16 percent economic (norm 19 percent). Population slightly below normal. Will increase into moderate range with scattered groves developing heavy infestations. Highest districts are west coast, Bartow and Gainesville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 41 percent of groves (norm 20 percent); 20 percent economic (norm 5 percent). Continues to be more abundant than in prior years. Population will increase but is expected to remain in moderate range. Scattered groves will have heavy infestations. Highest districts are Bartow, west coast and ridge. PURPLE SCALE (Lepidosaphes beckii) infested 71 percent of groves (norm 62 percent); 16 percent economic (norm 3 percent). GLOVER SCALE (L. gloverii) infested 68 percent of groves (norm 25 percent); 25 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 73 percent of groves (norm 39 percent); 17 percent economic (norm 1 percent). YELLOW SCALE (Aonidiella citrina) infested 39 percent of groves (norm 12 percent); 7 percent economic (norm 1 percent). These 4 species will continue to be above average abundance. Purple scale will decrease slightly. Glover scale, chaff scale and yellow scale will increase. Scattered groves will develop heavy infestations. BLACK SCALE (Saissetia oleae) infested 44 percent of groves (norm 34 percent); 21 percent economic (norm 12 percent). Population will decrease from above normal level now present. Few groves, mostly in Ridge and Indian River districts, may harbor heavy infestations until cold weather occurs. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 20 percent of groves (norm 59 percent); 2 percent economic (norm 10 percent). Although this species has increased slightly, it will remain far below normal. WHITEFLY population as measured by number of larvae (the injurious stage) increased further and is highest in 12 years of record. A decrease is expected in November. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Increasing rapidly in lettuce fields in Yuma and Maricopa Counties. Large egg deposits found in most areas. (Ariz. Coop. Sur.). NEW MEXICO - Few eggs and larvae still being found in lettuce fields. Most growers harvesting. (N. M. Coop. Rpt.). FLORIDA - Infesting 40 percent of 200 cabbage plants and 9 percent of 300 celery plants at Sanford, Seminole County. Damage light. (Desin).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Present in Yuma and Maricopa County lettuce fields. Controls have kept damage at low level. (Ariz. Coop. Sur.).

SOUTHERN POTATO WIREWORM (Conoderus falli) - NORTH CAROLINA - This only species collected from a field in Pamlico County that was in tobacco this year; 24 fairly large larvae collected by soil sifting. This is same field from which species was reported about first of June 1962. (Mount).

CABBAGE APHID (Brevicoryne brassicae) - ALABAMA - Numbers extremely high on collards in Lee County home gardens. (McQueen). RHODE ISLAND - Heavy on broccoli in Cranston, Providence County. (Mathewson, Oct. 10).

GREEN PEACH APHID (Myzus persicae) - OHIO - Nymphs and adults heavy on spinach near Lorain, Lorain County. (Sleesman).

BEE T LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Aerial treatment of Russian-thistle infestations continued; rains restricted treatment for short period, but completion scheduled for about October 26, with some 250,000 acres of brushland sprayed. Prespray counts of 15-180 beet leafhoppers per sweep reported; post-spray counts in treated areas made within 48 hours after treatment showed 99 percent kill. (Cal. Coop. Rpt.).

A LEAF MINER FLY (Liriomyza sp.) - FLORIDA - Infested 77 percent of 300 celery plants at Sanford, Seminole County; damage ranged light to heavy. Found in only one cabbage plant at same location. (Desin).

SLUGS - WISCONSIN - Causing considerable damage to tomatoes in Winnebago County. (Wis. Ins. Sur.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Remains severe in cotton fields in area near Solomon, Graham County; occasional larva and exit hole found in fields throughout county. Few larvae found at Duncan, Greenlee County. Two larvae found in stub cotton field near Coolidge Airport, Pinal County; sex lure traps at this location have captured 10 moths. These finds in an eradication area. (Ariz. Coop. Sur.). See CEIR 13(43):1267. TEXAS - Heavy infestations being noted on cotton in Coyanosa area of Pecos County and in portions of Ward and Reeves Counties. (Meisch). OKLAHOMA - Gin-trash inspections in Coal, Hughes, McClain, Okfuskee and Okmulgee Counties positive; heaviest in McClain County, with 144 specimens per 48 bushels of gin trash. (Okla. Coop. Sur.).

BOLLWORM (Heliothis zea) - NEW MEXICO - Continues to damage bolls in cotton fields throughout southern counties. (N. M. Coop. Rpt.). ARKANSAS - Moth activity continues; has been extremely heavy since mid-July. Moths continue to be taken in light traps at Kelso and Fayetteville. (Ark. Ins. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - NEW MEXICO - Occasional larva noted in Dona Ana County cotton fields. (N. M. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - CALIFORNIA - Adult male taken in argon light trap at Winterhaven, Imperial County, constitutes a new State record. Second male taken in light trap at Le Grand, Merced County, several days later, for new county record. Significance of finds problematical as species is highly migratory and is not known to overwinter in the State. (Cal. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

WESTERN PINE BEETLE (*Dendroctonus brevicomis*) - CALIFORNIA - Causing local kill of some 80 trees in groups of 40 or more in Aqua-Tibia wild area and Crosley Saddle area, Cleveland National Forest. (R. English, USFS). Infesting groups of ponderosa pines in Blue Gulch, Russian Creek, Sawyers Bar and George Ranch areas in Klamath National Forest. Severely damaging ponderosa pines in 3,000-acre stand in Los Padres National Forest, Monterey County. Over 500 trees already killed as single trees and groups, with infestation increasing. (A. Campbell, USFS).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - VIRGINIA - Fall coloration of hardwoods caused cessation of aerial surveys for damage, probably until mid-December. New outbreak of what is probably this species, first reported by district personnel and certified by aerial observation, appears concentrated in loblolly pine in northern Brunswick, southeast Lunenburg and central Dinwiddie Counties. Limited reconnaissance surveys into southern Mecklenburg, Brunswick and Greensville Counties showed evidence of limited activity. Spots in infested zones ranged 0.25-0.50 acre in size. Resurvey of all areas of past activity in early September showed scattered but reduced activity; about 50 percent of spots being extensions of old infestations not salvaged. Recent aerial survey of Eastern Shore showed no alarming increases in activity. In Farmville area, emergence of major adult brood reported underway in mid-September. Active throughout Waverly district, being most active in Brunswick, Dinwiddie and Greensville Counties. Continued activity evidenced by kill of loblolly and shortleaf pines in small patches in Chesterfield, Powhatan, Goochland and King William Counties; still active in Fluvanna County in shortleaf pine and continued activity evident in Amelia, Charlotte, Cumberland, Buckingham, Mecklenburg and Prince Edward Counties; 5 new infestations noted in Accomack and Northampton Counties. (Va. For. Pest Surv. Rpt., Sept. Summ.).

PINE BARK BEETLES (*Dendroctonus* spp.) - VIRGINIA - Active throughout Waverly district, with most in Brunswick, Dinwiddie and Greensville Counties; active in scattered single trees in several spots in Fluvanna County; activity increasing in Appomattox, Halifax, Lunenburg, Mecklenburg and Nottoway Counties in loblolly and shortleaf pines. (Va. For. Pest Surv. Rpt., Sept. Summ.).

FIR BEETLES - CALIFORNIA - *Dendroctonus pseudotsugae*, *Scolytus unispinosus*, *S. ventralis* and *Melanophila drummondii* were most important insects found in blowdown fir and pine trees in Humboldt County. Acreages ranged 20 to 160 acres for 29 reports of blowdowns in county. (R. Fheley, USFS).

ENGRAVER BEETLES (*Ips* spp.) - CALIFORNIA - Severely damaging small acreages of ponderosa pines in Willow District, Mendocino National Forest; damage increasing. (J. Levitan, J. Housman; USFS). OKLAHOMA - Killing pines in Pushmataha County, with prolonged drought conditions probably contributing factor. (Okla. Coop. Sur.). VIRGINIA - Large numbers now found in competition with *Dendroctonus frontalis* where infestations of latter species high last year. Increasing numbers in competition with *D. frontalis* portends a decline in population of latter species. Engraver beetles killed single Virginia pine in Roanoke County and infested 9-10 shortleaf pines in tract in Scott County; *I. avulsus* killing group of natural 3 to 4-year-old loblolly pines in Westmoreland County. (Va. For. Pest Surv. Rpt., Sept. Summ.).

LODGEPOLE NEEDLE MINER ("*Recurvaria*" *milleri*) - CALIFORNIA - New infestation present in Jeffrey pine in Snow Valley, San Bernardino National Forest. An estimated 5 acres presently involved with trees fading. (J. Pierce, USFS).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - OKLAHOMA - Pines in experimental plots at Stillwater, Payne County, have 73 percent of tips damaged. (Okla. Coop. Sur.). ARKANSAS - Continues active in southwest. Adults observed in Hempstead County; half-grown larvae in pine tips also noted. (Ark. Ins. Sur., Warren). VIRGINIA - Activity remains high in most loblolly pine plantations in Waverly district, with tip kill present on 90 percent of trees. Larval activity caused

extensive tip kill in 2 tracts in Hanover County and activity noted in loblolly plantations in Albemarle, Stafford and Spotsylvania Counties, with moderate to extensive damage to buds. Infesting 2 loblolly pine plantations in Amelia County where 50 percent of trees stunted and deformed, and in a Mecklenburg County plantation. Active on loblolly plantings in northern Pittsylvania County and infesting 100 percent of planted shortleaf pine on 3 acres in Page County. Damage severe in 2 loblolly pine plantations in Accomack County and 1 in Northampton County; also widespread throughout mainland portion of Portsmouth district. (Va. For. Pest Surv. Rpt., Sept. Summ.).

PINE TUBE MOTH (Argyrotaenia pinatubana) - OHIO - Moderate damage observed on white pine in Stark County. Dissection revealed larvae in pine needle tubes; pupation had not occurred. (Appleby, Oct. 19).

PINE WEBWORM (Tetralopha robustella) - VIRGINIA - Infesting 5-10 percent of loblolly pines on 2 plantations each in Amelia and Prince Edward Counties. (Va. For. Pest Surv. Rpt., Sept. Summ.). FLORIDA - Infested slash pine at Palatka, Putnam County. (Adkins, Oct. 7).

A CONE MOTH - VIRGINIA - Damage to Virginia pine widespread in Charlottesville district with occasional trees having as much as 10 percent loss of cones. (Va. For. Pest Surv. Rpt., Sept. Summ.).

PINE BUTTERFLY (Neophasia menapia) - CALIFORNIA - Heavy flights occurred during period of several weeds in Kings Beach area, Lake Tahoe, Placer County. (Wanda Wheeler).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - COLORADO - A problem on ornamental conifers in many areas of State. This season, there was a late or second generation of crawlers. (Hantsbarger). OHIO - Light on white pine in Stark County. (Appleby, Oct. 19). MARYLAND - Heavy on ornamental Scotch pine at Chevy Chase, Montgomery County. (U. Md., Ent. Dept.). ALABAMA - Heavy on several ornamental Austrian pines in retail nursery. Few less severe infestations noted on loblolly pine in Lee County. (Keeble, Blake, et al.).

GRASSHOPPERS - CALIFORNIA - Severely damaging ponderosa and Digger pines in Potato Hill Lookout Station Plantation by defoliating and debarking trees adjacent to rangeland; some 200 trees severely damaged in Mendocino National Forest. (R. Burke, USFS).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - VIRGINIA - Larvae defoliating scattered loblolly pines in 40-acre tract in King William County and infesting single loblolly pine on plantation in Amherst County; active and causing scattered, light defoliation of single shortleaf pines in Tazewell County, 5 plantations (shortleaf, Virginia and loblolly pines) in Wise County and 2 trees in loblolly plantation in Buchanan County. Larvae defoliating 2 Scotch pines in area of Augusta County. Apparently remains as low or lower in population in "observation area" as last year, except in southeastern portion of State where slight increase in damaging populations of last year may have occurred. Final totals for 1963 aerial survey show 167 positive areas, of which 11 (7 percent) were breakovers and 42 (25 percent) were old centers not treated. (Va. For. Pest Surv. Rpt., Sept. Summ.).

CALIFORNIA TENT CATERPILLAR (Malacosoma californicum) - CALIFORNIA - Causing severe damage to madrone trees in 1,000-acre area along Klamath River from Seiad to Oak Knoll on river slopes in Siskiyou County. (J. Hippler, USFS).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Light to moderate populations defoliating poplar and fruit trees in Rio Arriba and Santa Fe Counties. (N. M. Coop. Rpt.). VIRGINIA - Widely distributed on Eastern Shore. (Va. For. Pest Surv. Rpt., Sept. Summ.).

A FALL WEBWORM (*Hyphantria* sp.) - CALIFORNIA - Causing severe defoliation of madrone trees along Klamath River from Seiad to Happy Camp, Siskiyou County. (J. Hippler, USFS).

VARIABLE OAK LEAF CATERPILLAR (*Heterocampa manteo*) - OKLAHOMA - Defoliation of oaks extensive this season throughout eastern third of State. (Okla. Coop. Sur.).

FALL CANKERWORM (*Alsophila pometaria*) - NORTH DAKOTA - Females continue active in southeast area; extremely numerous on trees and buildings. (N. D. Ins. Sur.).

ELM LEAF BEETLE (*Galerucella zanthomelaena*) - NEW MEXICO - No larvae or adults found in infested areas of Santa Fe and Rio Arriba Counties, although light to moderate damage evident on Chinese elms. (N. M. Coop. Rpt.). VIRGINIA - Damage severe on an area of eastern Augusta County. (Va. For. Pest Surv. Rpt., Sept. Summ.).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - TEXAS - Several specimens collected from Chinese elm in Midland County. This is a new county record for this vector of Dutch elm disease. (Meisch).

TWIG GIRDLER (*Oncideres cingulata*) - OKLAHOMA - Active on elm and pecan trees throughout State. (Okla. Coop. Sur.). SOUTH CAROLINA - Causing limbs to drop from pecan, shrubbery and other hosts in Harleyville, Dorchester County. (Nettles et al.).

LACE BUGS (*Corythucha* spp.) - ALABAMA - *C. arcuata* heavy on oaks, especially water oak (*Quercus nigra*), used as ornamentals in central area. (McGholon, et al.). *C. pruni* continues present on leaves of wild cherry throughout State, causing light spotting and injury. (McQueen).

WALKINGSTICK (*Diaperomera femorata*) - ARKANSAS - Infestations present October 15 in Boston Mountain area in northwest part of State estimated at 10 percent of numbers present September 10. On latter date, nearly all in nymphal stage, with only few adults present. Much larger numbers were expected than found October 15. Lower numbers may be due to mortality resulting from extremely dry conditions and unseasonably high temperatures. Leaves on trees also very dry. (Ark. Ins. Sur.). OKLAHOMA - Considerable activity continues throughout forested areas in eastern part of State. (Okla. Coop. Sur.).

SPIDER MITES - ALABAMA - Unspecified species heavy on oaks, especially water oak (*Quercus nigra*), used as ornamentals in central area. (McGlohon et al.).

MIMOSA WEBWORM (*Homadaula albizziae*) - NORTH CAROLINA - Feeding heavily on mimosa in Rowan County; larvae mostly last instar. Det. by D. L. Wray. (Bowers). VIRGINIA - Infesting Moraine honeylocusts at location in Bassett, Henry County, and mimosa at several sections of Scott, Lee, Wise, Russell and Bland Counties, October 20, 23 and 24. (Tarpley).

ROSE APHID (*Macrosiphum rosae*) - GEORGIA - Heavy on roses in Dalton area, Whitfield County. (Woodliff). MARYLAND - Heavy on rose buds at University Park, Prince Georges County. (U. Md., Ent. Dept.).

APHIDS - MARYLAND - Undetermined species infesting weeping willow at College Park, Prince Georges County, and at Baltimore; 2 undetermined species moderate on oaks at Jefferson, Frederick County. (U. Md., Ent. Dept.). OKLAHOMA - Several species continue active on variety of ornamentals throughout State. (Okla. Coop. Sur.). ARKANSAS - Unspecified species very heavy on red maples in Fayetteville area, Washington County. (Ark. Ins. Sur.).

WHITEFLIES - ALABAMA - Not so noticeable as usual; more noticeable now on shrubs around homes than at any time during year, but only in low to moderate numbers. (McQueen).

COCCIDS - FLORIDA - Pinnaspis aspidistrae severe on leaves of Polystichum adiantiforme at Raiford, Union County (Collins, Sept. 26); Pseudaonidia clavigera infested 20 percent of 30 inspected Camellia sp. plants at St. Petersburg, Pinellas County (Bingaman, Oct. 15); Phenacaspis cockerelli infested Strelitzia reginae and Michelia fuscata at Orlando, Orange County (Crews, Oct. 22). ALABAMA - Chrysomphalus obscurus and Kermes spp. heavy on oaks, especially water oak (Quercus nigra), used as ornamentals throughout central area. C. obscurus killing many small branches. (McGlohon et al.). OHIO - Asterolecanium sp. moderate to heavy on approximately 200 chestnut oak trees at a nursery at Cleveland, Cuyahoga County. (Kile, Wells). CALIFORNIA - Single batch of immature females and crawlers of Chrysomphalus obscurus found on pin oak tree under eradivative treatment in Capitol Park, Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A MIDGE - DELAWARE - Unspecified species infesting and causing drop of holly berries in Newark area, New Castle County. (Connell).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - UTAH - Continue annoying at Brigham City, Box Elder County, and in some northern areas of Davis County. (Knowlton). OKLAHOMA - Probably Psorophora spp. active in north central area following recent rains; also reported active in Bryan County, south central. (Okla. Coop. Sur.). TEXAS - Aedes sollicitans, Aedes vexans, Aedes taeniorhynchus, Psorophora confinnis and Culex spp. were troublesome in Jefferson County during September. (Jeff. Co. Mosq. Control Comm.). FLORIDA - In coastal areas, light trap catches of salt-marsh mosquitoes showed Aedes taeniorhynchus far more abundant than Aedes sollicitans at all locations. Heaviest catches of A. sollicitans were 136 females per trap night (Sept. 27) at Santa Rosa, Walton County, and 142 at Innerarity Point, Escambia County (Sept. 20). Areas sporadically having A. sollicitans counts of 30 or more, but not reaching 50, were New Smyrna Beach (Volusia County), Allenhurst (Brevard County), Ft. Pierce (St. Lucie County) and Boca Grande (Lee County). A. taeniorhynchus generally most abundant in traps in Monroe County at Rock Harbor and Big Pine Key; counts approximately 1,000 females per trap on several occasions, with high of 3,392 at Big Pine on September 17 being high for entire State during September. Other high counts of approximately 500 or more sometime during September for A. taeniorhynchus made at Boca Grande, Ft. Pierce, Allenhurst, Sanibel (Lee County), Salerno (Martin County), and Biscayne Key (Dade County). Light or very light catches of both species made in such heavily populated regions as Tampa Bay area and Duval County. Cocoa Beach had very low counts of A. sollicitans and low catches of A. taeniorhynchus, highest being 66 females September 20. Traps along lower "Gold Coast" generally had low to very low catches, with scattered exceptions. (Collaborator's analysis from trap data supplied by Florida State Board of Health, Bureau of Entomology). (Tri-ology Tech. Rpt., Sept.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Continues annoying around sheltered areas throughout State. (Okla. Coop. Sur.). COLORADO - Populations becoming very heavy as there have been only 2-3 very light frosts. Extremely high populations present in several feed lots in Larimer County. (Simpson).

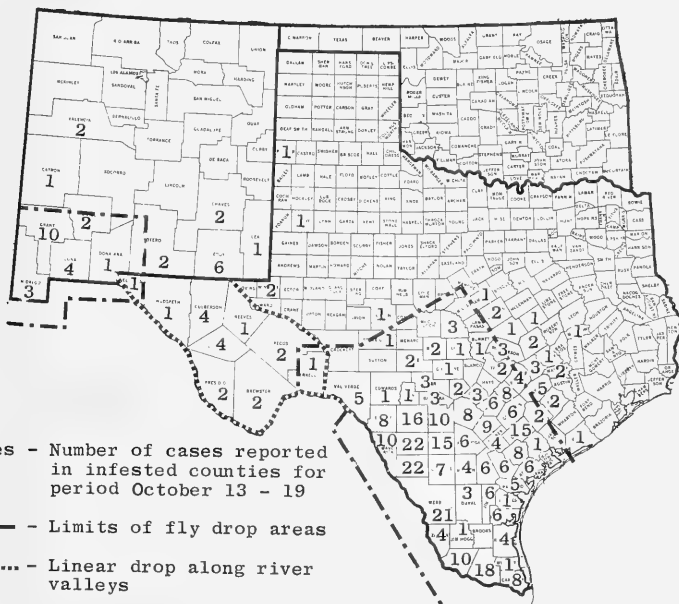
HORN FLY (Haematobia irritans) - OKLAHOMA - Generally light to moderate throughout State. Counts per head ranged 100-700 in Bryan County (south central); 600-800 in Choctaw and Pushmataha Counties (southeast); 350-400 in Tillman County (southwest). Moderate to heavy counts reported from Creek and Mayes Counties. (Okla. Coop. Sur.). GEORGIA - Averaged 30 per animal on treated herd. (Roberts).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Moderate to heavy counts of 7 per head on cattle in Choctaw County and 20 per head in Pushmataha County. (Okla. Coop. Sur.). DELAWARE - Abundant and annoying in northern Kent County. (Kelsey).

HORSE FLIES (Tabanus spp.) - OKLAHOMA - Averaged 0.5 per head on cattle in Choctaw and Pushmataha Counties, southeast. (Okla. Coop. Sur.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period October 13 - 19, a total of 377 infestations was reported in 78 counties in TEXAS and 34 infestations from 11 counties in NEW MEXICO. Most of the latter cases were in the southwest corner of the State. Screw-worm was confirmed for the first time this year in Hamilton, Lee, Madison and Matagorda Counties, Texas. A total of 124,121,450 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period October 13 - 19

----- - Limits of fly drop areas

..... - Linear drop along river valleys

SECONDARY SCREW-WORM (Cochliomyia macellaria) - WYOMING - Larvae collected June 24 from Hereford cow near Gillette, Campbell County; cow originally brought in from out of State. (Marks).

HORSE FLY BOT (Gasterophilus intestinalis) - RHODE ISLAND - Oviposition, apparently by this species, reported heavy on horse in Kingston, Washington County. Specimens not seen. (Kerr, Mathewson).

BLACK FLIES - UTAH - Annoying deer hunters in several areas of Logan and Blacksmith Fork Canyons in Cache and Rich Counties. (Knowlton). RHODE ISLAND - Simulium sp. noted attacking horse in Kingston, Washington County. (Kerr, Mathewson). NORTH CAROLINA - Simulium sp. a nuisance at a Martin County location. (Wray).

VESPID WASPS - ALABAMA - Vespula spp. continue to harass humans and pets. Extreme numbers in Lee and Jefferson Counties and other areas of State. Apparently hatch-out and population explosion of larger magnitude than usual. (Ledbetter, Spatswood, et al.). RHODE ISLAND - Scattered, seasonal reports of Polistes spp. in houses from all parts of State. (Mathewson, Cartier, Buonaiuto, King, Hannah, Peabody).

FLEAS (Ctenocephalides spp.) - MINNESOTA - C. felis and C. canis continue to be reported from throughout State; troublesome in homes and on lawns. (Minn. Ins. Rpt.). IOWA - Specimens of C. felis and C. canis sent in from Glenwood, Oskaloosa and Sioux Rapids during October. (Iowa Ins. Inf.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Becoming serious pest in Macon County in areas where hand-harvesting of corn underway, particularly when loading from piles of corn on ground for several days. Populations building up where ants apparently seeking food. (Ledbetter).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Troublesome to homeowners in Salt Lake City area, Salt Lake County, and several school buildings in Cache County. (Knowlton). WYOMING - Adults concentrating in buildings in urban areas of Laramie County. (Marks). MICHIGAN - Adults and nymphs continue a household nuisance in southern counties. (Janes, Newman). DELAWARE - Annoying in various parts of State; particularly heavy infestation noted in Lewes, Sussex County. (MacCreary). VIRGINIA - All stages, but mostly adults, creating nuisance in and around homes at locations in Mecklenburg, Henrico, Augusta and Page Counties. (Tarpley, Agee, Amos, Gray). ARKANSAS - Numerous in lawn and entering residence in Stone County, north central. (Ark. Ins. Sur.). NORTH CAROLINA - Numerous and annoying at locations in Scotland and Catawba Counties. (Johnston, Ivey, Robertson).

FACE FLY (Musca autumnalis) - VIRGINIA - Adults creating nuisance by congregating in and around homes and buildings in Lee, Buchanan, Scott, Russell, Tazewell, Bland and Giles Counties. (Tarpley, Lyle, Abbott). WISCONSIN - Few noted causing annoyance in Green County. (Wis. Ins. Sur.). NORTH DAKOTA - Adults numerous around farm buildings in northern Dunn County. (Brandvik). NEBRASKA - Adults moving to sheltered areas to overwinter. (Bergman).

HOUSE FLY (Musca domestica) - WISCONSIN - Principally this species, very active and causing much annoyance in Dane and Green Counties. (Wis. Ins. Sur.). UTAH - Troublesome in many restaurants, homes and schools in northern and central areas. (Knowlton).

CLUSTER FLY (Pollenia rudis) - MICHIGAN - Continues a nuisance around homes in Kent and Ingham Counties. (Janes). OHIO - A nuisance in Canal Winchester, Franklin County, and South Charleston, Clark County. (Blair).

INDIAN-MEAL MOTH (Plodia interpunctella) - RHODE ISLAND - House infestations reported from Shannock and West Kingston, Washington County. (Mathewson, Oct. 1).

LARGER YELLOW ANT (Acanthomyops interjectus) - DELAWARE - Reported in several homes in Wilmington area, New Castle County. (Connell). RHODE ISLAND - Alates noted in East Greenwich, Kent County. (Cartier, Oct. 17).

CLOVER MITE (Bryobia praetiosa) - RHODE ISLAND - House infestations numerous, especially in areas of Cranston, Warwick and Middletown. (Cartier, Buonaiuto).

GRASSHOPPERS (Schistocerca spp.) - ARIZONA - S. vaga and S. albolineata becoming problem to homeowners and businesses in Tucson, Pima County. (Ariz. Coop. Sur.).

STORED-PRODUCT INSECTS

MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) - OHIO - Larvae, pupae and adults medium at flour mill in Logan, Hocking County; moths easily observed resting on feed sacks. (Davidson, Lyon).

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - NEBRASKA -- Damaging corn in crib in Thayer County. (Roselle).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - OHIO - Adults and larvae heavy in stored oats near Carpenter, Meigs County; 120 specimens counted in one-pint sample. Controls have been applied with partial success; old and new oats are infested. (Bishop, Lyon). Adults also noted in Fremont, Sandusky County. (Maddy, Blair).

CONFUSED FLOUR BEETLE (Tribolium confusum) - OHIO - Heavy adult populations observed at flour mill in Logan, Hocking County; primarily between sacks of stored feed in mill. Infestations have been troublesome for several months. (Lyon).

RED FLOUR BEETLE (Tribolium castaneum) - RHODE ISLAND - Infestation found in warehouse in Providence, Providence County. (Cartier).

LESSER GRAIN BORER (Rhyzopertha dominica) - NORTH CAROLINA - Heavy in grain locally in Wake County. (Wray).

Stored Grain Insects in Wyoming - Adults of SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), RED FLOUR BEETLE (Tribolium castaneum), CONFUSED FLOUR BEETLE (T. confusum) and CADELLE (Tenebroides mauritanicus) each found in one of 5 granaries inspected in Albany County near Laramie. Infestations very light. (Marks).

BENEFICIAL INSECTS

LADY BEETLES - ARKANSAS - Eggs and larvae of unspecified species observed on red maples in Fayetteville area, Washington County, where aphids present in very heavy numbers. (Ark. Ins. Sur.). OHIO - Hippodamia convergens populations rapidly building up in alfalfa throughout southeast. (Lyon).

A STINK BUG (Euthyrhynchus floridanus) - NORTH CAROLINA - Collected in numbers from marsh reeds in Bladen County. Det. by D. L. Wray. (Lee).

HYMENOPTEROUS PARASITES - ALABAMA - Several specimens of 2 braconids, Cardiochiles nigriceps and Bracon mellitor, collected in cotton fields during August; former attacked Heliothis spp. and latter boll weevil. Also, a eurytomid (Eurytoma tylodermatis) found attacking boll weevil. (Watson).

MISCELLANEOUS INSECTS

A LEAF BEETLE (Diabrotica cristata) - ALABAMA - Recently collected in Winston County for a new State record. Det. by R. F. Smith. (Balsbaugh, McQueen).

A WHITE-FRINGED BEETLE (Graphognathus sp.) - GEORGIA - Light on weeds in Chattahoochee County. This is a new county record. (Greene).

LESSER MEALWORM (Alphitobius diaperinus) - MARYLAND - Adults and larvae infesting litter in chickenhouse at Jesterville, Wicomico County. (U. Md., Ent. Dept.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ALABAMA - Extremely large numbers noted feeding on drying, cut dipper gourds at roadside stand near Brent, Bibb County. (McQueen).

PUMPKIN CATERPILLAR (Diaphania indica) - FLORIDA - Found in Steiner trap in calamondin at Sebring, Highlands County. (Morris, Oct. 17).

NOCTUID MOTHS - MICHIGAN - Specimens of Trichoplusia ni, Pseudaletia unipuncta, Laphygma frugiperda and Peridroma saucia continue to be taken in blacklight trap in Livingston County. Lack of generally cold night temperatures considered responsible for these abnormally late collections. (Newman).

PIERID BUTTERFLIES - MICHIGAN - Adults of Pieris rapae and Colias eurytheme continue active in Livingston County at this abnormally late date. (Newman).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Single pupal case found on citrus leaf in new location in Sacramento, Sacramento County. Treatment in known infested area scheduled to begin in mid-November; 5 full-time inspectors continue survey outside treatment area. (Cal. Coop. Rpt.).

CRICKETS - TEXAS - Heavy infestations of unspecified species reported from Tarrant, McCulloch, Smith and Dallas Counties. (Tex. Coop. Rpt.).

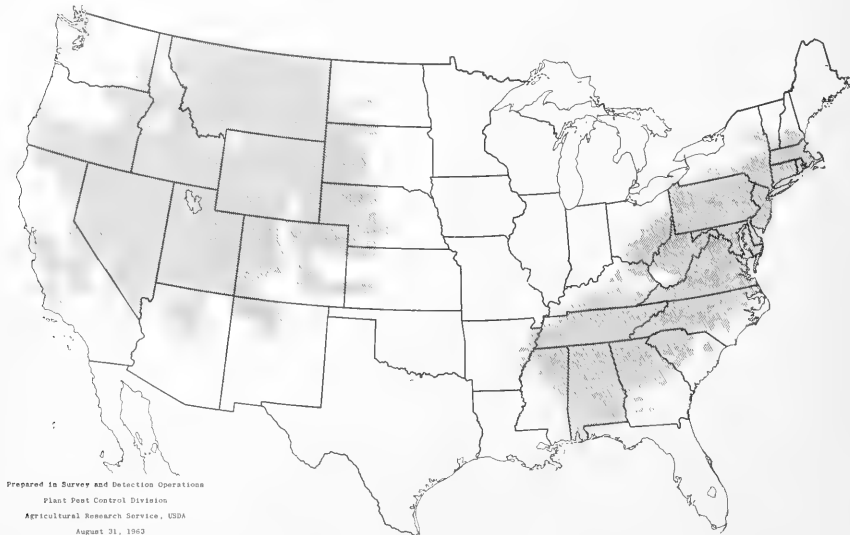
The Alfalfa Weevil in the Eastern United States

The alfalfa weevil, Hypera postica (Gyllenhal), has been known in the United States since 1904. In that year specimens were identified from Utah. It was not until 1952 that the weevil was reported in this country east of Nebraska. It had been the belief of entomologists that the weevil would not become established in the eastern part of the United States because of the difference in climatic conditions from those in its western habitat. However, in 1952, alfalfa weevil specimens were identified from Maryland. Later in the same year specimens were taken in Delaware, New Jersey, Pennsylvania and Virginia. In the succeeding years, spread of the weevil was rapid in the south and east with infestations being reported from Arkansas, Mississippi, and New Hampshire in 1963. In the Eastern United States, the weevil has now been found in 20 states east of the Mississippi River and in Arkansas west of the river. During the same period, only three new states, Kansas, North Dakota, and Washington, were reported in the West making a total of 15 states infested in that section of the Nation. The accompanying map shows the present distribution of the insect in the United States.

In order to determine the impact the weevil has had on alfalfa production in the East and South, a questionnaire was submitted to entomologists in each of the infested States in these areas. The following table is based on the information received, combined with existing U.S. Department of Agriculture records. No attempt was made to summarize the material, since it is believed the reader will obtain a much better picture of the problem and related costs if he makes a critical study of the table.

A review of the material shows a striking example of the rapid spread of an insect within a few years and how it can affect the economy of one of our important crops by reducing yield and quality as well as increasing the cost of producing the crop.

Distribution of Alfalfa Weevil (Hypera postica (Gyll.))



ALFALFA WEEVIL IN THE EASTERN UNITED STATES

- 1305 -

| State | Year | Alfalfa acreage prior to weevil infestation | Alfalfa acreage reporting reduction | Influence of weevil on alfalfa production | Has weevil reduced hay quality | Percent reduction by weevil | Cuttings affected | Were insecticides applied prior to report | Are insecticides used for alfalfa | Percent alfalfa treated | Cost - all applications (per acre) |
|----------------|------|---|-------------------------------------|---|--------------------------------------|--|--|---|-----------------------------------|-------------------------|--|
| Alabama | 1958 | 20,000 | 17,000 | Weevil and other production problems | Yes, first part of year | On untreated fields at least 33% | First, occasionally second | Infrequently | Yes | 70% | \$2.00 to \$3.00 |
| Arkansas | 1963 | 35,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Connecticut | 1957 | 34,700 | 34,670 | -- | No | 5% | First | Yes | Yes | 10-15% | -- |
| Delaware | 1952 | 7,000 | 7-8,000 | -- | In fields where no control practiced | 6% of total production 80-100% first cutting some second | First, some second | Infrequently (pea aphid control) | Yes | 80% | \$4.50 |
| Georgia | 1958 | 40,000 | 12,000 | Weevil major factor in reduction | Yes | 33% (of remaining acreage) | First & second - stand killed 2 years if not treated | No | Yes | 90% | Fall \$3.85 to \$4.80 Spring \$7.75 |
| Kentucky | 1959 | 305,000 | 320,000 | -- | Some | -- | First & second | Seldom | No | None | -- |
| Maryland | 1952 | 73,000 | 92,000 (high of 108,000 in 1959) | Possibly 5,000 fewer acres - Another factor seven percent fewer animals | Yes, heavy on first cutting | Four percent in addition to the 5,000 acres | Mainly first, some second | Limited for meadow spittlebug and potato leafhopper | Yes | 90-95% | \$2.50 fall to \$5.00 spring |
| Massachusetts | 1957 | 34,301 | 25,375 (1959) | None | Locally - not State-wide | 5-20 locally | First & second | No | Yes | 10-12% | \$2.00 to \$3.00 |
| Mississippi | 1963 | 10,000 | 10,000 | Indication that weevil need control to continue to grow alfalfa | Yes | 50% (In cases) | First cuttings | Some for armyworms | -- | Unknown | 1963 growing season - some cost \$2.00 |
| New Hampshire | 1963 | 35-40,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| New Jersey | 1952 | 61,198 (1949) | 86,667 (1959) | -- | Yes unless controlled | 30% unless controlled | First & second | Occasionally for aphid or spittlebug | 75% | 90% | \$2.75 |
| New York | 1955 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| North Carolina | 1955 | 90,000 | 40,000 | 100% responsible | Yes | 50% | First, some times second | No | Yes | 98% | \$3.20 |

(Continued on page 1306)

Alfalfa Weevil in the Eastern United States (continued)

| State | Year | Alfalfa acreage year prior to last crop | Influence of weevil on acreage reduction | Has weevil reduced quality | Percent reduction by weevil | Cuttings affected | Were insecticides applied prior to first report | Are insecticides used for weevil control | Percent alfalfa acreage treated | Cost - all applications (per acre) |
|----------------|------|---|--|----------------------------------|-----------------------------|---------------------------|---|--|---------------------------------|------------------------------------|
| Ohio | 1960 | 189,000* (1960) | -- | Yes | 30% locally | 1962: first & second 1963 | Yes | Little | 1% | -- |
| Pennsylvania | 1952 | 580,000 | -- | Yes, if weevil is not controlled | -- | First & second | Yes | Yes | 70% | Fall treatment \$5.00 |
| Rhode Island | 1958 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| South Carolina | 1957 | 10,000 | -- | Slightly | 50% | First cutting primarily | No, except for white grubs | Yes | 98% | \$5.00 |
| Tennessee | 1959 | 180,000 | Definite influence although expected to increase | Yes, destroyed first crop | 20% | First mainly | No | Yes | 50% | \$2.50 |
| Vermont | 1962 | -- | None | Not as yet | Unknown | First | No | Not as yet | None | -- |
| Virginia | 1952 | 131,000 | -- | Yes in 1962 and 1963 | 10% (1963) | First mainly | No | Yes | 85% | \$2.50 - \$3.00 |
| West Virginia | 1954 | -- | Considerable | Yes | 50-90% in areas | First | Very few | Yes | 50-75% | \$2.25 |

* Acreage declining since 1956

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Business

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Cooperative

**ECONOMIC INSECT
REPORT**

Directed by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID abundant in Pottawatomie and Shawnee Counties, Kansas, in Kaw River Valley since recent rains, and populations high on new plantings of alfalfa in Weld County, Colorado. Also severe on alfalfa near Amelia, Amelia County, Virginia. Surveys for spotted alfalfa aphid this year in Washington negative; first time in several years that infestations have not been found in southeastern part of State in early fall. (pp. 1309, 1320). PEA APHID heavy on alfalfa in Bernalillo and Sandoval Counties, New Mexico, and moderate to heavy locally along Snake River south of Asotin, Washington. Populations decreased in northeast Ohio and in Wisconsin. (p. 1309).

Few GREENBUGS found on wheat in south central and north central Oklahoma; Logan, Lincoln and Larimer Counties, Colorado; and in 16 panhandle counties of Texas. WHEAT CURL MITE found on fall planted wheat in Logan County, Colorado, and symptoms of wheat streak mosaic present in Logan, Sedgwick, Phillips and Washington Counties, same State. (pp. 1309, 1320). Heavy populations of a COCCID (*Chortinaspis subchortina*) damaging St. Augustine grass lawns in Bell County, Texas; only third record of species in State. (p. 1311). SOUTHWESTERN CORN BORER survey in Arkansas showed percent of lodged corn 2.2 percent compared with 12.3 percent in 1962. (p. 1311). Resistance tests in South Dakota showed various degrees of resistance by WESTERN CORN ROOTWORM to the chlorinated hydrocarbon insecticides in southeastern parts of the State. (p. 1311). HESSIAN FLY low in southeastern Kansas, and wheat stems and stubble infested by WHEAT STEM SAWFLY easily found in sections of Auglaize County, Ohio. (p. 1312).

A LEAFHOPPER (*Homalodisca insolita*) found in locality of Pinellas County, Florida; southernmost record of this proven vector of phony peach disease in State. (p. 1313).

Adults of PINK BOLLWORM continue to be collected in sex lure traps near Coolidge Airport in Pinal County, Arizona. (p. 1315).

In California, MOUNTAIN PINE BEETLE killing sugar pines in several areas, and FIR ENGRAVER causing heavy kill of white fir in Dodge Ridge area of Stanislaus National Forest. In addition, SAGEBRUSH DEFOLIATOR reported severely damaging approximately 20,000 acres of sagebrush lands in Modoc County; approximately 50 percent of sage killed in area. (pp. 1315, 1316).

DETECTION

A PSOCID (*Ectopsocus maindroni*) found established in Hawaii, a new State and U.S. record. (p. 1324).

New county records of significance include ELM LEAF BEETLE in Dickinson County, Kansas (p. 1316), and a BROWN SPIDER (*Loxosceles reclusa*) in Pulaski County, Illinois (p. 1319).

CORRECTIONS and ADDITIONAL NOTES

See page 1320.

SPECIAL REPORTS

Corn Rootworm Situation in Iowa (map). (p. 1310).

Status of the Screw-worm in the Southwest. (p. 1318).

Hawaiian Insect Notes. (p. 1323).

Insects Not Known to Occur in the United States (Indian cotton jassid, Empoasca devastans Distant). (p. 1325).

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

WEATHER BUREAU 30-DAY OUTLOOK

NOVEMBER 1963

The Weather Bureau's 30-day outlook for November calls for temperatures to average below seasonal normals in States along the Atlantic and Gulf coasts and in the Appalachian region. Above normal averages are predicted in the western Great Lakes, and also in the western half of the Nation except for near normal in Pacific and southern border States. In areas not specified, about normal temperatures are indicated. Precipitation is expected to remain deficient in the eastern half of the Nation, except for near normal rainfall along the Atlantic and Gulf coasts. Subnormal precipitation is also anticipated over the northern Rockies and in the far Southwest. Elsewhere in the western half of the country near normal amounts are indicated except above normal along the central and northern Pacific coast.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING NOVEMBER 4

At the beginning of the week, a mound of polar continental air lay over the Country's midsection and was pushing a cold front southeastward toward the Gulf and Atlantic coasts. It brought light sprinkles to the lower Missouri and Ohio River Valleys and subfreezing temperatures throughout most of the southeast. The cold air, flowing across the warm waters of the Great Lakes, triggered numerous thunderstorms and a few tornadoes and waterspouts. On Monday, October 28, a storm approached the northwestern coast of Washington. It brought rain to the coastal locations and snow to the higher elevations. As the cold front moved inland, it brought snow to the northern and central Rocky Mountains and a few flurries to the northern Great Plains. Leadville, Colorado, received 7 inches and Lander, Wyoming, received 2 inches. A few light flurries occurred as far south as Madison, Wisconsin. As the storm crossed the Great Plains and moved southeastward, it produced rains over most of the Nation from the Great Plains eastward to the Atlantic coast. Snowfall in Pennsylvania ranged from light flurries up to 6 inches. Heavier snowfall occurred in New England. Greenville, Maine, received 15 inches. Some other locations in Maine received up to 9 inches of snow. The cold front, as it pushed southeastward, dropped the temperatures to new lows for the season. Subfreezing temperatures occurred as far south as San Angelo, Texas, and the coasts of Alabama and Georgia. The cold temperatures ended the growing season for tender vegetables. The cold front passage was accompanied by widespread light rains over most of the northeast quarter of the Nation on Thursday, from Texas to the Great Lakes and eastward (except Florida) on Friday, and from Michigan to North Carolina and northeastward on Saturday. The light rains did not end the drought but reduced the danger of forest fires. Another storm approached the Far Northwest on Friday. It brought more precipitation to Washington, Oregon, (continued on page 1322)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WASHINGTON - Surveys have been negative this year. This is first time in several years, infestations have not been found in southeastern part of State in early fall. (Harwood, Telford). NEVADA - Averaged 1 per sweep in Moapa Valley alfalfa fields, Clark County. (Zoller). NEW MEXICO - Generally light in Chaves and Eddy County alfalfa fields. (N. M. Coop. Rpt.). OKLAHOMA - Large populations depositing moderate to heavy amounts of honeydew on alfalfa in Garvin, Murray and Bryan Counties; counts up to 1,250 per 10 sweeps. Moderate counts reported in Cotton County, with 350 per 10 sweeps noted in Tillman County, both in southwest. (Okla. Coop. Sur.). KANSAS - Abundant in Pottawatomie and Shawnee Counties in Kaw River Valley since recent rains. (Gates). Counts ranged from less than one to 200 per sweep in southeastern area. Some chemical controls have been applied in extreme southeast. (Peters). SOUTH DAKOTA - Averaged 64 per 100 sweeps in southeast area alfalfa. Gross morphology of species indicates that sexual form may be present, although thorough examination of aphids has not been completed at this time. (Hintz). WISCONSIN - Populations decreased; numbers in observation field at Brodhead dropped to 300-500 per sweep October 29 and 200 per sweep October 31. Alates in this field still averaged 14 per sweep on latter date. Dead aphids common, but causative agent unknown. (Wis. Ins. Sur.). VIRGINIA - All stages severe on alfalfa near Amelia, Amelia County. Alfalfa too short for hay but population completely defoliated plants; field has musty odor. (Holmes, Oct. 26).

PEA APHID (*Acyrtosiphon pisum*) - WASHINGTON - Infestations range moderate to heavy in isolated alfalfa fields along Snake River south of Asotin, Asotin County. (Harwood, Telford). NEVADA - Averaged 2-3 per sweep in alfalfa in Moapa Valley, Clark County. (Bechtel, Zoller). NEW MEXICO - Heavy in alfalfa in Bernalillo and Sandoval Counties. Lighter infestations noted in alfalfa fields in Dona Ana, Chaves and Eddy Counties. (N. M. Coop. Rpt.). WISCONSIN - Populations decreased noticeably; mummies prevalent in many alfalfa fields. Noticeable increase observed in fields having high populations of spotted alfalfa aphid, however. (Wis. Ins. Sur.). OHIO - Populations decreased in northeast area alfalfa fields; ranged 0-25 (average 5) per sweep in Wayne County. Decreasing in alfalfa throughout central area; averaged 2 per sweep near Urbana, Champaign County, and 4 per sweep near Wapakoneta, Auglaize County. Parasites and predators building up in many alfalfa fields. (Lyon).

GREENBUG (*Schizaphis graminum*) - TEXAS - Survey conducted October 28-31 in following 16 panhandle counties: Randall, Deaf Smith, Castro, Parmer, Oldham, Potter, Armstrong, Donley, Collingsworth, Wheeler, Gray, Carson, Swisher, Briscoe, Floyd and Hale. Greenbug present in all counties. Ranged 0-15 per linear foot of drill row in Potter, Deaf Smith, Castro, Parmer, Briscoe, Floyd and Swisher Counties. Generally, however, populations less than 1 per linear foot. Few predators noted. Greenbug also present on western wheatgrass. Wheat, generally, in good condition. (Daniels). OKLAHOMA - Occasional specimen found in wheat fields in Garvin and Bryan Counties (south central), and in Payne and Pawnee Counties (north central). (Okla. Coop. Sur.).

YELLOW SUGARCANE APHID (*Sipha flava*) - OKLAHOMA - Light numbers observed on wheat in Yuba area, Bryan County (south central). (Okla. Coop. Sur.).

A ROOT APHID (*Rhopalosiphum rufiabdominalis*) - KANSAS - Found on roots of wheat plants in Lane and Wichita Counties, west central. Secondary root systems not developed due to lack of moisture. (Gates).

TARNISHED PLANT BUG (*Lygus lineolaris*) - OHIO - Averaged 20 per 50 sweeps in field of alfalfa in Champaign County, west central. Populations lower in all other fields. (Lyon). WISCONSIN - Adults numerous on late flowers and in alfalfa fields in southern areas; few nymphs present. (Wis. Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Averaged 1 nymph per sweep in many alfalfa fields in southern area. Few adults present; nymphal counts run as high as 8 per sweep. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Counts per 10 sweeps in alfalfa ranged 1-5 in Garvin and 6-12 in Bryan Counties, south central. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Moderate adult numbers still being found in west central area alfalfa in spite of cool temperatures. Adults per sweep averaged 2.5 in Champaign County and 1 in Auglaize County in old alfalfa fields. (Lyon).

A COCCID (Chortinaspis subchortina) - TEXAS - Heavy populations damaging St. Augustine lawns in Bell County. This is third record of species in State; previously reported on St. Augustine grass in Hidalgo County and on seacoast bluestem in Kenedy County. (Decker, McDaniel).

ALFALFA CATERPILLAR (Colias eurytheme) - WISCONSIN - Larvae continue common in many alfalfa fields; average as high as 1 per sweep. (Wis. Ins. Sur.).
OKLAHOMA - Ranged 1-3 per 10 sweeps in alfalfa in Garvin, Murray and Bryan Counties (south central) and Tillman County (southwest). (Okla. Coop. Sur.).
NEVADA - Numerous adults, but very few larvae and pupae, found in alfalfa in Moapa Valley, Clark County. (Bechtel, Zoller).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - ARKANSAS - Survey showed percent of lodged corn, by district, as follows: Northwest (4 counties), 2.8; north central (4 counties), 0.4; northeast (6 counties), 1.7; east central (7 counties), 3.1. State average was 2.2 percent compared with 12.3 for 1962. Lower percent of lodged corn in 1963 is due, in part, to a smaller percentage of corn planted in June and July than in 1962 and past years; another influencing factor, especially north of Arkansas River, was low survival of overwintering larvae resulting from abnormally cold weather during winter of 1962-1963. (Ark. Ins. Sur.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Light to moderate on second-growth grain sorghum in Brazoria County. (Teetes).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Light, scattered populations remain active in alfalfa in south central and southwest areas. (Okla. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Light numbers reported on seedling alfalfa in Roger Mills County, west central. (Okla. Coop. Sur.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - Populations continue to decrease; adults averaged 4 per 50 sweeps in a field of alfalfa in Shelby County, west central. (Lyon).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Resistance tests run at the Northern Grain Insect Research Laboratory by Dr. E. W. Hamilton showed various degrees of resistance by this pest to the chlorinated hydrocarbon insecticides in southeastern parts of the State. (Hintz).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Ranged 4-8 per 10 sweeps in Bryan County alfalfa, south central area. (Okla. Coop. Sur.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Adults ranged 8-13 per 100 sweeps in Sandoval County alfalfa fields. (N. M. Coop. Rpt.).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Data collected to November 1 shows very high adult mortality in such products as baled hay, baled straw and stored grain; however, very few live beetles have been recovered recently from

each of these products when handled according to conventional farm methods. Hay and straw from which these beetles were recovered were harvested in May of this year from heavily infested fields near Galien, Berrien County. (Turner).

WIREWORMS - NORTH CAROLINA - Melanotus communis and Conoderus lividus collected from 2 adjacent fields near Pantego, Beaufort County. These large fields in corn this year; reported to have been heavily damaged by these pests despite use of recommended controls. Field sifting of approximately 3 square yards of soil produced 13 larvae. Soil dark and high in organic material. (Jones, Mount).

GRASSHOPPERS - OKLAHOMA - Spot checks in wheat field margins in panhandle counties showed no damage; 2 per square yard highest count. (Okla. Coop. Sur.). NORTH DAKOTA - Egg survey in north central and central districts covered only fields showing economic adult infestations; results aligned closely with adult survey. Highest egg counts found in alfalfa, sweetclover and soil bank fields. Development ranged clear to segmented, but most in coagulated stage. Melanoplus bivittatus, M. sanguinipes, M. packardii, M. femurrubrum and M. differentialis dominant species. Parasitism and predation by bee flies and carabid beetles ranged up to 27 percent; average 6 percent. About 4 percent of eggs not viable, due to lack of moisture. (Brandvick). WISCONSIN - Grasshoppers, primarily M. femurrubrum, decreased noticeably; females continue to develop eggs. (Wis. Ins. Sur.). OHIO - Melanoplus femurrubrum and M. differentialis populations decreasing rapidly throughout northwest, central and west central areas. M. femurrubrum numbers very low in west central area; no M. differentialis adults found. (Lyon).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Infestation in southeast district ranges 0-4 percent of wheat plants infested; less than 20 percent of fields infested. In extreme southeast and east portions of this district, drought conditions were such that wheat did not emerge in time to be infested. Dry weather also was not favorable for fly emergence. (Peters). OHIO - Puparia easily found between leaf sheath and stalks of volunteer wheat plants throughout Marion, Morrow, Hardin, Auglaize, Shelby and Logan Counties in central and west central areas. Few autumn planted wheat fields examined with negative results. Many wheat plants not yet emerged because of drought conditions. (Lyon).

WHEAT STEM SAWFLY (Cephus cinctus) - OHIO - Infested wheat stems and stubble easily found in sections of Auglaize County, west central area. (Brown, Noble).

WHEAT STEM MAGGOT (Meromyza americana) - KANSAS - An occasional infested wheat plant noted in southeast area. (Peters).

FRUIT INSECTS

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - OHIO - Heavy on unsprayed apple orchard near Columbus, Franklin County; 60-75 percent of leaves mined on some trees. (Forsyth, Lyon).

PEACH TREE BORER (Sanninoidea exitiosa) - MARYLAND - Light in apple trees at Fairland, Montgomery County. (U. Md., Ent. Dept.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OHIO - Nymphs and adults light to moderate in unsprayed apple orchard near Columbus, Franklin County; averaged 25-30 per leaf. Many dormant eggs noted on twigs. Also found on adjacent autumn-planted wheat fields. (Lyon).

WOOLLY APPLE APHID (Eriosoma lanigerum) - OHIO - Infested apple tree near Steubenville, Jefferson County. (Knight, Holdsworth).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Reported earlier as attacking limbs and fruit of apple and pear in Auburn, now appears to have destroyed 50-75

percent of these 15 to 20-foot trees; trees 7-10 years old. Infestation appears to be one of most severe observed in many years and was first noted 3 years ago. (Bagby).

A LEAFHOPPER (Homalodisca insolita) - FLORIDA - Single specimen found in 100 sweeps of grasses and weeds near Port-of-Call, Tierra Verde, Pinellas County, October 24. This is southernmost record in State for this proven vector of phony peach disease. (Mead).

PEAR-SLUG (Caliroa cerasi) - NEVADA - Medium to heavy on cherry in Gardnerville, Douglas County. (Rivers).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Eggs easily found in several central area apple orchards; many treated and untreated orchards infested. Few crawlers still observed on unsprayed orchard near Columbus, Franklin County. (Lyon).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Large numbers continue to emerge from seedling and Stewart pecans in Coosa-Tallapoosa-Chambers County area. Infestation appears greater in small orchards and isolated plantings in these counties in foothills of Piedmont Plateau than in coastal area further south. (McQueen).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Continues a problem on citrus in Yuma, Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

AN ANTHICID BEETLE (Notoxus constrictus) - CALIFORNIA - Medium on orange trees in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - CALIFORNIA - Populations medium on orange trees in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

A SNOW SCALE (Unaspis citri) - FLORIDA - Moderate to severe on sweet orange and grapefruit at Melbourne, Brevard County. (Levan, Holley; Oct. 10).

BLACK CITRUS APHID (Toxoptera aurantii) - ARIZONA - Small numbers present in few citrus orchards in Maricopa County. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Caused light damage to citrus in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Ten adults collected in McPhail traps at Nogales; this makes total of 28 collected this year. Fruit inspections continue negative. (Ariz. Coop. Sur.).

A GRAPE LEAFHOPPER (Erythroneura elegantula) - CALIFORNIA - Nymphs and adults medium on grapevines in Ukiah, Mendocino County. (Cal. Coop. Rpt.).

A WOOD BORER (Prionus sp.) - NORTH CAROLINA - Larvae present in rootstock of blueberry in Brunswick County. Bushes reported dying. Considerable damage noted on specimen examined. Det. by H. H. Neunzig. (Bickford).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Populations increased in most lettuce-producing areas of Pinal, Yuma and Maricopa Counties. (Ariz. Coop. Sur.).
FLORIDA - Caused light to moderate damage to 35 percent of 200 cabbage plants at Sanford, Seminole County. (Desin).

BEEET ARMYWORM (Spodoptera exigua) - ARIZONA - Damaging lettuce fields in Yuma, Maricopa and Pinal Counties. Some controls applied. (Ariz. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Larvae medium in crowns of strawberry plants in Fallbrook, San Diego County. (Cal. Coop. Rpt.).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Adults active around pile of cull potato tubers on October 28 in infested area near Samaria, Monroe County; warm October undoubtedly favored continued field activity to unexpected late date. (Wells, Janes).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Extremely heavy on lima beans in home gardens in east central area; averaged 1 adult per linear foot. (McQueen). KANSAS - All stages found on garden beans in fair numbers in Doniphan County; 1 group of eggs per 3 plants and 10 larvae of all sizes per plant. Three adults found in each foot of row. Freeze of October 28 should stop activity. (Eshbaugh).

NITIDULIDS (Carpophilus spp.) - CALIFORNIA - C. hemipterus adults heavy on Hubbard squash in Madison and honeydew melons in Zamora, Yolo County. C. hemipterus and C. humeralis heavy in cantaloup fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - CALIFORNIA - Adults heavy on honeydew melons in Yolo, Yolo County. This beetle more prevalent this season than for several years. (Cal. Coop. Rpt.).

CABBAGE APHID (Brevicoryne brassicae) - ALABAMA - Continues extremely heavy on collards, cabbage and turnips in Lee County. Lady beetles apparently hibernating. (Canerday).

GREEN PEACH APHID (Myzus persicae) - TEXAS - Moderate populations damaging cabbage and turnips in Harris County. (Davis).

MELON APHID (Aphis gossypii) - CALIFORNIA - Medium on cantaloups in south Los Banos area, Merced County. This species in association with Macrosiphum euphorbiae and Empoasca sp. medium on banana squash in Bryte, Yolo County. (Cal. Coop. Rpt.).

APHIDS - WASHINGTON - Very large populations of apterae and alatae of Aphis fabae noted on random plants of sugar beets in Walla Walla, Walla Walla County. (Landis). CALIFORNIA - Adults and nymphs of Pemphigus sp. medium on sugar beets in Greenfield, Monterey County. (Cal. Coop. Rpt.). OHIO - Myzus persicae heavy on lettuce in Columbus greenhouse, Franklin County; averaged 100-150 per leaf. Controls necessary. (Lyon). GEORGIA - Unspecified species heavy on tomato in Gwinnett County. (Vanderford).

SOUTHERN GREEN STINK BUG (Nezara viridula) - FLORIDA - Severe on okra at Homestead, Dade County. (Todd, Oct. 14).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Isolated, medium infestation present on collards in Lee County. (Canerday).

A THRIPS (Frankliniella occidentalis) - CALIFORNIA - Nymphs and adults heavy on Hubbard squash in Yolo, Yolo County. (Cal. Coop. Rpt.).

LEAF MINER FLIES (Liriomyza spp.) - CALIFORNIA - Liriomyza sp., possibly pictella, medium in leaves of Hubbard squash in Yolo, Yolo County. Liriomyza sp. heavy in honeydew melons, in association with Drosophila melanogaster and Megaselia sp., at same location. (Cal. Coop. Rpt.). FLORIDA - Liriomyza sp. infesting 75 percent of 300 celery plants at Sanford, Seminole County. Damage ranged light to medium. (Desin).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - All gin-trash inspections in Logan, Okfuskee, Pawnee and Payne Counties positive; heaviest number, 81 larvae per 50 bushels, found in Logan County. All lint-cleaner inspections in southwest counties positive, with first specimens of season found in Kiowa County. This for period October 21-25. (Okla. Coop. Sur.). ARIZONA - Severe infestations still found at Solomon, Graham County. One larva found in gin trash at San Simon, Cochise County. Adults continue to be collected in sex lure traps near Coolidge Airport, Pinal County. (Ariz. Coop. Sur.).

BOLLWORM (Heliothis zea) - ARIZONA - Continues active in Pinal and Maricopa County cotton fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - NEVADA - Heavy larval population in Pahrump Valley, Nye County, aided in defoliating cotton fields prior to picking. (Bechtel, Stater, Zoller).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Large numbers still evident in cotton fields in Pinal and Maricopa Counties. Migration to other hosts causing considerable problems in many areas. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - NEVADA - Generally light and spotted in Moapa Valley, Clark County. (Bechtel, Zoller).

SPIDER MITES - NEVADA - Medium to heavy populations in many cotton fields in Moapa Valley, Clark County, beginning to decrease. (Bechtel, Zoller).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

MOUNTAIN PINE BEETLE (Dendroctonus monticolae) - CALIFORNIA - Infesting groups of sugar pine poles in 2,000-acre stand in Whiskey Falls-Peckinpah area, Sierra National Forest. Over 100 young trees already killed, with damage increasing. (F. W. Sharp, USFS). Appearing in Bear River area, Amador County. Salvage operations in progress; 400-acre area of sugar pine involved. (W. O. Cotter, USFS). Sanitation salvage sales being used to stem infestation threatening 6,400 acres of sugar pine and 1,200 acres in Dodge Ridge areas, Stanislaus National Forest, where some 1,600 trees killed. (Cal. Coop. Rpt.).

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Damaging ponderosa pines in 100-acre stand in Mokelumne, Amador County, and 80-acre stand in Barney Ridge, El Dorado County. Direct control being used where area to steep to log; salvage logging being used in other areas. (W. O. Cotter, USFS).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - GEORGIA - Infestations moderate in pines in Colquitt and Thomas Counties. (Elder, Oct. 24).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - Causing heavy kill of white fir in Dodge Ridge area, Stanislaus National Forest. Approximately 14,000 trees killed in 22,000-acre stand. (G. A. Rolloff, USFS).

A WEEVIL (Agronus cinerarius) - CALIFORNIA - This species and Physokermes sp., probably concolor, infesting white fir in 60 to 70-acre stand in Cow Creek, Plumas National Forest. Very little is known about these 2 pests; where they occur in heavy populations, severe damage results. (P. Intorf, USFS).

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - CALIFORNIA - Defoliating white fir in Iron Mountain Road area, El Dorado National Forest; approximately 100 acres involved. (Parker, Reese, Hill; USFS).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Larvae and pupae reported in 20 percent of buds in one planting of 4 to 5-year-old pines in Chilton County. Numerous undetermined aphids also feeding on pine needles in this orchard. (Helms).

WHITE-PINE APHID (Cinara strobi) - PENNSYLVANIA - Depositing much honeydew on white pine at State College, Centre County. (Udine, Oct. 21).

A PINE APHID (Schizolachnus piniradiatae) - PENNSYLVANIA - Very heavy on red pine at State College, Centre County; egg laying in progress. Det. by J. O. Pepper. (Pepper).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Heavy on Scotch pine and spruce in Wooster, Wayne County, northeast. (Neiswander).

GRASSHOPPERS - CALIFORNIA - Causing severe defoliation of ponderosa pine reproduction and native shrubs in Mill Flat Creek area, Sequoia National Forest. Some 250 trees, plus native shrubs, affected in 5-acre area. (R. W. White, USFS).

A DOUGLAS-FIR NEEDLE MINER (Contarinia pseudotsugae) - WASHINGTON - Infesting needles of Douglas-fir at Pullman, Whitman County. (Dodge).

A PINE NEEDLE GALL FLY (Cecidomyia pinirigidiae) - ALABAMA - Infestations numerous on loblolly and slash pine used as ornamentals in Lee County. (McQueen).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - CALIFORNIA - Severely damaging approximately 20,000 acres of sagebrush lands in area 6 miles southwest of Alturas, Modoc County. Approximately 50 percent of sage has been killed in this area. (E. T. Dowling, CDF).

FALL CANKERWORM (Alsophila pometaria) - NORTH DAKOTA - Females continue active in southeast. In Fargo, Cass County, 2,200 counted on single elm; this is cumulative figure over past 3-4 weeks. (N. D. Ins. Sur.; Post).

A TENT CATERPILLAR (Malacosoma sp.) - TEXAS - Large numbers of egg cases reported on oak trees in Travis County. Examination of 5 egg masses showed 90 percent viability of overwintering larvae. (Tex. Coop. Rpt.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continues active throughout State. (Okla. Coop. Sur.). IOWA - Very active in western and southern areas this fall. (Iowa Ins. Inf., Oct. 25).

ELM LEAF BEETLE (Galerucella xanthomelaena) - KANSAS - Damaging elms in Dickinson County, central area. This is a new county record. (Marvin, Oct. 24).

GIANT BARK APHID (Longistigma caryae) - DELAWARE - Adults and freshly laid eggs very abundant on oak twigs in an area of New Castle County. (Kelsey).

A WHITEFLY - GEORGIA - Moderate on cottonwood in Crisp County. (Turner, Taylor).

BEEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae heavy on chrysanthemum and carnation plants in nursery property in Salinas, Monterey County. (Cal. Coop. Rpt.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Feeding on blossoms of dahlia and other ornamentals in Albuquerque area, Bernalillo County. (N. M. Coop. Rpt.).

APHIDS - PENNSYLVANIA - At State College, Centre County, Liosomaphis berberidis heavy and depositing much honeydew on barberry (Udine, Oct. 28) and alates of Aphis crataegifoliae heavy on thorn-apple (Pepper, Oct. 28). Both species det. by J. O. Pepper. Unspecified species very abundant on many hosts. (Udine). MARYLAND - Winged adults and nymphs of undetermined species infesting Russian-

olive (Elaeagnus angustifolia) at Princess Anne, Somerset County. (U. Md., Ent. Dept.). GEORGIA - An unspecified species heavy on rose in Gwinnett County. (Vanderford). OHIO - Periphyllus lyropictus heavy on Norway maples throughout west central area. (Lyon). Undetermined species continue to infest willows near Newark, Licking County, central area. (Scheetz, Holdsworth). UTAH - Unspecified species necessitate weekly controls in university greenhouses at Logan, Cache County. (Knowlton). NEVADA - Capitophorus hippophaes heavy on Russian-olive (Elaeagnus angustifolia) nursery stock at the State Tree Nursery in Sparks, Washoe County. (Bechtel, Christner).

TARNISHED PLANT BUG (Lygus lineolaris) - IOWA - Feeding on chrysanthemum, zinnia and marigold; damage noticeable on chrysanthemums. (Iowa Ins. Inf., Oct. 25).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - Heavy on albizzia trees in Saratoga, Santa Clara County. (Cal. Coop. Rpt.).

AZALEA WHITEFLY (Pealius azaleae) - ALABAMA - Numbers increasing on azaleas in Lee County. (McQueen).

COCCIDS - ALABAMA - Fiorinia theae becoming heavy on Burford holly and infestations of lesser intensity common on camellia in east central counties. (Bagby et al.). FLORIDA - Pseudaulacaspis pentagona infested Koelreuteria paniculata, stem of Allamanda sp. and Ligustrum sp. at Eatonville, and Ligustrum sp. at Orlando, Orange County (Crews, Oct. 23-24); Fiorinia theae severe on leaves of Camellia sp. at Clermont, Lake County (Brown, Fatic; Oct. 21); Ceroplastes floridensis severe on stem and leaves of Ilex cornuta at Zellwood, Orange County (Mugrove, Oct. 24). VIRGINIA - Unaspis euonymi heavy on euonymus at a location in Walters, Isle of Wight County. (Amos, Johnson; Oct. 24). UTAH - Unspecified species infesting sansevieria and aralia in university greenhouses at Logan, Cache County. (Knowlton). CALIFORNIA - Saissetia nigra medium on daphne nursery stock in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

TWO-STRIPED WALKINGSTICK (Anisomorpha buprestoides) - GEORGIA - Moderate on azaleas in Pierce County. (Camp, Oct. 24).

A LEAF MINER FLY (Phytobia maculosa) - FLORIDA - Severely infested chrysanthemums at Bradenton, Manatee County. (Kelsheimer, Mead; Oct. 23). Unusually heavy on untreated plants this season; parasites at minimum, much below last year. (Kelsheimer).

DOGWOOD CLUB-GALL MIDGE (Mycodiplosis alternata) - ALABAMA - Common on native dogwoods and in ornamental plantings in central and southern areas. (Barwood et al.).

CURLED ROSE SAWFLY (Allantus cinctus) - OHIO - Severe damage noted on roses throughout western and central areas; larvae defoliating plants. (Lyon).

CYCLAMEN MITE (Steneotarsonemus pallidus) - DELAWARE - Causing severe injury to African-violets at a location in New Castle County. (Bray).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Heavy on pittosporum plants in Clearlake Highlands area, Lake County. (Cal. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - ALABAMA - Present but not heavy on azaleas and holly in Lee County. (McQueen).

HORN FLY (Haematobia irritans) - GEORGIA - Light on herd of beef animals in Spalding County. Herd has access to backrubber. (Roberts). OKLAHOMA - Populations decreased considerably in Stillwater area, Payne County, with 25-50 per head on yearling steers and 15-25 per head on cows. Ranged 100-500 per head on cows in Bryan County. Populations moderate to heavy in Cotton (southwest), Garvin (south central), and Mayes (north central) Counties. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Averaged 1 per head on animals in Stillwater area, Payne County. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Continues active in sheltered areas. (Okla. Coop. Sur.).

BED BUG (Cimex lectularius) - OHIO - Heavy populations observed in poultry house near Wooster, Wayne County, northeast; present in cracks and crevices in nest boxes. (Slesman, Lyon).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - Causing concern to homeowners in Mayes County; infestations present in lawns and homes. (Okla. Coop. Sur.).

YELLOW JACKETS - GEORGIA - Very abundant over State. (Lund, Johnson; Oct. 24).

A BROWN SPIDER (Loxosceles reclusa) - ILLINOIS - Reported for the first time in Pulaski County October 30. (Ill. Ins. Rpt.).

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Continues to cause some concern to homeowners in Stillwater area, Payne County (north central). (Okla. Coop. Sur.). OHIO - Common on dogs during past few weeks near Sidney, Shelby County, west central area. (Berlekamp).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - First activity of season noted in Cherokee County area, east central. (Okla. Coop. Sur.).

EAR TICK (Otobius megnini) - TEXAS - Heavy, localized populations reported from various domestic animals in Lampasas County. (Thomas). UTAH - Infesting saddle horses at Logan, Cache County, and cattle in western Iron County. (Knowlton).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Causing nuisance on 2 properties in Rockville, Montgomery County; swarming on buildings. (U. Md., Ent. Dept.). VIRGINIA - Abundant at a location in Lynchburg, Campbell County (Oct. 28), and a location in Roanoke, Roanoke County (Oct. 27). (Tarpley). NORTH CAROLINA - Annoying at a location in Wilkes County. (Pratt, Robertson). OHIO - Adults continue to annoy homeowners throughout central and northwestern areas. (Rings, Blair). UTAH - Annoyance increasing with colder nights in northern communities; invading schoolrooms at Richmond, Cache County. (Knowlton).

RED FLOUR BEETLE (Tribolium castaneum) - ALABAMA - Becoming pest of cereals and other food stuffs in pantries at several locations. (McGlohon et al.).

SQUARE-NECKED GRAIN BEETLE (Cathartus quadricollis) - ALABAMA - Reported as pest of cereals and other foods in pantries in several locations. (McGlohon et al.).

LESSER GRAIN BORER (Rhyzopertha dominica) - CALIFORNIA - Heavy infestation in cupboards and medicine chest in residence in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

BROWN BANDED COCKROACH (Supella supellectilium) - DELAWARE - Several heavy infestations in homes reported in northern area of New Castle County. (Burbutis). MARYLAND - Infesting kitchen of home at Linthicum Heights, Anne Arundel County. (U. Md., Ent. Dept.).

CLUSTER FLY (Pollenia rudis) - OHIO - Controls necessary at Eaton, Preble County (Blair); adults beginning to cause annoyance in many homes in southwestern area (Lyon). UTAH - Numerous in home at Orem, Utah County. (Knowlton).

HOUSE FLY (Musca domestica) - UTAH - Troublesome in restaurants, grocery stores, homes and churches in many communities. Troublesome in large cafeteria at Logan, Cache County. (Knowlton).

CARPENTER BEE (Xylocopa virginica) - MARYLAND - Minor infestation reported in porch at Baltimore. (U. Md., Ent. Dept.).

STORED-PRODUCT INSECTS

Stored Grain Insects in Wyoming - Light adult numbers of CONFUSED FLOUR BEETLE (Tribolium confusum), RED FLOUR BEETLE (T. castaneum) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) each found in 2 of 11 farm granaries inspected in Platte and Converse Counties. Adults of CADELLE (Tenebroides mauritanicus) were light and active in 1 of these same 11 granaries. (Marks).

YELLOW MEALWORM (Tenebrio molitor) - OHIO - Larvae heavy in cornmeal at elevator in Champaign County. (Lyon).

INDIAN-MEAL MOTH (Plodia interpunctella) - OHIO - Light webbing damage and low larval populations noted at elevator in Fort Laramie, Shelby County. (Lyon).

MISCELLANEOUS INSECTS

BANDED WOOLLYBEAR (Isia isabella) - ALABAMA - Great numbers migrating in several locations in southern part of Mobile County during past 2 weeks. (Seibels, Bolton).

LESSER MEALWORM (Alphitobius diaperinus) - OHIO - Larvae and adults moderate in poultry litter near Wooster, Wayne County. (Lyon).

A SOLDIER FLY (Hermetia illucens) - MARYLAND - Infesting decayed sweetpotatoes at Ridgley, Caroline County. (U. Md., Ent. Dept.).

CORRECTIONS

CEIR (40):1199 - Agricultural Pests - Total: second column, Control costs, should read 89,083,473 instead of 181,983,973 and last column, Estimated Overall Loss, should read 263,189,376 instead of 262,512,276. (California Losses).

CEIR (40):1200 - Agricultural and Animal Pests - Total: second column, Control Costs, should read 89,124,573 instead of 182,025,073. (California Losses).

ADDITIONAL NOTES

COLORADO - WHEAT CURL MITE (Aceria tulipae) found on fall planted wheat in Logan County. Symptoms of wheat streak mosaic present on wheat in Logan, Sedgwick, Phillips and Washington Counties. (Jenkins, Dickens). Trace numbers of GREENBUG (Schizaphis graminum) present on fall planted wheat in Logan, Lincoln and Larimer Counties. (Hantsbarger, Jenkins). SPOTTED ALFALFA APHID (Therioaphis maculata) populations high on new plantings of alfalfa in Weld County; controls recommended in some fields. (Bayer). Trace numbers observed in Larimer, Logan and Sedgwick Counties. (Hantsbarger, Jenkins, Jarvis).

LIGHT TRAP COLLECTIONS

| TEXAS Brownsville 10/26-30 Waco 10/26-11/1 | WISCONSIN Middleton 10/23-30 Madison 10/23-30 De Forest 10/22-29 | Temp., ture* | Precipi- tation | Type of trap* | Killed insects | | Killed plants | | Killed animals | | Killed insects | | Killed plants | | Killed animals | | Major crop** | |
|--|---|-----------------|--------------------|------------------|----------------|------------|---------------|------------|----------------|------------|----------------|------------|---------------|------------|----------------|------------|-----------------|--|
| | | | | | Number | Percentage | Number | Percentage | Number | Percentage | Number | Percentage | Number | Percentage | Number | Percentage | | |
| | | | | 6 BL | 73 | 97 | 27 1616 | 104 | 30 | 9 | 336 | 35 | | | | | | |
| | | | | BL | 21 | 85 | 46 1741 | 39 | 25 | | | 12 | | | | | | |
| | | | | BL | 16 | | 88 | 8 | | | | 21 | | | | | | |
| | | | | BL | 38 | | 160 | 19 | | | 44 | | | | | | | |
| | | | | BL | 8 | | 280 | 9 | | | 9 | | | | | | | |

Weather of the week ending November 4 (continued from page 1308)
coastal California, and parts of Idaho, Utah, Wyoming, and Colorado.

Hurricane Ginny, which lay southeast of Hatteras, North Carolina, at the beginning of the week, brought 1 to 2 inches or more of rain to the eastern portions of New England. Amounts decreased to very light westward. Snowfall from Ginny reached 15 inches at Greenville, Maine, and some mountain areas received more. Temperatures for the week averaged near seasonal over most of the Nation. They averaged 1° to 2° above normal over much of the West. Temperatures at Phoenix, Arizona, averaged 8° above normal. Temperatures were cooler than normal over most of the eastern half of the Nation. Departures increased to -9° at Tallahassee, Florida. A few areas received no rain or only light sprinkles. These included a strip along the West Coast, from Arizona to Rocky Mountains and Minnesota, and the valley in Texas. Precipitation exceeded 1 inch along the northwest Pacific coast over the Appalachian Mountains in North Carolina, Virginia, and West Virginia, and over the eastern half of New England, Nantucket, Massachusetts, and Eastport, Maine, received more than 4 inches. Much of the "drought area" received from 0.05 to 0.50 inch. Snowfall accumulations reached 19 inches at Stevens Pass, Washington, and 58 inches in the Mt. Baker ski area. Snow fell in the higher areas of California, Idaho, Arizona, and the Rocky Mountain States. Snow flurries also occurred in the northern Great Plains and in the Lake region in addition to the northern Appalachians as previously mentioned. (Summary supplied by U.S. Weather Bureau).

* BL = blacklight; I = incandescent; MV = mercury vapor; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; IC = field corn; grain = see corn; gr. = grass; leg. = leguminous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 694th meeting of the Hawaiian Entomological Society held on October 14, 1963.

A MANTID (Orthodera sp.) - Two males and 3 females were caught during latter part of September in Ewa Beach area; all found on castorbean (Ricinus communis). Dr. J. W. Beardsley first reported this insect when one specimen was taken in a light trap at Waipio in September 1962. Since its collection, one female laid 3 batches of eggs. This mantid is now probably established in the State. Determination by J. W. Beardsley. (James Kim).

A CLUBIONID SPIDER (Cheiracanthium diversum Koch) - Collected on Kaunakakai, Molokai, and Kaunapau, Lanai, on September 26 and 27, respectively. (W. C. Mitchell). Collected at several localities on Molokai on September 25 and 26. The bite of this spider has caused serious discomfort to humans on Oahu in several recorded instances. (J. W. Beardsley). These are new island records.

SOUTHERN GREEN STINK BUG (Nezara viridula (L.)) - Survey conducted by W. C. Mitchell, Harry Nakao and J. W. Beardsley on Molokai and Lanai; infestations reported as follows: Molokai - Aug. 25; Tamura Farm, Kaunakakai, Molokai; confirmed. Sept. 26; again confirmed with collection of one male on tomatoes. Sept. 18; Burrows Farm, Palaa (Apana 1), one adult collected by R. Burrows and infestation confirmed Sept. 25 by finding numerous nymphs. Sept. 23; one adult collected by J. Uraichi at Kualapuu; further investigation revealed widespread infestation around California Packing Company housing. Sept. 24; single adult alighted on C. Lloyd at Hoolehua; no specimens found in area. Lanai - Aug. 27; found at Lanai City; confirmed on Sept. 27. Sept. 5; single female taken by N. Oda at Kaunapau. Sept. 27; infestation widespread in harbor area. (W. C. Mitchell).

A MYMARID WASP (Patasson calendrae (Gahan)) - Six releases of this species made on OAHU thus far; 4 between August 16 and 29 at the Kunia substation of the Hawaiian Sugar Planters Association; one on August 18 at Makiki Station; and one August 30 at the Wailua Agricultural Company. Last release consisted of 150 wasps; other 5 totaled 27 wasps. Establishment of P. calendrae in State uncertain, but breeding program to be continued vigorously in hope of establishment because recent observations in laboratory have shown that species will not only parasitize eggs of the BILLBUGS, Sphenophorus cariosus and S. venatus vestitus, in vitro, but it is equally effective on the eggs of NEW GUINEA SUGARCANE WEEVIL (Rhabdoscelus obscurus (Boisd.)), the most important pest of sugarcane in Hawaii. (F. Bianchi, C. E. Pemberton).

AN AGAONID WASP (Euprestina verticillata Waterston) - Numerous adults observed October 7 about Chinese banyan trees at residence in Honolulu; caused annoyance to household; trees sprayed. (H. Arnold, Jr., C. E. Pemberton).

AN ARMORED SCALE (Kuwanaspis sp.) - Collected on leaves of ornamental bamboo at 2 widely separated localities during latter part of 1962; at Hilo, Hawaii, on October 3 by J. W. Beardsley and at Nanakuli, Oahu, on December 8 by E. Shiroma. A number of species of Kuwanaspis which are confined to bamboos are known from the Orient, and one species, K. pseudoleucaspis (Kuwana), has been established in Hawaii for a number of years. The newly discovered species, which is new to Hawaii, closely resembles K. takahashii Takagi from Japan, except that the latter lacks the perivulvar pores found in the Hawaiian form. The newly discovered Kuwanaspis in Hawaii may be one of several described by the late Professor R. Takahashi from Taiwan, but pertinent literature or specimens for comparison are not available locally. Identification to genus made by J. W. Beardsley. (J. W. Beardsley).

A VESPID WASP (Polistes exclamans exclamans Viereck) - Collected at several places around Kaunakakai and at Paalau, Molokai, on September 25 and 26. This is the first record outside of Oahu in Hawaii. (J. W. Beardsley).

A CICADELLID LEAFHOPPER (Scaphytopius loricatus (Van Duzee))-Collected in vicinity of Kaunakakai, Molokai, on September 25 and 26; first record for Molokai. (J. W. Beardsley).

A DELPHACID LEAFHOPPER (Sogatella kolophon (Kirkaldy)) - Collected at Lanai City, Lanai, on September 27; first record for Lanai. (J. W. Beardsley).

A PSOCID (Ectopsocus maindroni Badonnel) - Found covering walls and cupboards of residence at Kailua, Oahu, on October 5. This species not recorded previously from Hawaii, although in early 1962, Dr. Mockford of Illinois sent specimens of this species that had been intercepted at Honolulu on material originating in Hong Kong. Species originally described from Arabia, and has since been reported from the Congo, Malaya, Hong Kong and Taiwan. Species apparently has wide range of habitats; it has been taken on vegetation, in drawers and closets of private houses, in a breakfast cereal packet, in cavity of a wild fig, from a young fish owl, and from quite deep inside the Batu Caves of Malaya. The infested house in Honolulu was on a recently constructed estate, and there had been trouble with mildew in this and neighboring houses, which also harbored the insects. Moldy shoes in a closet were infested, and it seems likely that the infestation was associated with the presence of mold. (W. B. Thornton).

A PARASITIC ENCARTID (Exoristobia philippinensis Ashmead) - Reared from puparia of Trichopoda pennipes F., a parasite of Nezara viridula (L.). This is first record of this hyperparasite attacking T. pennipes. A specimen of E. philippinensis was taken in a light trap at Honolulu in June 1961, according to B. D. Burks who made the determination. (C. J. Davis).

A PARASITIC TACHINA FLY (Trichopoda pennipes F.) - Adults observed October 9 at the mauka side of Wahiawa (elev. 1,200 ft.). One adult Nezara viridula had 237 T. pennipes eggs on its body. (W. C. Mitchell). A number of shipments of this stink bug parasite were sent from Gainesville, Florida, by Noel Krauss during September and October for breeding and distribution throughout Hawaii for biological control of N. viridula. (C. J. Davis).

A TARO LEAFHOPPER (Tarophagus proserpina Kirkaldy) - Found established on Molokai on September 25 by Harry Nakoa and W. C. Mitchell at Halawa and Wailau Valleys. (C. J. Davis).

A GIANT AFRICAN SNAIL (Achatina fulica Bowdich) - Reported from Kalaupapa settlement on Molokai by Koah Pekelo on September 25. On October 7, a resident of Manaloa turned over a living African snail (3 inches long) to Jack Blalock, thus making the second locality record for Molokai. (C. J. Davis).

RASPBERRY CROWN BORER (Bembecia marginata (Harris)) - Liberations of this aegeriid commenced at Kokee in September (total of 90 adults released) to control blackberry, a serious weed pest of Kokee and similar habitats in Hawaii. B. marginata was collected in Oregon by Noel Krauss. (C. J. Davis).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

INDIAN COTTON JASSID (Empoasca devastans Distant)

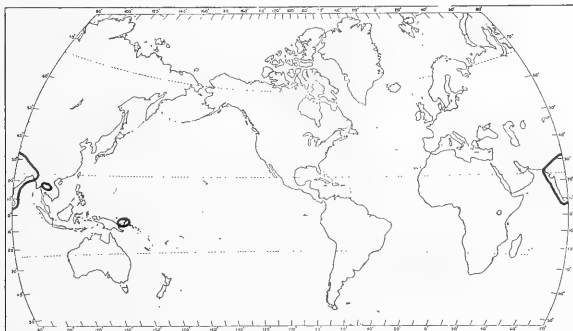
Economic Importance: This cicadellid is a well known major pest of cotton, and the most important representative of the genus Empoasca on the Indo-Pakistan sub-continent. The pest came into prominence early in the 1900's when it was found attacking American varieties of cotton newly introduced in the Punjab. Since then, it also has been reported as being serious on okra, potato, tomato and pepper. The latter three were severely damaged during 1957-58 in West Pakistan, principally in the southern regions of the country. E. devastans sucks the sap from cotton leaves causing them to shed. This results in a shedding of bolls by the plant and a reduction in the quality of lint produced by bolls remaining on the plant. Susceptible varieties often suffer a 25 percent or greater loss.

Among other species of Empoasca, E. kerri var. motti Pruthi and E. punjabensis Pruthi occur with E. devastans on cotton in the Punjab. Studies conducted during 1940-42 showed that populations of the latter were low in some localities early in the season, but the percentage increased slowly and reached a high figure towards the end of the season, and was more evident in the southwestern part of the Punjab than elsewhere.

Because of the seriousness of this pest on American varieties of cotton in the Punjab, preventive and protective measures became essential. Research studies, which began in 1937, indicated that the hairiness of the leaf vein appeared to be the most important factor in resistance, and the use of hairy varieties of cotton is recommended where infestations are heavy. Tree cotton and its varieties are practically immune.

Distribution: Ceylon, India, Pakistan (both East Pakistan and West Pakistan), Thailand (northern) and New Britain. Recent records (Ghauri, 1963) show that the distribution of E. devastans extends further to the east than recorded formerly, and approaches that of E. terraereginae Paoli, which is restricted to Queensland, Australia. The latter species is also a serious pest of cotton.

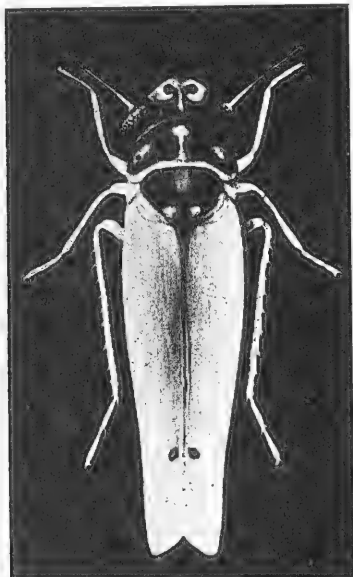
Hosts: Cotton, okra, potato, tomato, eggplant, pepper, kenaf hibiscus, linden hibiscus (emajagua), hollyhock, castorbean, sunflower, Hindu datura and cacao.



Distribution of Empoasca devastans Distant

Life History and Habits: The biology as studied in the Punjab is as follows: Full-grown cotton leaves, 35-45 days old, are preferred for oviposition. Infestation begins the latter part of June or early July, six weeks after planting, reaches a peak the last half of August and practically disappears by the beginning of November. High atmospheric humidity was found to be the chief factor favoring the increase. Eggs are laid inside the leaf veins, usually in the spongy parenchymatous layer between the vascular bundles and the epidermis and have an incubation period of about 4-11 days. A female may lay up to 29 eggs. Nymphs molt 5 times. This stage requires from 7 days in the fall to 21 days during the winter. Unmated adults of *E. devastans* lived for 90 days or longer, but paired adults did not survive beyond 5 weeks in summer and 7 in winter. A total of 11 generations a year have been observed, but adults are long-lived and the oviposition period is extended; therefore, there is considerable overlapping of broods.

Description: ADULT - Head, pronotum and scutellum pale ochraceous; vertex with two black spots on apical margin; face with the lateral areas more or less distinctly pale brownish; body beneath pale ochraceous; legs and tegmina pale greenish-ochraceous, the latter with a black spot near apex of each claval area; vertex of head short, concially rounded anteriorly, more than half as long as breadth between eyes; pronotum with three grayish-white spots near anterior margin; scutellum spotted with grayish-white; tegmina extending far beyond abdominal apex. Length excluding tegmina 3 mm. The above adult description is the original by W. L. Distant (3). The most noteworthy feature by which the adults can be recognized in the field is the presence of a prominent black spot on each of the tegmina near apex of the claval area. Seasonal changes in coloration are also present. The summer form is yellowish-green with antennae pale white, eyes a mosaic of green and white, tegmina with greenish tinge and legs pale green. The winter form is reddish-brown with antennae pale white, eyes dark violet, tegmina with a brownish tinge and legs green. In between these two extremes, there may be many intermediate forms depending upon the time of year. Descriptions of the various nymphal stages are given in Husain (5). (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).



Adult of Empoasca devastans Distant

Major references: 1. Abbas, M. and Afzal, M. 1946. Ind. J. Agr. Sci. 15(3):119-124. 2. Afzal, M. and Ghani, M. A. 1953. Sci. Monogr. Pakistan Assoc. Advanc. Sci. no. 2, 102 pp. 3. Distant, W. L. 1918. The Fauna of British India -- Rhynchota. Vol. 7 Homoptera; appendix. Heteroptera: addenda 210 pp. 4. Ghauri, M. S. K. 1963. Bul. Ent. Res. 53(4):653-656. 5. Husain, M. A. 1940. Ind. J. Ent. 2(2):123-136.

Illustration of adult from Husain.

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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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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID moderate to heavy on alfalfa in several Oklahoma counties. (p. 1329).

HICKORY SHUCKWORM extremely heavy on pecans in several Alabama counties; 20-95 percent of nuts on many trees affected. (p. 1331). On Florida citrus, CITRUS RUST MITE population above average and TEXAS CITRUS MITE more abundant than in any other October. Combined population of Texas citrus mite and CITRUS RED MITE should be taken into account in November. PURPLE SCALE, GLOVER SCALE, CHAFF SCALE and YELLOW SCALE continue above normal abundance on Florida citrus and population of WHITEFLIES in high range and above that of any prior October on record. (pp. 1331, 1332). COTTONY MAPLE SCALE extremely heavy on 80 acres of grapes in Lodi, San Joaquin County, California; price paid for grapes reduced from \$180 to \$30 per ton. (p. 1332).

PINK BOLLWORM causing extensive damage to cotton in Eddy County, New Mexico, and heavy infestations remain in Graham County, Arizona. Small numbers of pink bollworm continue to be found in eradication area in and around Maricopa and Pinal Counties, Arizona. (p. 1333).

DETECTION

An APHID (*Neophyllaphis araucariae*) found in Volusia County, Florida; first record on continental United States. (p. 1334).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1336).

Interceptions of Special Interest at U.S. Ports of Entry. (p. 1340).

Eriophyid Mites Found on Florida Citrus. (p. 1341).

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

WEATHER OF THE WEEK ENDING NOVEMBER 8

Several areas received more than an inch of precipitation during the past week. The Washington and Oregon coasts received from 3-5 inches. Amounts tapered to 2-3 inches west of the Cascades and lesser amounts east of the mountains. Snow accumulations in the high elevations of the Cascade and Olympic Mountains were about the heaviest of record for so early in the season. Depths ranged from 6-10 inches at 3,000 feet, 24-30 inches at 4,000 feet and 50-60 inches at higher elevations. Coastal areas of northern California received 2-4 inches of rain. Snow fell in northern California above 4,500 feet. Wind gusts accompanying the rains reached 60 m.p.h. along the coast. A frontal passage accompanied by strong, gusty winds produced rain and showers in Arizona. Snow fell in Arizona above 6,000 feet; accumulation reached several inches.

Southeast Texas received a few heavy showers early in the week. Thundershowers dumped an inch or more over south central Texas on Friday. Some areas along the middle and upper coast received 3-4 inches. Heavy rains fell along the coast of Louisiana. Morgan City received 7.74 inches. The amounts tapered inland to less than 0.20 inch. Much of Florida received over an inch of rain. Scattered areas in central Florida received more than 3 inches.

Generous rains fell along the middle and northern Atlantic coast. Amounts ranged generally from 4-5 inches in North Carolina, from 2-4 inches in Virginia, Maryland and Delaware, from 2-4 inches or more in Pennsylvania, from 2½-4 inches on Long Island and in the lower Hudson River Valley, 2-3½ inches in central New York, from 3½ inches in southern New Jersey to 4 inches over the north, and up to near or above 7 inches at a few locations in New England. The generous rains relieved the drought and reduced the forest fire hazard.

Dry weather continued, however, over parts of the northern and central Great Plains where many stations received no rain or only piddling amounts.

Temperatures averaged above normal over most of the Nation. Departures ranged from +6° to +10° over the western Great Plains. Temperatures averaged slightly below normal over the interior valley of California, on the western slope of the southern Appalachians, and over southern Georgia.

Widespread cloudiness prevailed over the eastern half of the Nation on November 4 and 5. The storm deepened and, by Wednesday, was producing heavy rainfall over the middle and northern Atlantic States. Another storm in the northwest intensified, moved inland and produced rain over the Pacific States and the Great Basin and snow in the higher elevations as far south as Arizona and New Mexico. Snow also fell over the western Great Plains.

Frontal activity brought weekend rains to Texas, parts of Iowa and Minnesota. A storm over the western portion of the Gulf of Mexico produced thundershowers along the middle and upper coast of Texas and over southern Louisiana. At the end of the week rain was falling over portions of Florida and a storm centered north of Lake Superior was producing rains and a few snow flurries over areas near the Great Lakes and along the St. Lawrence River. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Light, 5-15 per 10 sweeps, on alfalfa in Blaine and Kingfisher Counties. Ranged from light, 5-15 per 10 sweeps, to moderate, 250-300 per 10 sweeps, in Garfield County. Moderate to heavy populations present in Alfalfa and Woodward Counties (75-125 per foot of row on seedlings, 1,000-1,250 per 10 sweeps on established stands); honeydew present on foliage. Counts 25-50 per square foot on seedling alfalfa in Harper County and moderate to heavy counts reported from Grady and Cotton Counties. (Okla. Coop. Sur.). WISCONSIN - Decreased in Brodhead observation field although incidence of egg laying in field increased. Eggs increased from an average of 16 per stem on October 31 to 37 per stem on November 5. Populations decreased from 200 to 150 per sweep. Nymphs still being produced by alate females. Eggs averaged 2 per plant on new seeding of alfalfa in Brodhead area. Distribution apparently not changed greatly. (Wis. Ins. Sur.). VIRGINIA - Infesting 60-80 acres of fall-seeded alfalfa locally in Halifax County. (Rowell, Hall).

YELLOW CLOVER APHID (Therioaphis trifolii) - WISCONSIN - Collected in Brodhead area, Green County; egg production in process. (Wis. Ins. Sur.).

SWEETCLOVER APHID (Therioaphis riehmi) - WISCONSIN - Collected in Brodhead area, Green County; production of eggs in process. (Wis. Ins. Sur.).

GREENBUG (Schizaphis graminum) - OKLAHOMA - Light, scattered populations noted in Kingfisher, Garfield and Alfalfa Counties; ranged 0-8 per linear foot of row (average 3-5) in Hennessey area of Kingfisher County, with only occasional specimen noted in other counties. Both winged and nonwinged forms present. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Common in Garfield, Alfalfa, Woods, Harper, Ellis, Woodward, Dewey, Blaine and Kingfisher Counties; generally fewer than 5 per linear foot of row, but 10-25 per linear foot noted in Seiling area of Dewey County. Some reproduction noted in Alva area. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - ALABAMA - Extremely large numbers on second-growth grain sorghum in Baldwin County; convergent lady beetle, Hippodamia convergens, quite abundant and feeding on aphids, but aphid populations too heavy to be controlled. (McQueen). CALIFORNIA - Heavy populations present on milo plantings in Marysville, Yuba County. (Cal. Coop. Rpt.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Very light, scattered infestations, fewer than 2 per foot of linear row, noted in Kingfisher, Garfield and Alfalfa Counties. (Okla. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - OKLAHOMA - Light, 15 per 10 sweeps, observed on alfalfa in Garfield and Harper Counties. (Okla. Coop. Sur.). WISCONSIN - Continues to decrease; generally scarce in most alfalfa. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Light, local infestations on alfalfa in Hall County. (Hooser).

TARNISHED PLANT BUG (Lygus lineolaris) - NEBRASKA - Adults ranged 3-12 per 10 sweeps in alfalfa in southern, central and eastern areas. Adults occasionally found on cornstalks in same areas. (Bergman, Nov. 4).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Adults still present in forage fields throughout southwest; populations apparently decreasing rapidly with advent of cool weather. (Lyons).

CHINCH BUG (Blissus leucopterus) - NEBRASKA - Adults present in cornfield in Jefferson County. (Bergman, Nov. 4).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Nymphs common in many fields; one per sweep present in at least one alfalfafield. (Wis. Ins. Sur.).

LEAFHOPPERS - OKLAHOMA - Light to moderate populations of several species present in most fields of wheat checked in northwest and west central areas. (Okla. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Moderate damage occurring to alfalfa from larvae migrating from cotton fields in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Counts 8-10 per 10 sweeps on alfalfa in Garfield County. (Okla. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - ARIZONA - Damaging grain sorghum near Roll, Yuma County; presently confined to one small area. (Ariz. Coop. Sur.).

NEBRASKA - Larvae commonly found on cornstalks in eastern and southeastern areas. (Roselle, Bergman).

CORN EARWORM (Heliothis zea) - ALABAMA - Small larvae extremely heavy on second-growth grain sorghum in Baldwin County. One-half to full-grown larvae present on late corn. Adults flying and ovipositing. Large number of larvae will enter pupation within 15 days unless killing freeze hits area. No appreciable damage from present larvae expected. (McQueen). NEBRASKA - Late instars quite frequently found in cornstalks and cobs in southern, central and eastern areas during European corn borer survey. (Bergman, Nov. 4).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Large adult flights still present in many alfalfa-growing areas of Yuma and Maricopa Counties; averaged 83 per 100 sweeps. (Ariz. Coop. Sur.). MICHIGAN - Few adults observed flying in Livingston County on November 7; an abnormally late date for adult flight in State. (Newman).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Survey of sorghum fields in eastern counties indicates that losses were heavy in untreated, late-planted fields from Tucumcari, Quay County, to Lovington, Lea County. Growers obtained effective chemical control of this pest where treatment properly timed and applied correctly. Heaviest losses in Lovington area. (N. M. Coop. Rpt.).

A SOD FLY (Metoponia rubriceps) - CALIFORNIA - Heavy populations on grass lawns in San Francisco, San Francisco County. (Cal. Coop. Rpt.).

SOUTHERN FIRE ANT (Solenopsis xyloni) - TEXAS - Becoming numerous on lawns in Brazos County. (Newton).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - OHIO - New fields of alfalfa in southwest had 1-2 adults per 50 sweeps. (Lyon). WISCONSIN - Females continue to produce eggs although populations continue to decrease. (Wis. Ins. Sur.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ALABAMA - Adults quite abundant on second-growth grain sorghum in Baldwin County, on cotton in Monroe County and crimson clover in Conecuh County; apparently not hibernating although scattered frost occurred in area. (McQueen). OHIO - Adults 6 per 50 sweeps in alfalfafield near Eaton, Preble County. (Lyon).

CLOVER ROOT CURCULIO (Sitona hispidula) - OHIO - Very light numbers of adults collected from alfalfa in several southwestern area fields. (Lyon).

CLOVER LEAF WEEVIL (Hypera punctata) - OHIO - Few adults collected from alfalfa throughout southwest. (Lyon).

FRUIT INSECTS

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Heavy on young apple trees at Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

A LEAFHOPPER (*Erythroneura lawsoniana*) - OHIO - Confirmed identification made of this species present on apple leaves at Batavia, Clermont County, on September 9. (Kramer).

PECAN WEEVIL (*Curculio caryae*) - ALABAMA - Larvae continue to leave pecan and hickory nuts in large numbers in Coosa and Chambers Counties. (Barwood).

CERAMBYCID BEETLES (*Prionus* spp.) - ALABAMA - Several fully grown larvae noted on dead and dying pecan tree trunks in Baldwin County. (Wilson).

NAVEL ORANGEWORM (*Paramyelois transitella*) - CALIFORNIA - Medium on almond nuts in Winters, Yolo County. (Cal. Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Extremely heavy in pecans in Lee, Chambers, Coosa, Baldwin, Monroe, Conecuh and Butler Counties; 1-4 larvae present in shucks of many pecans and 20-95 percent of nuts on many trees affected. (Eden, Barwood, Bagby, et al.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Adults continue to be found in McPhail traps at Nogales, Santa Cruz County; fruit inspections continue negative. (Ariz. Coop. Sur.).

SUNFLOWER MOTH (*Homoeosoma electellum*) - ARIZONA - Larvae damaged stems and fruits of Valencia oranges in Yuma area bordering desert. (Ariz. Coop. Sur.).

ORANGE-DOG (*Papilio cresphontes*) - ARIZONA - Larvae continue problem on citrus in Yuma, Maricopa and Pinal Counties; adults numerous throughout area. (Ariz. Coop. Sur.).

YELLOW SCALE (*Aonidiella citrina*) - FLORIDA - Moderate on leaves of 25 percent of 200 Murcott orange trees at Avalon, Orange County. (Griffith, Oct. 22).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - ARIZONA - Caused considerable scarring of untreated tangerines; few mites at present. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - End of October - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 68 percent of groves (norm 69 percent); 55 percent economic (norm 42 percent). Population above average and in high range and will continue high in most districts through November, especially in cold-damaged groves. Infestations presently similar on leaves and fruit, but will increase on fruit. Highest districts Gainesville, Brooksville, Bartow, west coast and Orlando. CITRUS RED MITE (*Panonychus citri*) infested 51 percent of groves (norm 46 percent); 17 percent economic (norm 21 percent). Population at moderate level, normal for this time of year. Highest districts west coast, Brooksville and Orlando. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 51 percent of groves (norm 24 percent); 19 percent economic (norm 7 percent). More abundant than in any other October. Highest districts Brooksville, west coast, ridge and Bartow. Both citrus red mite and Texas citrus mite presently at similar level. Both may occur in same grove, but usually only one builds to heavy infestations in same period. Because of the habits, injury and control measures are similar. The combined population should be taken into account. Thus, about 38 percent of groves may be expected to have moderate to heavy infestations of these two species in November. PURPLE SCALE (*Lepidosaphes beckii*) infested 80 percent of groves (norm 63 percent); 18 percent economic (norm 4 percent). GLOVER SCALE (*L. gloverii*) infested 71 percent of groves (norm 25 percent); 22 percent economic (norm 1 percent). CHAFF SCALE (*Parlatoria pergandii*) infested 80 percent of groves (norm 38 percent); 16 percent economic (norm 1 percent). YELLOW SCALE (*Aonidiella citrina*), infested 36 percent of groves (norm 13 percent);

7 percent economic (norm 1 percent). All the above scale species continue above normal abundance. Little change expected. Most infestations light to moderate, but scattered groves in warmer areas will have injurious numbers. BLACK SCALE (*Saissetia oleae*) infested 38 percent of groves (norm 34 percent); 13 percent economic (norm 10 percent). Decrease to normal low level expected. WHITEFLIES infested 77 percent of groves (norm 63 percent); 27 percent economic (norm 13 percent). Population in high range and above that of any prior October on record. Heavy infestations will decrease but light infestations in cold-damaged groves will become heavier, thereby keeping statewide population high. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

COTTONY MAPLE SCALE (*Pulvinaria innumerabilis*) - CALIFORNIA - Extremely heavy on 80 acres of tokay grapes in Lodi, San Joaquin County. Severe smutting resulted from infestation which reduced price paid for grapes from 180 dollars to 30 dollars per ton. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

CABBAGE LOOPER (*Trichoplusia ni*) - FLORIDA - Caused light to moderate damage to 51 percent of 200 cabbage plants at Sanford, Seminole County; 8 larvae noted. (Desin). GEORGIA - Moderate to heavy on collards in Atlanta area. (Vanderford). ARIZONA - Infestations general in lettuce fields throughout Maricopa, Pinal and Yuma Counties; 12 per 100 plants in Yuma County. (Ariz. Coop. Sur.).

IMPORTED CABBAGEWORM (*Pieris rapae*) - MICHIGAN - Adults still observed flying November 7 in Livingston County; an unusually late record. (Newman).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Migrations from cotton fields to lettuce fields caused much concern to growers in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

BEEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Small populations continue to damage lettuce fields in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

NOCTUID MOTHS - ARKANSAS - Specimens collected on tomatoes in Little River County in October determined as follows: Heliothis zea - 3, H. virescens - 1, and Trichoplusia ni - 3. (Ark. Ins. Sur.).

LEAF MINER FLIES (*Liriomyza* spp.) - FLORIDA - Light to moderate on 100 percent of old growth of 300 celery plants at Sanford, Seminole County; very little damage noted on newer growth. Damaged 2 percent of 200 cabbage plants in same area. (Desin).

ONION MAGGOT (*Hylemya antiqua*) - UTAH - Infested nearly 100 percent of onions in large garden at Smithfield, Cache County. (Knowlton).

ROOT MAGGOTS - UTAH - Infested most radishes and practically all turnips in large garden at Smithfield, Cache County. (Knowlton).

APHIDS - GEORGIA - Heavy on collards in Atlanta area. (Vanderford). OHIO - Brevicoryne brassicae light to moderate on cabbage in Franklin County; primarily on inner surface of cabbage leaves. (Lyon).

TARNISHED PLANT BUG (*Lygus lineolaris*) - OHIO - Adults moderate to heavy on leaf lettuce at Columbus, Franklin County. (Lyon).

A WEEVIL (*Hyperodes texana*) - TEXAS - Species reported attacking carrots in Rio Grande Valley in winter of 1961 and 1962 now identified. (Burke).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Causing extensive damage in cotton fields in Eddy County; losses in yield running high in area. (N. M. Coop. Rpt.). ARIZONA - Small numbers continue in eradication area in and around Maricopa and Pinal Counties; heavy infestations still remain in Graham County. (Ariz. Coop. Sur.).

BOLLWORMS (Heliothis spp.) - ARKANSAS - Collections made at Spivey farm, Desha County, October 23 determined as H. zea - 9 and H. virescens - 2. Collections made at Southeast Branch Experiment Station, Kelso, Desha County, October 24 determined H. zea - 15. Det. by C. G. Lincoln. (Ark. Ins. Sur.). ALABAMA - Heliothis spp. present in considerable numbers in different stages in squares and bolls. No adults noted in flight in 4 Monroe County fields. (McQueen).

COTTON LEAFWORM (Alabama argillacea) - ALABAMA - Only few specimens found in 4 Monroe County fields; larvae and pupae killed by recent, scattered frosts. Very few adults in flight. (McQueen).

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Still hatching and feeding on squares and bolls in 4 fields examined. Numerous weevils recently emerged from pupation still enclosed in old burrs on stalks. Nearly mature larvae still feeding in squares and bolls. (McQueen).

COTTON APHID (Aphis gossypii) - ALABAMA - Extremely heavy in 4 Monroe County cotton fields. (McQueen). TEXAS - Locally heavy and honeydew causing damage to cotton lint in Terry County. (Rummel).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ALABAMA - Adults extremely heavy and feeding on leaves and blooms of cotton in 4 Monroe County fields. (McQueen).

SPIDER MITES (Tetranychus spp.) - ALABAMA - Extremely heavy in 4 Monroe County cotton fields. (McQueen).

Gin-trash Collections in California - Labidura riparia, Udea rubigalis, Proxenus mindara, Feltia subterranea, Chrysopa spp. and syrphid fly larvae numbers medium in Winterhaven, Imperial County. Live larvae of Heliothis zea and Proxenus mindara noted in gin trash in Chowchilla and Madera, Madera County; Tenebroides mauritanicus and Trogoderma sternale heavy in gin trash at same locality. (Cal. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SPRUCE BUDWORM (Choristoneura fumiferana) - CALIFORNIA - Damaging white fir in Mill-Bidwell-North Creek area and Granger Canyon, Modoc National Forest; approximately 100,000 white fir trees partially or completely defoliated on 5,000 acres. (T. Bouse, TMA).

A PINE TIP MOTH (Rhyacionia sp.) - CALIFORNIA - Causing extensive damage to 100 ponderosa and Jeffrey pines in 36-acre stand in Chaparral plantation in Hawkins Ridge area, Butte and Lassen Counties. (J. Langford, USFS).

PINE BUTTERFLY (Neophasia menapia) - CALIFORNIA - Adults active about tops of ponderosa pines in Plum Creek Camp Ground near Davis Creek, Modoc County; no larvae noted. (P. Cox, CDF).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - Infesting 150 white fir trees in 2,500-acre area in Willow Creek, Lassen and Plumas Counties. Salvage logging being used to reduce infestation. (T. A. Hoots, TMA).

AMBROSIA BEETLES - CALIFORNIA - Populations heavy in windthrown redwood timber over 100 acres in Slater Creek area, Humboldt County. Phloeosinus sequoiae (a bark beetle) also present in noticeable numbers. (R. E. Fehly, USFS).

AN APHID (Neophyllaphis araucariae) - FLORIDA - Taken on Norfolk Island pine (Araucaria excelsa) at Port Orange, Volusia County, by L. W. Holley on November 28, 1962. (Fla. Coop. Sur.). This is first record on continental United States. It has been previously reported in Hawaii. (ARS).

FALL CANKERWORM (Alsophila pometaria) - MINNESOTA - First activity of females observed in Minneapolis-St. Paul area; numbers extremely high in some locations. Populations will apparently be high during 1964, especially in northern suburbs of St. Paul. (Minn. Ins. Rpt., Nov. 4).

FALL WEBWORM (Hyphantria cunea) - CALIFORNIA - Medium on California black walnut in Gerber, Tehama County. (Cal. Coop. Rpt.).

CATLAPA SPHINX (Ceratonia catalpae) - ALABAMA - Two broods of 50-100 half-grown larvae noted feeding on second growth catalpas in Monroe County. (McQueen).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEW MEXICO - Light to moderate larval populations damaging foliage of Chinese elms at Armijo, Bernalillo County. (N. M. Coop. Rpt.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Limited activity continues throughout State. (Okla. Coop. Sur.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MINNESOTA - Third generation occurred this fall; unseasonably warm weather was responsible. It will be interesting to see if these early instars will overwinter. This third generation has been active for about 3 weeks. (Minn. Ins. Rpt.). SOUTH CAROLINA - Recovered in sizeable numbers from trap logs in Clemson area. This recovery part of statewide survey now in progress to determine distribution of this principal vector of Dutch elm disease in State. Det. by R. C. Fox. (Nettles et al.).

A SPIDER MITE (Eotetranychus weldoni) - CALIFORNIA - Heavy on weeping willows in Oroville, Butte County. (Cal. Coop. Rpt.).

JUNIPER WEBWORM (Dichomeris marginella) - MARYLAND - Larvae heavy on several Irish junipers on a property in Baltimore. (U. Md., Ent. Dept.).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Medium locally on carob (Ceratonia siliqua) in Oroville, Butte County. (Cal. Coop. Rpt.).

HOLLYHOCK WEEVIL (Apion longirostre) - OHIO - Moderate to heavy numbers causing severe feeding injury to hollyhock seeds in several outdoor plantings in Wayne County, northeast. (Shambaugh, Triplehorn).

TARNISHED PLANT BUG (Lygus lineolaris) - NEBRASKA - Adults numerous on chrysanthemum plants in southeast. (Bergman).

APHIDS - MARYLAND - Lachnus salignus heavy on weeping willow on several properties in Prince Georges County. Dactynotus rudbeckiae moderate on Rudbeckia sp. at Brinklow, Montgomery County. (U. Md., Ent. Dept.). GEORGIA - Macrosiphum rosae moderate on rose in Bibb County. (Baumgardner). FLORIDA - Aphis coreopsidis moderate on 10 saltbush plants (Baccharis sp.) at Marineland, Flagler County. (Roberts, Oct. 25). Cerataphis variabilis causing moderate damage to 1 of 3 Arikuryroba schizophylla at Dania, Broward County. (McLean, Oct. 28). OKLAHOMA - Several species continue active on variety of ornamentals in Stillwater area, Payne County. (Okla. Coop. Sur.). OHIO - Heavy populations of Myzus persicae observed on chrysanthemums in many greenhouses throughout southwest area. Macrosiphum rosae infesting several rose plants near Reynoldsburg, Licking County, central

area; frequently ranged 80-90 per bud. (Lyon). CALIFORNIA - Lachnus salignus heavy on willows in Placerville, El Dorado County. (Cal. Coop. Rpt.).

COCCIDS - CALIFORNIA - Nymphs and adults of Pseudococcus adonidum medium on Phormium tenax in San Carlos, San Mateo County. Saissetia hemisphaerica, S. oleae and Aspidiotus hederæ heavy on Myrsine africana in San Francisco, San Francisco County. Pseudococcus obscurus adults heavy on poinsettia plants in Pacifica, San Mateo County. Arctothezia sp. light under rocks and Orthezia sp. heavy on Monardella odoratissima in Weaverville area, Trinity County. Aonidiella aurantii adults heavy on camellia nursery stock in Madera, Madera County. (Cal. Coop. Rpt.). OHIO - Pseudococcus adonidum light on tropical plants at a garden center in Franklin County, central area. (Lyon). FLORIDA - At Malabar, Brevard County, Saissetia nigra severe on 2 of 200 Hibiscus sp. plants inspected; Pulvinaria psidii moderate to severe on leaves of 3 of 55 Ixora plants inspected; and Pinaspis strachani severe on 2 of 200 hibiscus plants. (Levan, Oct. 29). Coccus viridis moderate on stems and leaves of 2 of 200 Ixora coccinea at New Smyrna Beach, Volusia County (Pott, Oct. 10), and all of 50 plants of same host at Winter Garden, Orange County. (Griffith, Oct. 24). Chrysomphalus aonidum severe on 3 of 25 Pandanus veitchii at Apopka, Orange County. (Musgrove, Oct. 7). Pseudaulacaspis pentagona severe on 4 of 10 Ilex opaca at Largo, Pinellas County (Bingaman, Oct. 28); severe on 38 of 75 Koeleruteria paniculata at Oviedo, Seminole County (Youtsey, Oct. 30); moderate to severe on 9 of 15 Ligustrum ovalifolium at Brandon, Hillsborough County (Simmons, Oct. 25).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - CALIFORNIA - Heavy on plumeria, viburnum and other garden shrubs and plants in Del Mar and San Diego, San Diego County, and in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A THrips (Heliothrips sp.) - OHIO - Caused moderate damage to red carnation blooms in greenhouse in Springfield, Clark County. White streaks present on most red carnations. (Lyon).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - All stages heavy on privet in Oroville, Butte County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - OHIO - Heavy populations observed on carnation foliage in greenhouse in Springfield, Clark County, west central. Controls underway. (Lyon).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - NEBRASKA - A cluster of this species found in a farm home in Nemaha County. Colony has been present in this home for 3 consecutive years. (Jones, Roselle, Bergman).

HOUSE FLY (Musca domestica) - OKLAHOMA - Ranged 5-10 per scudder grid in feed barns in Stillwater area, Payne County. Continues annoying around homes and public buildings. (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Counts of 30 per head noted on animals in Stillwater area, Payne County. (Okla. Coop. Sur.).

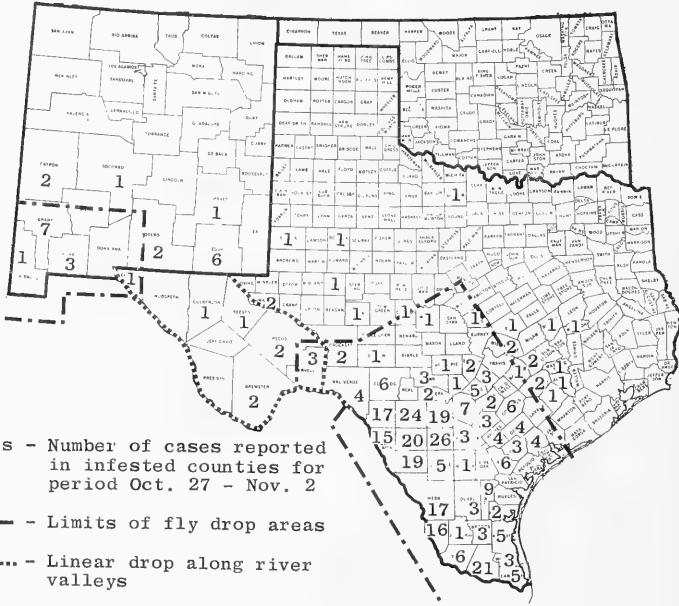
STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations of 15 per head observed on steers in Stillwater area, Payne County. (Okla. Coop. Sur.).

A MOSQUITO (Psorophora ciliata) - OKLAHOMA - Annoying populations present in Payne County area. (Okla. Coop. Sur.).

LICE - TEXAS - Light, local populations appearing on cattle in Hall County. (Hooser).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period October 27 - November 2, a total of 346 infestations was reported from 67 counties in TEXAS and 23 infestations from 8 counties in NEW MEXICO. Screw-worm was reported for the first time this year from Archer County, Texas. A total of 140,469,050 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



CALIFORNIA - Infesting packaged cereals and spices in residence in San Diego, San Diego County. Many complaints being received from all areas of State. (Cal. Coop. Rpt.).

CONFUSED FLOUR BEETLE (Tribolium confusum) - DELAWARE - Some heavy infestations in stored products in homes reported from one area of New Castle County. (Bray).

FLAT GRAIN BEETLE (Cryptolestes pusillus) - GEORGIA - This species and Lasioderma serricorne infesting cereal in home at Griffin, Spalding County. (Roberts, Oct. 30).

FURNITURE CARPET BEETLE (Anthrenus flavipes) - GEORGIA - Heavy infestations in packing material noted at Warner Robins, Houston County. (Baumgardner, Oct. 31).

A PYRALID MOTH (Aglossa caprealis) - MARYLAND - Larvae present in basement of home in Kensington, Montgomery County. (U. Md., Ent. Dept.).

GERMAN COCKROACH (Blattella germanica) - OHIO - Elimination of established infestations a problem in few homes in Columbus, Franklin County. (Walker).

EARWIGS - TEXAS - Unspecified species a nuisance and causing concern to homeowners in Dallas County. (Thomas).

STORED-PRODUCT INSECTS

CIGARETTE BEETLE (Lasioderma serricorne) - TEXAS - Heavy, local populations causing damage to stored cottonseed in Robertson County. (Davis).

FOREIGN GRAIN BEETLE (Ahasverus advena) - OHIO - Adults noted in milk storage room near Lebanon, Warren County. (Ross, Holdsworth).

COWPEA WEEVIL (Callosobruchus maculatus) - CALIFORNIA - Heavy in blackeyed peas in a supply house in Caruthers, Fresno County. (Cal. Coop. Rpt.).

INDIAN-MEAL MOTH (Plodia interpunctella) - NEW MEXICO - This species, Trogoderma sp. and unspecified wireworms creating a problem in commercial feed building in Harding County. Damage evident. (N. M. Coop. Rpt.).

MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) - VIRGINIA - Infesting whole wheat at a location in Blacksburg, Montgomery County. (Covell, Nov. 1).

BENEFICIAL INSECTS

LADY BEETLES - OHIO - Heavy populations of Hippodamia convergens building up in many southwest area alfalfa fields; adults ranged 100-125 per 50 sweeps in one field near Oxford, Butler County. Aphid populations have decreased substantially. (Lyon). ALABAMA - Larvae and adults of H. convergens and Coleomegilla maculata fuscilabris plentiful in 4 cotton fields in Monroe County. These fields infested with several cotton pests. (McQueen).

A DAMSEL BUG (Nabis ferus) - OHIO - Adults averaged 20 per 50 sweeps in field of alfalfa near Hamilton, Butler County, southwest. (Lyon).

Parasites of European Corn Borer in Maryland - Total parasitism of larvae collected during November 1962 was 4 percent. Parasitism by species, was as follows: Lydella grisescens (a tachina fly), 0.9 percent; Macrocentrus gifuensis (a braconid), 3.0 percent; Pyraustomyia penitalis (a tachina fly), 0.1 percent. (U. Md., Ent. Dept.).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Of 18,000 gross acres slated for treatment in Battle Creek area, 4,700 acres completed by November 7. In Ypsilanti-Willow Run area, 3,300 acres of planned 7,700 acres now treated. (Turner).

VESPID WASPS - ALABAMA - Large numbers of yellow jackets continue feeding on honeydew throughout central and southwestern areas. (McQueen). VIRGINIA - Vespa maculifrons and probably Eumenes fraternus adults noted in Lynchburg, Campbell County. (Amos).

NOCTUID MOTHS - MICHIGAN - Adults of Peridroma saucia, Pseudaletia unipuncta, Heliothis zea, Trichoplusia ni and Alabama argillacea taken in blacklight traps in Livingston County evenings of October 26 and 27. Temperatures then in the 60's. (Newman).

PUMPKIN CATERPILLAR (Diaphania indica) - FLORIDA - Adult collected in Steiner trap in calamondin at South Lake Wales, Polk County. (Vild).

AN EARWIG (Labidura riparia) - GEORGIA - Moderate to heavy populations, probably this species, noted in area of Montezuma. (Roberts).

A MARCH FLY (Philia strigilata) - CALIFORNIA - Heavy in sod in Alhambra, Los Angeles County. (Cal. Coop. Rpt.).

A TROMBIDIID MITE (Dinothrombidium magnificum) - CALIFORNIA - Adults medium on soil in Lucerne, San Bernardino County; immature form parasite on grasshoppers. (Cal. Coop. Rpt.).

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on August 30, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U. S. National Museum during the month, and include any of special interest from recent months that were not previously reported.

CHINESE ROSE BEETLE (Adoretus sinicus Burm.) (general feeder in Hawaii and the Orient) two times in baggage at Honolulu, Hawaii.

A CERAMBYCID (Callidium rufipenne (Mots.)) (pest of some economic significance in Japan) in mail at St. Paul, Minnesota.

A BRUCHID (Callosobruchus analis F.) (infests beans in India) in stores at Corpus Christi, Texas.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) in stores and baggage at Savannah, Georgia, and at San Francisco, California.

ASIATIC RICE BORER (Chilo suppressalis (Wlk.)) in stores and cargo at San Diego, California, and at Honolulu, Hawaii.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) in quarters at San Francisco, California.

A NOCTUID (Gortyna flavago (Schiff.)) (Mediterranean area artichoke borer) in stores at New York, New York.

A GELECHIID (Gnorimoschema sp., near borsaniella Koehler) (attacks peppers in Argentina) in baggage at Miami, Florida.

COTTONSEED BUG (Oxycarenus hyalinipennis Costa) in mail at District of Columbia Inspection House.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi L.) 18 times at New York International Airport; 4 times in stores and 14 times in baggage.

A STENOMID MOTH (Stenoma catenifer Wlsm.) (avocado seed pest of Mexico, Central America, and parts of South America) 6 times (3 times in stores and 3 times in baggage); at Tampa, Florida, one time; Jacksonville, Florida, one time; Miami, Florida, 2 times; Dover, Delaware, one time; Philadelphia, Pennsylvania, one time.

WHITE GARDEN SNAIL (Theba pisana (Müller)) on general cargo 6 times; 4 times at New Orleans, Louisiana; and one time each at Charleston, South Carolina, and New York, New York

KHAPRA BEETLE (Trogoderma granarium Everts) 25 times (6 times in ships' holds, 5 times in stores and 14 times contaminating cargoes of gum arabic, guar gum, gum karaya, "myrobalan nuts", tamarind seed powder bags, cumin seed, Bixa seeds and dry foods in unaccompanied baggage); 6 times at New York, New York; 4 times at Charleston, South Carolina; 3 times at Philadelphia, Pennsylvania; 2 times each at Boston, Massachusetts, Baltimore, Maryland, and Savannah, Georgia; and one time each at Chicago, Illinois, Wilmington, North Carolina, Tampa, Florida, New Orleans, Louisiana, Houston, Texas, and Seattle, Washington.

OAT NEMATODE (Heterodera avenae) - Once at Seattle, Washington, from soil on used tractors.

GOLDEN NEMATODE (Heterodera rostochiensis) - Once at Corpus Christi, Texas, in soil from Peruvian potatoes and once at Seattle, Washington, in soil on used farm tractors.

ERIOPHYID MITES FOUND ON FLORIDA CITRUS

H. A. Denmark^{1/}

Introduction: Three eriophyid mites occur on citrus in Florida. The citrus rust mite (Phyllocoptura oleivora (Ashmead)) was described from Florida in 1878. The citrus bud mite (Aceria sheltoni (Ewing)) was first found in Florida by H. H. Attiah in 1959 on sweet orange in South Miami. A pink citrus rust mite (Aculus pelekassi Keifer) was first discovered in Florida by Dr. A. K. Burditt, Jr., on calamondin at Orlando in 1961.

Economic Importance: Citrus rust mite is one of the major citrus pests in Florida. It damages the leaves and russets the fruit (fig. 1). This mite is usually found on the undersurface of mature leaves, on stems, and the protected side of fruit. The citrus bud mite probably has been in Florida for many years along the coastal areas. Apparently it causes little damage to Florida citrus, but does cause damage to citrus buds (fig. 2), deforming the fruit and leaves in other areas. It has been reported on lemon and sweet orange in California and on sweet orange, grapefruit, and lemon in Florida. A pink citrus rust mite was found in Florida recently but probably has been here much longer. It usually feeds on the upper-surface of new leaves, and high populations deform leaves (fig. 3). This mite shows a positive response to light.

Distribution: The citrus rust mite probably occurs in nearly every citrus-growing area in the world. In Florida, it is found throughout the citrus belt. The citrus bud mite is found in Greece, Italy, Sicily and Spain in Europe; Cyprus, Indonesia, Israel and Turkey in Asia; Congo, Kenya, Libya, Republic of South Africa, Southern Rhodesia, Tunisia and Uganda in Africa; Argentina and Brazil in South America; Australia; and the United States in California, Florida and Hawaiian Islands. In Florida, it is found along the east coast at Miami and Ft. Pierce. A pink citrus rust mite is known to occur in Greece, Italy, Japan, Sicily and Thailand. In Florida, it is found in the following counties: Alachua, Baker, Citrus, De Soto Hardee, Hillsborough, Lake, Marion, Orange, Pinellas, Putnam, Seminole, Volusia.

Host: All species are found on Citrus spp. and, with the exception of the citrus bud mite, on Poncirus trifoliata.

Description: The color of the citrus rust mite (fig. 4a) is usually a lemon yellow to brown. Diseased specimens may be pink or dark brown. The citrus bud mite (fig. 5a, after Keifer) is slightly smaller than the citrus rust mite and is light yellow in color. A pink citrus rust mite (fig. 6a) is approximately the same size as the citrus rust mite and varies in color. It may be whitish, light yellow, light pink to reddish. A key to mounted specimens of citrus rust mite, citrus bud mite and a pink citrus rust mite is presented on the following page.

^{1/} Division of Plant Industry, Florida Department of Agriculture

Key to Mounted Specimens

1. Dorsal shield setae pointing backwards over abdomen. 2
- Dorsal shield setae not pointing backwards over abdomen. 3
2. Featherclaw 4-rayed (fig. 6b). Aculus pelekassi K.
- Featherclaw 5-rayed (fig. 5b). Aceria sheldoni (Ewing)
3. Featherclaw 5-rayed (fig. 4b). Phyllocoptruta oleivora (Ashm.)

| DAMAGE | | |
|-------------------|-----------|--------------------|
| Russeted Fruit | Multibuds | Deformed Leaves |

| ADULT STAGE | | |
|---------------------|--------------------|--------------------------|
| Citrus Rust Mite | Citrus Bud Mite | Pink Citrus Rust Mite |



Fig. 1

Fig. 2

Fig. 3

Fig. 4a

Fig. 5a

Fig. 6a

| FEATHERCLAW | | |
|---------------------|--------------------|--------------------------|
| Citrus Rust Mite | Citrus Bud Mite | Pink Citrus Rust Mite |



Fig. 4b

Fig. 5b

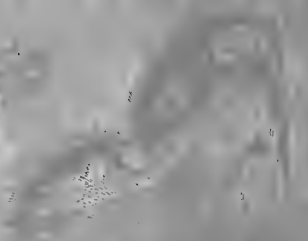
Fig. 6b



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AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID heavy and damaging fall-planted alfalfa in Washita and Pottawatomie Counties, Oklahoma; controls initiated in both counties. Light to moderately heavy on alfalfa in Chaves and Eddy Counties, New Mexico; some treatment required. (p. 1345).

DETECTION

SOUTHWESTERN CORN BORER found in Jefferson, Walker, Fayette, Lamar, Marion, Franklin, Colbert, Lauderdale, Lawrence and Winston Counties, Alabama, for first time (p. 1346); and a BROWN SPIDER (Loxosceles reclusa) collected in Moultrie County, Illinois, for a new county record (p. 1351).

CORRECTIONS

See page 1355.

SPECIAL REPORTS

Psoroptic Sheep Scabies Reported (map). (p. 1352).

Status of the Screw-worm in the Southwest. (p. 1353).

Name Change for Red-necked Peanutworm. (p. 1354).

Insects Not Known to Occur in the United States (barley aphid, Cuernavaca noxius (Mordvilko)). (p. 1357).

Reports in this issue are for week ending November 15, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-NOVEMBER TO MID-DECEMBER 1963

The Weather Bureau's 30-day outlook for the period from mid-November to mid-December calls for temperatures to average below seasonal normals over the Southeast and also in the Northern Plains. Above normal averages are predicted for the Great Lakes, Northeast, and also the Southwest. In unspecified areas near normal averages are in prospect. Precipitation is expected to exceed normal over the North and Middle Atlantic States as well as the Pacific Northwest. Subnormal amounts are indicated for the Upper Mississippi Valley, West Gulf States and Southwest. In the remainder of the Nation near normal amounts are anticipated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING NOVEMBER 18

Dry weather prevailed over the northern and central Great Plains and over most of the southern half of the Nation. The light showers in those areas were of little consequence. The main exception was in Florida where showers, ranging up to 2 to 4 inches in the citrus areas, fell during the first half of the week. The heaviest rains fell along the north Pacific coast where several stations received more than 4 inches. Numerous stations near the southern and eastern shores of the Great Lakes, in northern New York, and in northern and eastern Maine received from 1/2 inch to an inch or more. Snow fell in the western mountains, the northern Great Plains, near the Great Lakes, and, in the East, from Maine to northern Alabama and Georgia. Caribou, Maine, received 15 inches of snow. Other heavy falls occurred in other parts of New England, in New York, in the northern and central Rocky Mountains, and in the Cascade and Olympic Mountains. Temperatures averaged below normal from Mississippi to Ohio and southeastward to the Gulf and Atlantic coasts. Temperatures at Tallahassee, Florida, averaged 10° below normal. Over the rest of the Nation, temperatures averaged above normal. Departures ranged up to +10° at Pocatello, Idaho, and to +11° over central Washington.

Fair weather prevailed over most of the Nation at the beginning of the week. An important exception was near the Great Lakes and eastward to the Atlantic Ocean. Cloudiness and light rain or snow persisted over these areas in connection with a low pressure area centered north of the Great Lakes. Brisk northerly winds on the eastern side of a high pressure area centered over Saskatchewan, just north of Montana, poured polar continental air over the northern Great Plains holding afternoon temperatures in the 30's. On Wednesday afternoon, the temperature at Bismarck and Minot, North Dakota, reached only 29°. The cold air, blowing across the Great Lakes, produced showers and snow flurries along the southern and eastern shores. A mass of maritime polar air pushed into the Northwest during the first half of the week. It produced generous rains along the coastal portions of Washington, Oregon, and northern California, and lighter rains farther inland. Snow fell in the Cascade and Olympic Mountains above 3,000 feet.

By Friday morning the high pressure area was centered over Alabama and sub-freezing temperatures occurred along the Gulf of Mexico and at some stations in northern Florida. Tallahassee, Florida, and Augusta, Georgia, registered 23° Friday morning. Snow flurries fell as far south as northern Alabama and Georgia and continued in the northern Appalachians. By the weekend, southerly winds on the western side of the high pressure area, brought warm moist air northward over the Mississippi River Valley. Springfield, Missouri, registered 78° Saturday afternoon. The mild temperatures spread northward and a few light sprinkles fell over the central Great Plains. Heavier rains fell along the northern Pacific coast and snow fell over parts of the northern and central Rocky Mountains. Denver, Colorado, received 3 inches of snow Saturday evening.

At the end of the week, cloudiness prevailed in the Far Northwest, in the Lakes region and eastward to New England, and along a cold front which extended from near Lake Michigan southwestward to southern Texas. Elsewhere, skies were mostly fair. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Light to moderately heavy on alfalfa in Chaves and Eddy Counties. Occasional field of seedling alfalfa requiring treatment. Light, spotted infestations noted in southern Dona Ana County alfalfa fields. (N. M. Coop. Rpt.). OKLAHOMA - Heavy and damaging fall-planted alfalfa in Washita County (excess of 1,000 per linear foot of row) and in Pottawatomie County. Controls initiated in both Counties. Counts of 1,500-2,000 per 10 sweeps noted in Jackson County; 225 per 10 sweeps in Tillman County; and moderate to heavy populations reported from Cleveland and Cotton Counties. (Okla. Coop. Sur.). ARKANSAS - Counts of 400-500 per row foot found on University of Arkansas farm at Fayetteville. This is established stand planted in rows, presumably for breeding purposes. (Ark. Ins. Sur.). WISCONSIN - Continues to decrease, but egg numbers increasing. Population decrease attributed in part to death following oviposition. Nymphs still very common and alate virginoparae contain nymphs while apterous oviparae continue to develop and lay eggs. Males have disappeared and alate virginoparae have decreased appreciably. Counts in observation field near Brodhead dropped to 30 per sweep (150 per sweep previous week) and eggs have increased to 42 per stem (37 per stem previous week). Number of eggs on new seeding also doubled from 2 per stem previous week to 4 per stem on November 14. Examination of alfalfa fields in Mazomanie and Sauk City area in which populations range 1-30 per sweep show low incidence of eggs. (Wis. Ins. Sur.).

SWEETCLOVER APHID (*Therioaphis riehmi*) - WISCONSIN - Continues development and oviposition in southern Dane County. Mating observed in Green County. (Wis. Ins. Sur.).

YELLOW CLOVER APHID (*Therioaphis trifolii*) - WISCONSIN - Although scarce, development and egg laying noted in southern Dane County. (Wis. Ins. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - NEW MEXICO - Light to moderately heavy on alfalfa in Chaves and Eddy Counties; occasional field of seedling alfalfa requiring treatment. Light, spotted infestations noted in southern Dona Ana County alfalfa fields. (N. M. Coop. Rpt.). WISCONSIN - Decreased noticeably; heaviest numbers 10 per sweep. Few alates still present and eggs common in many fields. (Wis. Ins. Sur.). OHIO - Continues light to moderate in central and east central areas on alfalfa in spite of cool weather and light snowfall. (Lyon). MARYLAND - Ranged 25-160 per sweep in 4 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept., Nov. 2, 10).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Light, scattered infestations present in small grain fields checked in west central area of State. Counts of 6 per sweep noted locally in Jefferson County, south central. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - OKLAHOMA - Light in Custer, Washita, Kiowa, Greer, Jackson and Canadian Counties. Highest counts ranged 5-15 per linear foot in Custer County location with all other observations averaging fewer than 3 per linear foot. (Okla. Coop. Sur.). WISCONSIN - This and *Rhopalosiphum fitchii* colonies common in rye fields in western Dane County. (Wis. Ins. Sur.).

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Occasionally present in wheat fields checked in Custer, Washita, Kiowa and Canadian Counties. (Okla. Coop. Sur.). ARKANSAS - None found in small grains in Fayetteville area. (Ark. Ins. Sur.).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Adults ranged 1-5 per 100 sweeps in San Juan County alfalfa fields. (N. M. Coop. Rpt.).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults averaged 0.2-4.2 per 5 sweeps in 4 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept., Nov. 2, 10).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - OKLAHOMA - Light, scattered populations present in Greer and Jackson County alfalfa. (Okla. Coop. Sur.).

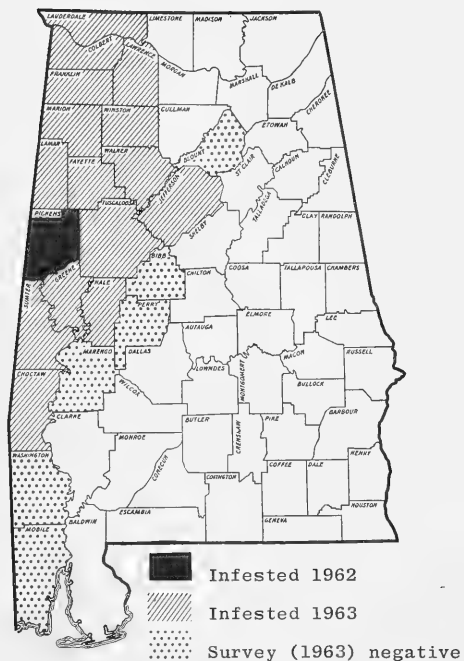
LEAFHOPPERS - OKLAHOMA - Some controls undertaken in Ames area, Major County. (Okla. Coop. Sur.). TEXAS - Several undetermined species damaging spelt wheat and oats in Guadalupe County. (Tex. Coop. Rpt.; Massey).

ALFALFA WEEVIL (*Hypera postica*) - OHIO - Heaviest infestations found south of U.S. Highway 250 in Harrison County, east central area. Many acres of first and second-cutting alfalfa damaged. Several hundred acres treated in autumn. (Hill).
MARYLAND - Larvae ranged 0-12 per 5 sweeps with a few adults in 4 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept., Nov. 2, 10).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NORTH CAROLINA - Adults noted in Chowan County; fairly numerous in field of rye used as cover crop. Feeding on upper portions of blades. Det. by D. A. Mount. (Overman).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ALABAMA - Surveys completed in 14 northwest counties; infestations found in Jefferson, Walker, Fayette, Lamar, Marion, Franklin, Colbert, Lauderdale, Lawrence and Winston Counties. It is apparent that over-lapping infestations of *Z. grandiosella* and *Diatraea crambidoides* (southern cornstalk borer) exist in some of these counties as numerous specimens taken in corn where no internal girdling occurred. Suspicious specimens of *Z. grandiosella* collected in corn in Limestone, Morgan and Cullman Counties; these forwarded for confirmation. No suspects found in Blount County. St. Clair, Shelby and Clarke Counties, on fringe of infested area, yet to be surveyed. Total of 16 counties now known to be infested. Infestations much more noticeable in late corn than in earlier plantings. (McQueen)

Southwestern Corn Borer Survey
 in Alabama as of November 15



ALFALFA CATERPILLAR (*Colias eurytheme*) - NEW MEXICO - Ranged 3-10 larvae per 100 sweeps in alfalfa fields near Aztec, San Juan County. (N. M. Coop. Rpt.). OKLAHOMA - Ranged 4-6 per 10 sweeps in Greer and Jackson Counties but activity considerably curtailed due to cold weather. (Okla. Coop. Sur.). MICHIGAN - Few adults still flying in Shiawassee County November 8. (Dowdy).

FALL ARMYWORM (*Laphygma frugiperda*) - TEXAS - Heavy and widespread; damaging oats in Grimes County. (Tex. Coop. Rpt., Massey). OKLAHOMA - Averaged 1.5 per linear foot in Jefferson County; feeding on wheat. (Okla. Coop. Sur.). FLORIDA - Infested leaves and ears of sweet corn at Pahokee, and infesting clumps and ears of sweet corn at Bean City, Palm Beach County. (Smith, Faircloth).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - MINNESOTA - Still active in Fillmore and Houston Counties. (Minn. Ins. Rpt., Nov. 8). WISCONSIN - Females still developing eggs although numbers very scarce. (Wis. Ins. Sur.). MICHIGAN - Adults, probably this species, still active with a few pairs mating in Shiawassee County November 8. (Dowdy).

HESSIAN FLY (Phytophaga destructor) - ILLINOIS - Survey in 30 fall-planted wheat fields in east-southeast district showed only 0.3 percent of plants infested with 1 larva per infested plant. Approximately 88.4 percent of wheat planted after fly-free date, 3.9 percent questionable and 7.7 percent planted before fly-free date. Wheat very slow to germinate due to dry soil conditions. In northern counties in this district, all wheat is up but some still very small. In southern counties in district, 44-89 percent of wheat not up. Fly-free date for southern part of district was October 8. (Ill. Ins. Rpt., White; Nov. 8).

FRUIT INSECTS

LESSER PEACH TREE BORER (Synanthedon pictipes) - OHIO - Caused severe damage to several peach trees in home gardens throughout northeast area; 10-15 "strikes" per tree on trunk and lower limbs common. (Lyon).

CODLING MOTH (Carpocapsa pomonella) - OHIO - Caused occasional damage to 2 unsprayed apple orchards in Columbiana County. (Lyon).

Peach Insects in Alabama - Sanninoidea exitiosa and Aspidiotus perniciosus light to extremely heavy on isolated peach trees in home orchards since November 1 from Mobile County to Lauderdale County. Damage noted indicates that these two species no doubt affect peach production for home use more than all other problems combined. Infestations heaviest in south and central counties. Synanthedon pictipes and Anarsia lineatella quite damaging to peaches in northwestern counties; especially heavy in Morgan County. Scolytus rugulosus in extremely large numbers observed in some of the older dead and dying branches. (McQueen).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OHIO - Nymphs and adults moderate to heavy on most apple trees in home and commercial apple orchards throughout northeast and east central areas. Counts usually averaged 3-4 adults and 10-15 nymphs per apple leaf. (Lyon).

APPLE MAGGOT (Rhagoletis pomonella) - OHIO - Economic infestations observed on Golden Delicious apples in commercial orchard in Wayne County, northeast. (Cutright). Several trees of Red Delicious apples in commercial orchards in Columbiana County, northeast, severely infested. (Lyon).

PEACH SILVER MITE (Aculus cornutus) - CALIFORNIA - Medium on peach trees in Lone Pine, Inyo County. (Cal. Coop. Rpt.).

PEAR-SLUG (Caliroa cerasi) - PENNSYLVANIA - Light on cherry foliage in Somerset County November 1. (Mikrut).

NAVEL ORANGEWORM (Paramyelois transitella) - CALIFORNIA - Larvae heavy in grapefruit locally in Fillmore, Ventura County. (Cal. Coop. Rpt.).

STINK BUGS - ALABAMA - Damaged kernels with black pit and kernel spot now very noticeable in pecans harvested from 8 trees in Cullman County. Affected 60-65 percent of nuts. (Thomas).

A LEAFHOPPER (Homalodisca liturata) - CALIFORNIA - Adults medium to heavy on Meyer lemons in San Diego, San Diego County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Heavy in black and English walnut husks in Livermore, Alameda County. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Ninth bait spray application completed and fourth aerial treatment of border area canyons made. All trapping reports from both sides of United States-Mexican border remain negative. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Small populations in commercial citrus groves; larger numbers in untreated noncommercial tangerines. (Ariz. Coop. Sur.).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Appearing in large numbers under bark of pecan trees in central area since November 1. Severe past winter indicates that adverse weather will not affect survival of eggs. (McQueen).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Larvae light to medium and leaving Stuart pecans in isolated orchards in Lee County. (McGlohon, Whatley).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues problem on lettuce in Yuma, Maricopa and Pinal Counties; averaged 18-20 per 100 plants in most seriously infested fields. (Ariz. Coop. Sur.). NEW MEXICO - Eggs and larvae almost disappeared from Dona Ana County lettuce fields. (N. M. Coop. Rpt.). FLORIDA - Caused light to moderate damage to 40 percent of 200 cabbage plants at Sanford, Seminole County. (Desin). Damaged 10 percent of inspected green beans at Zellwood Muck, Orange County. (Mosteller, Nov. 6).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Decrease in numbers noted in lettuce fields in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Remains potentially dangerous to lettuce crop in Yuma, Maricopa and Pinal Counties. Foil barriers necessary to protect crops in many areas. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Few larvae being found inside lettuce heads in Yuma County, particularly when lettuce adjacent to sorghums. (Ariz. Coop. Sur.). NEW MEXICO - Eggs and larvae almost disappeared from Dona Ana County lettuce fields. (N. M. Coop. Rpt.).

DIAMONDBACK MOTH (Plutella maculipennis) - NORTH CAROLINA - Larvae heavy on collards in Robeson County. Det. by D. A. Mount. (Hays, Nov. 1).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Few adults collected November 14 from blacklight traps in 2 potato storerooms; rooms held at 55° F. and 60° F. (Wells, Newman).

IMPORTED CABBAGEWORM (Pieris rapae) - MARYLAND - Numerous larvae infesting wild mustard at Colesville, Montgomery County. (U. Md., Ent. Dept.).

MORNING-GLORY LEAF MINER (Bedellia somnulentella) - CALIFORNIA - Species has been quite severe on sweetpotatoes in several locations this season. Presently medium in morning-glory vines in cotton fields in Le Grand, Merced County. (Cal. Coop. Rpt.).

PYRAUSTID MOTHS - CALIFORNIA - Lineodes integra heavy on tomatoes and eggplants in Shingle Springs, El Dorado County, and Udea profundalis medium on Zucchini squash in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

A SCARAB (Cotinis texana) - CALIFORNIA - Heavy in tomato and eggplant plantings in Shingle Springs, El Dorado County. (Cal. Coop. Rpt.).

A BLISTER BEETLE (Meloe sp.) - NORTH CAROLINA - Heavy on turnip greens in Burke County garden. (Parton, Mount).

APHIDS - MARYLAND - Pentatrichopus thomasi and other species very scarce on strawberries at Powellville and Fruitland, Wicomico County. (U. Md., Ent. Dept.).
FLORIDA - Unspecified species damaged stems and leaves of 15 percent of green beans inspected at Zellwood, Orange County. (Mosteller, Nov. 6). OKLAHOMA - Hyadaphis pseudobrassicæ reported on turnips in Jefferson County. (Okla. Coop. Sur.).

BEEF LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Russian-thistle spray program continues with ground rigs currently operating in areas where aerial application not used. Total of 3,310 acres covered by ground application. Overall total 245,380 acres to date. Breeding grounds in foothills from San Joaquin County south through Kern County support scattered overwintering populations on winter annuals. Populations built up on summer host weed, Pectis papposa, in Imperial Valley and moved to newly emerged winter annuals which should hold them and prevent migration to cultivated crops. (Cal. Coop. Rpt.).

LEAF MINER FLIES (Liriomyza spp.) - FLORIDA - Damage by Liriomyza sp. light to heavy on 77 percent of 300 celery plants at Sanford, Seminole County. (Desin).
CALIFORNIA - L. pictella causing medium damage in Zucchini squash in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

AN EARWIG (Labidura riparia) - FLORIDA - Taken on celery at Sanford, Seminole County. (Desin).

A SPRINGTAIL (Entomobrya unostriolata) - CALIFORNIA - Heavy populations migrating from bean sprout seed bed in Pescadero, San Mateo County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Probably this species heavy on cucumber plantings in Colusa, Colusa County. (Cal. Coop. Rpt.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - FLORIDA - Infested bloom on each of 5 cotton plants at Ocoee, Orange County. (Holley, Griffith, Oct. 31).

BOLLWORMS (Heliothis spp.) - ARKANSAS - Larvae of H. zea and H. virescens collected from cotton in Chicot County, southeast, in late July determined as 89 H. zea and 6 H. virescens, or approximately 6 percent H. virescens. (Ark. Ins. Sur.).

GIN-trash Collections in California - Udea rubigalis heavy in Blythe, Riverside County; Proxenus mindara and Heliothis zea larvae heavy in Poso and Buttonwillow, Kern County. (Cal. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SEQUOIA PITCH MOTH (Vespa mima sequoiae) - CALIFORNIA - Heavy in Monterey pine in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

A JUNIPER TWIG MOTH (Periploca nigra) - CALIFORNIA - Heavy on juniper on planting around a county building in Chico, Butte County; also causing severe damage to MacNab cypress (Cupressus macnabiana) on hospital grounds in Grass Valley, Nevada County. MacNab cypress in a rare native tree occurring in 4 locations in State and is nearly extinct. (Cal. Coop. Rpt.).

WHITE-PINE APHID (*Cinara strobil*) - NORTH CAROLINA - Large numbers congregating on white pines in Valdese, Burke County. (Parton, Mount; Nov. 8). VIRGINIA - Probably this species light on white pine in commercial plantation at Appomattox, Appomattox County. (Tarpley, Smith; Nov. 8).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - CALIFORNIA - Heavy on blue spruce in Paradise, Butte County. (Cal. Coop. Rpt.).

SPRUCE SPIDER MITE (*Oligonychus ununguis*) - CALIFORNIA - Medium on Pseudotsuga sp. at Sebastopol, Sonoma County. (Cal. Coop. Rpt.).

FALL WEBWORM (*Hyphantria cunea*) - OHIO - Based on web counts in wild cherry trees, infestations particularly heavy in Columbiana, Carroll, Jefferson and Harrison Counties; 80-90 webs noted in few trees. (Lyon).

TWIG GIRDLER (*Oncideres cingulata*) - OKLAHOMA - Damage continues to be reported from scattered areas throughout State. (Okla. Coop. Sur.). VIRGINIA - Infesting elm, pecan and fruit trees in Hampton. (Tarpley, Nov. 5).

A CYNIPID GALL WASP (*Callirhytis seminosa*) - PENNSYLVANIA - Total of 141 adults reared from 3 galls on pin oak in Harford, Susquehanna County, August 7. Det. by L. H. Weld. (Andreychik).

GREEN PEACH APHID (*Myzus persicae*) - OHIO - Becoming difficult to control in greenhouses throughout northeast area due to buildup of insecticide resistance. Chrysanthemums and snappedragons most common greenhouse hosts; carnations rapidly becoming important hosts. (Lyon).

APHIDS - MICHIGAN - Pterocomma smithiae colonies still a nuisance around homes in southern part of State. (Janes). OKLAHOMA - Several species continue to infest a variety of ornamentals. (Okla. Coop. Sur.). NEW MEXICO - Unspecified species heavy on willows about residences in Farmington, San Juan County. Honeydew a problem on walks. (N. M. Coop. Rpt.). UTAH - Lachnus salignus heavy on branches of weeping willows at North Logan, Cache County. (Knowlton).

COCCIDS - CALIFORNIA - Parlatoria oleae medium on pear and heavy on privet in Auburn, Placer County. Coccus elongatus adults heavy on conifers in a yard in Richmond, Contra Costa County. Pseudococcus adonidum medium on dracena in Sacramento, Sacramento County. Asterolecanium minus adults heavy on oak nursery stock in San Mateo, San Mateo County. Phenacoccus solani heavy on puncture-vine (Tribulus terrestris) in Big Pine, Inyo County. (Cal. Coop. Rpt.). ALABAMA - Chrysomphalus obscurus extremely heavy on ornamental oak at city park in Greenville, Butler County; trunks of trees literally covered with winged forms; trunks and many branches practically a solid mass of scales. Also heavy on numerous oaks at city boat docks in Decatur, Morgan County; many small branches being killed and general vigor of trees being lowered. Unaspis euonymi rather heavy on isolated euonymus border planting in Lee County. Pseudococcus spp. very heavy and destroying numerous African-violets and coleus used as ornamental pot plants in restaurant at Greenville, Butler County; this infestation noticeable and damaging for 18-24 months. (McQueen). FLORIDA - Aspidiotus lataniae severe on stems of 10 Rhododendron indicum inspected at Tampa, Hillsborough County. (Hale, Oct. 31). Saissetia hemisphaerica moderate on 20 percent of stems of 100 Crossandra sp. at Tallahavast, Manatee County. (Bickner, Nov. 1). Fiorinia theae severely damaged leaves of 10 Ilex cornuta var. burfordii at Pine Hills, Orange County (Griffith, Nov. 5), and infestation ranged moderate to severe on 80 Camellia japonica at Cocoa, Brevard County (Levan, Nov. 5). Ceroplastes ceriferus ranged moderate to severe on 22 Podocarpus macrophylla var. maki at Samsula, Volusia County. (Pott, Nov. 6). Light on stems of 2 percent of 200 Hibiscus rosa-sinensis at Hialeah, Dade County. (Brown, Clinton; Nov. 8). Pseudoaonidia clavigera light on stems of 90 percent of 22 Camellia sasanqua at Largo, Pinellas County. (Bingaman, Miller; Nov. 8). Protopulvinaria pyriformis severe on leaves of 6 Brassia actinophylla at Hialeah. (Brown, Nov. 11). NORTH CAROLINA - Ceroplastes sp. infesting twigs of Japanese holly in nursery and unspecified

mealybugs infesting specimen ferns at another location, both in Cumberland County. (Robertson, Nov. 8). OHIO - Coccus hesperidum light on palm plants in Lisbon greenhouse, Columbiana County (Lyon); moderate on leaves of poinsettias in Akron, Summit County (Neiswander). PENNSYLVANIA - Leucaspis japonica heavy and killing out large areas of California privet hedge in Conshohocken, Montgomery County. Also common in Philadelphia area. Also infesting several varieties of maple as well as dogwood, viburnum and various species of privet. (Sleesman, Nov. 5).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - CALIFORNIA - Probably this species, heavy on ceanothus in Fairfax, Marin County. (Cal. Coop. Rpt.).

BEAN THRIPS (Hercotothrips fasciatus) - CALIFORNIA - Adults medium on camphor-trees locally in Fresno, Fresno County. (Cal. Coop. Rpt.).

A TERMITE - MICHIGAN - Colony of an undetermined species found attacking roots of yew plant in city of Monroe, Monroe County. (Janes).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Heavy on Aucuba japonica in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - TEXAS - Light-trap collections indicated quite a varied mosquito population. Species occurring in large or increasing numbers included Aedes sollicitans, Aedes taeniorhynchus, Aedes vexans, Psorophora confinnis, and Anopheles quadrimaculatus. Other species observed were Culex salinarius, Psorophora ciliata, Psorophora ferox, Anopheles crucians, Uranotaenia sapphirina and Culiseta inornata. (Tex. Coop. Rpt.). MARYLAND - Culex sp. swarmed November 10 about home at University Park, Prince Georges County. (U. Md., Ent. Dept.).

AN EYE GNAT (Hippelates collusor) - CALIFORNIA - Populations medium in Bard area, Imperial County. (Cal. Coop. Rpt.).

FLEAS (Ctenocephalides spp.) - CALIFORNIA - Heavy in residence in Coronado, San Diego County. Several infestations also reported in Sacramento, Sacramento County. (Cal. Coop. Rpt.). MINNESOTA - A problem in a home in St. Paul; numerous inquiries received this fall. (Minn. Ins. Rpt.). DELAWARE - Heavy in home locally in New Castle County. (Burbutis).

BED BUG (Cimex lectularius) - OHIO - All stages heavy in burlap sack nest coverings in poultry house at Salem, Columbiana County, northeast. Over 400 birds in this home flock observed bleeding, partly featherless and inflamed. Controls applied. (Lyon).

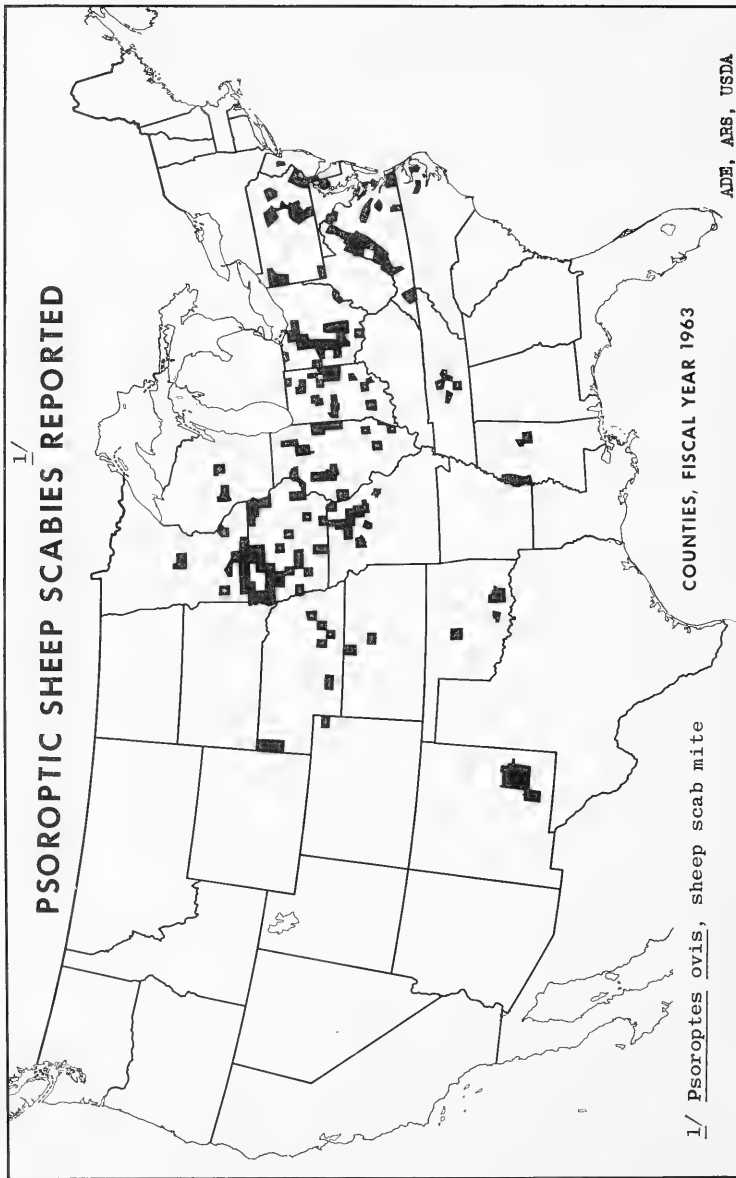
HOG LOUSE (Haematopinus suis) - OKLAHOMA - Heavy infestation of 25 per head reported on hogs in Wagoner County. First report of season. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Numerous on some cattle in Fillmore area, Millard County. (Knowlton).

BROWN DOG TICK (Rhipicephalus sanguineus) - DELAWARE - Several new infestations reported in homes locally in New Castle County. (Burbutis). MARYLAND - Causing concern to homeowner with dog at Chevy Chase, Montgomery County. (U. Md., Ent. Dept.).

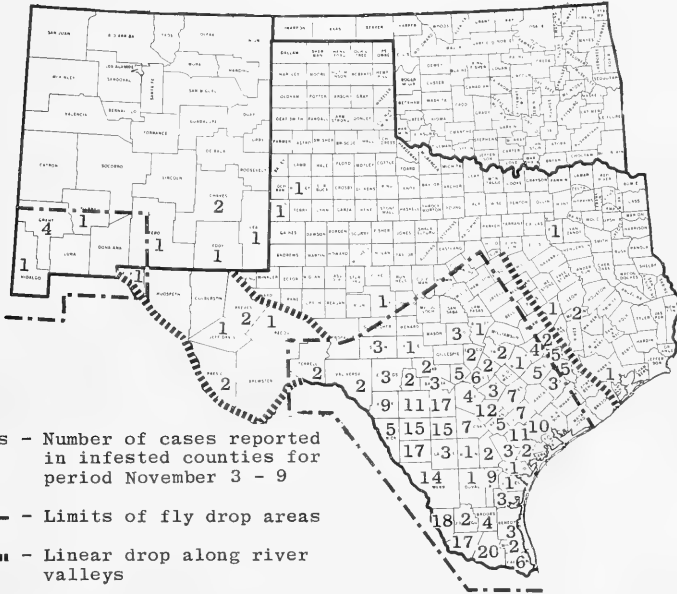
DOG FOLLICLE MITE (Demodex canis) - OHIO - Several dogs observed infested in northwest area. (Liggett).

A BROWN SPIDER (Loxosceles reclusa) - ILLINOIS - Collected in Sullivan, Moultrie County. This is a new county record. (Ill. Ins. Rpt.).



STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period November 3 - 9, a total of 349 confirmed cases, including 3 of unknown origin, were found in 69 counties in TEXAS; this is an increase of 3 cases over the previous period. The most eastern case to date was found in Harris County; the most northeastern case was found in Kaufman County. Both counties reported cases for the first time this year. Webb, Golliad, Victoria, Frio, Zavala, Dimmit, Medina, Uvalde, Hidalgo, Starr, Zapata and Wilson Counties (all inside primary fly release zone) reported 10 or more confirmed cases. There were 12 confirmed screw-worm cases, including one of unknown origin, reported from 7 counties in NEW MEXICO. A total of 133,239,850 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period November 3 - 9

----- - Limits of fly drop areas

..... - Linear drop along river valleys

CATTLE GRUBS (Hypoderma spp.) - ALABAMA - Numerous cattle herds observed in 14 northwestern counties; no grubs noted beneath skin on backs and rumps. (McQueen).

HOUSEHOLD AND STRUCTURAL INSECTS

HOUSE FLY (Musca domestica) - UTAH - Numerous at a location in Ogden, Weber County. Also a problem in Salt Lake City area homes. (Knowlton). NEW MEXICO - This and other flies extremely annoying in businesses and residences at Shiprock, Farmington and Albuquerque. (N. M. Coop. Rpt.). OHIO - All stages very heavy in poultry house near Tappan Lake, Harrison County, east central. Hundreds of thousands of adults massed on ceiling and walls of cement block building; large numbers of eggs, larvae and pupae in droppings. Poor ventilation and high humidity apparently contributing factors to population buildup. (Hill, Triplehorn).

CARPET BEETLE (Anthrenus scrophulariae) - OKLAHOMA - Causing some concern to homeowners in Stillwater area, Payne County. (Okla. Coop. Sur.).

BOXELDER BUG (Leptocoris trivittatus) - DELAWARE - Numerous new reports of annoyance in various areas of New Castle County. (Burbutis). UTAH - A problem in homes in Salt Lake City area, Salt Lake County. (Knowlton).

AN EARWIG (Labidura riparia) - CALIFORNIA - Medium infestation a nuisance in residence in El Cajon, San Diego County. (Cal. Coop. Rpt.).

STORED-PRODUCT INSECTS

A GRAIN BORER (Prostephanus truncatus) - TEXAS - Heavy, widespread populations damaging stored corn in Williamson County. (Tex. Coop. Rpt.; Williamson).

WHITE-MARKED SPIDER BEETLE (Ptinus fur) - MINNESOTA - Large numbers found in feed company building in northern part of State. Specimens also collected from floss of cattails. (Minn. Ins. Rpt., Nov. 8).

RED FLOUR BEETLE (Tribolium castaneum) - OHIO - Moderate to heavy infestations observed in poultry feed at poultry farm in Columbiana County, northeast. (Triplehorn, Lyon).

CONFUSED FLOUR BEETLE (Tribolium confusum) - MINNESOTA - Infested dried milk and feed additives in Minneapolis-St. Paul area. (Minn. Ins. Rpt., Nov. 8).

GRANARY WEEVIL (Sitophilus granarius) - NEW MEXICO - Adults and larvae heavy in shipment of dogfood received at supermarket in Farmington, San Juan County. Shipment treated. (N. M. Coop. Rpt.).

FURNITURE CARPET BEETLE (Anthrenus flavipes) - MARYLAND - Larvae noted in store-room of building at Annapolis, Anne Arundel County. (U. Md., Ent. Dept., Nov. 8).

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - NEBRASKA - Present in bin of stored corn in Nemaha County. (Bergman).

BENEFICIAL INSECTS

Parasites in Pennsylvania - Adults of a PARASITIC EULOPHID WASP (Pediobius aphidiphagus) reared from galls of a cynipid wasp (Amphibolips ilicifoliae) collected June 9 at Hunters Run, Cumberland County. Det. by B. D. Burks. (Sleesman). The following species were reared from oak webworm (Archips fervidanus) collected at Birdsboro, Berks County, June 28 and at Marion Center, Indiana County, August 7: Two parasitic braconids, Agathis agilis and Macrocentrus cerasivoranae, determined by C. F. W. Muesebeck; a parasitic pteromalid, Dibrachys cavus, determined by B. D. Burks; and a parasitic tachina fly, Dichaetoneura leucoptera, determined by C. W. Sabrosky. (Strohecker, Yackley).

MISCELLANEOUS INSECTS

A CAMEL CRICKET (Ceuthophilus sp.) - OHIO - Population heavy in basement of greenhouse in Columbiana County, northeast. Controls applied. (McArtor).

A WATER BOATMAN (Sigara mckinstryi) - CALIFORNIA - Adults incidentally heavy on leaves in orchard in Fortuna, Humboldt County. (Cal. Coop. Rpt.).

ERIOPHYID MITES - CALIFORNIA - Aculus toxicophagus light on poison-oak in San Luis Rey, San Diego County. Aceria boycei nymphs and adults heavy on ragweed (Ambrosia sp.) in Irvine, Orange County. (Cal. Coop. Rpt.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Moderate on road shoulder at Macclenny, Baker County. (Josey, Collins, Nov. 6).

A SNAIL (Vallonia pulchella) - CALIFORNIA - Heavy adult numbers emerging from lawn area and creating nuisance on walks in Orange, Orange County. Also heavy in yard in Arlington, Riverside County. (Cal. Coop. Rpt.).

TERMITES - TEXAS - Heavy, localized populations damaging range grasses in Webb County. (Randolph).

CORRECTIONS

CEIR 13(44):1297 - ELM LEAF BEETLE (Galerucella xanthomelaena) should read (Galerucella xanthomelaena).

CEIR 13(45):1312 - PEACH TREE BORER (Sanninoidea exitiosa) - MARYLAND - Should read: Light on peach trees.....

Name Change for Red-necked Peanutoworm

Ronald W. Hodges^{1/}

Stegasta bosqueella (Chambers) is the name to be used for the red-necked peanutoworm. Some confusion has occurred in the spelling of the trivial name because Chambers (1875) originally used basqueella and subsequently (1878a, 1878b) used bosquella. Two problems arise: 1) change from "a" to "o" and 2) deletion of an "e". The trivial name is based on the Texas county name, Bosque, and in the original description Chambers misspelled that name as Basque. Because a scientific name, either generic or trivial, based on the name of a person or a place must be spelled in the same manner as the original, the correct spelling is "bosque" rather than "basque". The second point concerns the suffix "ella". In the Lepidoptera this suffix was used to designate members of the Tineina and was added to the first part of the name. For ease of pronunciation and euphony the name probably should be spelled bosquella; however, in the original description no clue to this fact exists. Thus, Chambers made an invalid emendation in changing the spelling from bosqueella to bosquella.

References

- Chambers, V. T. 1875. Tineina from Texas. *Canad. Ent.*, 7:92-95.
- , 1878a. Descriptions of new Tineina from Texas, and others from more northern localities. *Bul. U.S. Geol. and Geog. Surv. Terr.*, 4:79-106.
- , 1878b. Index to the described Tineina of the United States and Canada. *Bul. U.S. Geol. and Geog. Surv. Terr.*, 4:125-167.

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LIGHT TRAP COLLECTIONS

| County | Trapping station | Type of trap | Pre-catch | 11/8-14 | 11/11-17 | 11/18-24 | 11/25-31 | 12/1-7 | 12/8-14 | 12/15-21 | 12/22-28 | 12/29-31 | 1962 |
|----------------|------------------|--------------|-----------|---------|----------|----------|----------|--------|---------|----------|----------|----------|------|
| FLORIDA | | | | | | | | | | | | | |
| Gainesville | 11/13 | BL | 2 | | | | | | | | | | |
| MISSISSIPPI | | | | | | | | | | | | | |
| Stoneville | 11/8-14 | MV | 20 | | | | | | | | | | |
| Stoneville | 11/8-14 | BL | 23 | 9 | 1 | 15 | | | | | | | |
| Stoneville | 11/8-14 | BL | 23 | 28 | 7 | 34 | | | | | | | |
| SOUTH CAROLINA | | | | | | | | | | | | | |
| Charleston | 11/4-10 | BL | 16 | 18 | 16 | 3 | | | | | | | |
| Charleston | 11/11-17 | BL | 14 | 2 | 8 | | | | | | | | |
| TEXAS | | | | | | | | | | | | | |
| Waco | 11/9-15 | BL | 4 | 33 | 1 | 19 | | | | | | | |
| Brownsville | 11/7-12 | 6 BL | 254 | 167 | 76 | 1,564 | | | | | | | |
| WISCONSIN | | | | | | | | | | | | | |
| Middleton | 11/8-12 | BL | 1 | | | | | | | | | | |
| Madison | 11/8-13 | BL | 1 | | | | | | | | | | |
| Mazomanie | 10/28-11/10 | BL | 7 | | | | | | | | | | |

* BL = blacklight; I = incandescent; MV = mercury vapor; 0 = other

** 1F = field; 1B = garden beet and/or sugar beet; cole = cole crops (crucifers); cott = cotton; FC = field corn; grain = small grains; leg = legumes (unspecified); lett = lettuce; pean = peanut; pep = pepper; pot = potatoes; SC = sweet corn; sol = solanaceous plants (unspecified); soy = soybean; TC = truck crops (unspecified or mixed); tob = tobacco; tom = tomato.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

BARLEY APHID (Cuernavaca noxius (Mordvilko))

Economic Importance: This aphid has been a pest of small grains in areas of southern Russia (U.S.S.R.) for many years. In the Crimea, this species caused enormous damage in 1912, decreasing the harvest in the area infested by 75 percent. Earlier, in 1900, it was responsible for a loss amounting to 76 percent of the barley crop. The barley aphid only recently has been reported as a major pest of small grains in Turkey where it caused heavy damage to wheat and barley in the Konya area (south central) in 1962. It infested small grains throughout Libya that same year, and a medium infestation of this species, Macrosiphum avenae and Sipha agropyrella was reported in 1961 from Afghanistan on wheat. In the spring of 1945, C. noxius heavily infested barley and wheat in the valley of Soton, Huesca Province, Spain.

Damage by C. noxius is greatest when the crops begin to ripen, and numbers increase substantially at that time. Damaged fields of small grains have a purplish tinge. In the Crimea, the chief damage occurs in June, barley being damaged greater than wheat because the latter crop is usually well developed and the ears have partly emerged from the sheath. In heavily infested barley, the development of the ear is delayed and the upper two or three leaves often do not unfold. Damage may amount to a total loss of harvest in the case of young barley, or to a considerable decrease in the case of wheat or older barley.

Synonymy: Brachycolus noxius Mordv.; Cavahylopterus graminearum Mimeur; and Cavahylopterus noxius (Mordv.).

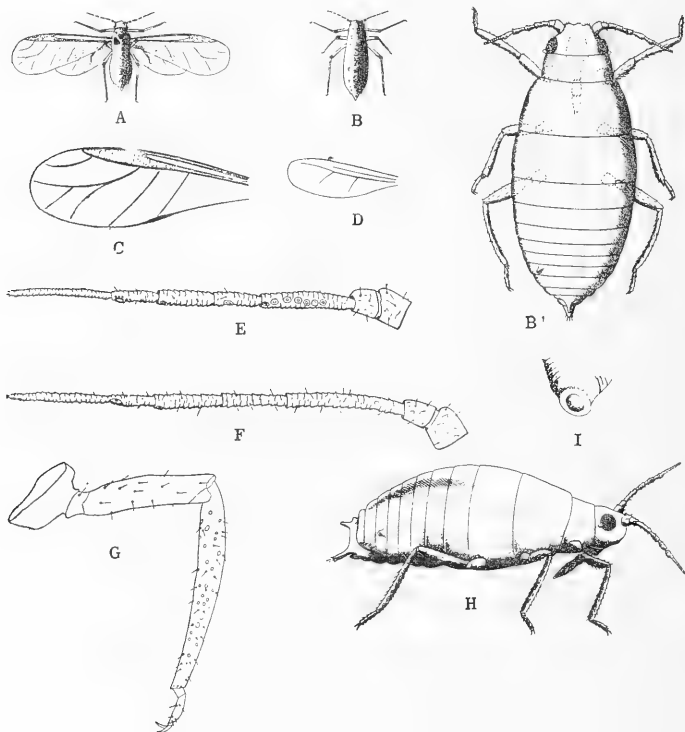
Distribution: U.S.S.R. (Ukraine, Caucasus, Crimea, Kazakhstan), Turkey, Iran, Afghanistan, Israel, United Arab Republic (Egypt), East Africa, Southern Rhodesia, Libya, Morocco, Spain and Great Britain.

Hosts: Barley and wheat appear to be the most important. Also recorded on oats, rice, corn, sorghum, brome, canarygrass, wheatgrass and other native grasses.

Life History and Habits: The biology as studied in the Crimea is as follows: Aphids appear in the spring and live at the base of the inflorescence or inside the sheath of the covering leaf when the colonies are small. Later, when the crops ripen and the numbers increase, they concentrate on the green parts of the plant, tip of inflorescence, or as low down as the first node of the stem. In June, colonies consist of adult parthenogenetic wingless females, immatures and winged colonizing females. In captivity, wingless individuals live 15 or 16 days and winged ones 12 to 14 days. Migration of winged adults takes place usually during the morning. Peak populations are present when the grain is nearly mature, with numbers decreasing rapidly after harvest. Colonies subsist on the residue of the crop or on native grasses for the remainder of the season. Sexual forms appear the first part of October and are present until the first frosts, with the resulting eggs hatching the next spring.

Description: Cuernavaca is similar to the genus Hyalopterus (rusty plum aphid, H. pruni (Geoffroy) is an example), but differs in possessing short cornicles and by the presence of a supra-caudal process on the eighth tergum. Cuernavaca noxius (Mordvilko) WINGED FORM: Head: Light brown. Frontal tubercles not well developed; compound eyes black. Antenna light brown, base of third segment lighter. Number of sensoria on third and fourth antennal segments 6 (ranging 4-8) and 2 (ranging 1-3), respectively; fifth segment without secondary sensoria. Apical rostral segment without secondary hairs. Thorax: Brown. Wing venation normal. Legs light brown; first hind tarsal segment with two hairs. Abdomen: Light green.

Lateral sclerites faintly indicated in mounted specimens; cornicles very short, vasiform and light green. Cauda light green; anal plate brown. Supra-caudal process present on eighth tergum with 2 hairs. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.)



Figures of *Cuernavaca noxius* (Mordvilko): A - Winged adult. B & B' - Wingless adult, dorsal view. C - Forewing. D - Hind wing. E - Antenna of winged adult. F - Antenna of wingless adult. G - Hind leg of oviparous female. H - Wingless adult, lateral view. I - Cornicle.

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Illustrations from Alfaro and Mimeur.

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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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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID heavy on alfalfa in Rockbridge and Culpeper Counties, Virginia; heavy in Monroe County, Georgia; and remains heavy at Fayetteville, Arkansas. Populations continue downward trend in Wisconsin. FALL ARMYWORM damaging in widespread areas of De Witt, Karnes and Gonzales Counties, Texas, and heavy, localized infestations occurring on late corn in Starr County, same State. (p. 1361). SWEETCLOVER WEEVIL caused severe damage to sweetclover and alfalfa seedlings in many harvested wheat fields in Paulding, Van Wert, Auglaize and Allen Counties in northwest Ohio; ALFALFA WEEVIL larvae causing light damage to field of alfalfa in Marion, Smyth County, Virginia. (p. 1362).

MITES were expected to be severe problem this fall and winter in Florida citrus, but have developed into more of a problem than anticipated. Populations of TEXAS CITRUS MITE at highest November level on record. (p. 1363).

PINK BOLLWORM larvae continue to be collected in Maricopa and Pinal Counties, Arizona; 12 fields infested in Pinal County from Florence to Randolph. Potential treatment area in Pinal County over 6,000 acres. During October, pink bollworm collected for first time this season in 10 Louisiana parishes and in 8 Arkansas counties. Infestations found in 20 Arkansas counties by the end of October. (p. 1365).

DETECTION

CITRUS RUST MITE collected in Yuma, Yuma County, Arizona; a new State record. (p. 1363). New county records of significance were a LEAFHOPPER (Homalodisca insolita) in Manatee County, Florida (this leafhopper is a proven vector of phony peach disease) (p. 1362); CUBAN-LAUREL THRIPS in Ventura County, California (p. 1366); A PSYCHID MOTH (Apterona crenulella) in Plumas County, California (p. 1368); and WHITE-FRINGED BEETLES in Alamance County, North Carolina, Lancaster County, South Carolina, and Marion and Roane Counties, Tennessee (p. 1369).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. During period November 10-16, number of confirmed cases in Texas decreased 149 from 349 reported previous period. (p. 1367).

Reports in this issue are for week ending November 22, unless otherwise indicated.

WEATHER OF THE WEEK ENDING NOVEMBER 25

Cloudy, rainy weather prevailed over Texas on Monday, November 18. Precipitation amounts ranged widely. Many places received only light amounts. Little Rock, Arkansas, received 1.11 inches.

By Tuesday, a mass of arctic air began pouring into Montana and continued forward to develop the country's first early winter storm. Temperatures plunged to 5 degrees to 10 degrees below zero at some stations in Montana, east of the Continental Divide and at stations in North Dakota and South Dakota. Aberdeen, South Dakota, registered 4 degrees below zero Saturday morning. The Weather Bureau issued cold wave warnings for the northern Rocky Mountains and the northern Great Plains. Stockmen were warned to protect their animals from snow, wind and falling temperatures. Motorists were cautioned that hazardous driving conditions might develop in areas of freezing rain or drizzle in Nebraska and nearby portions of Minnesota and Iowa. Similar warnings were issued to stockmen and drivers in Arizona and New Mexico. The Rocky Mountains and northern Great Plains received snow Wednesday night. A 6-inch blanket of freezing snow covered Flagstaff, Arizona, Thursday morning.

The stormy weather spread eastward and the cold temperatures pushed southward. Livestock and traveler warnings continued in effect over the northern and central Great Plains. Showers and thunder storms occurred over the southern central stations. Most of the Nation received some rain on November 21.

Rains fell from the Great Plains to the Atlantic on Friday, with generous amounts in the Mississippi and Ohio Valleys. On Saturday, the heaviest rains occurred along the Atlantic coast where the cold front lay parallel to the coast. At the end of the week, a new storm was bringing rain to the north Pacific coast and a weak cold front lay across southern Florida. High pressure areas were centered over the Great Basin and the Great Lakes.

Temperatures during the week averaged slightly below normal over California, Nevada, Utah, Arizona, western New Mexico, eastern Montana and western Dakotas. Temperatures ranged from -7 degrees at Red Bluff, California, to +14 degrees in southern New York.

Generous rainfall occurred along the Pacific coast and in the western hills and western slopes of the Sierra and Cascade Mountains, also part of the coast and southern Great Plains and the Great Lakes region. Rainfall was generally light over the Great Basin, the Rocky Mountains and the western part of the northern Great Plains. Amounts ranged light over the East--mostly light but a few scattered localities received a few showers or more. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

- SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Generally light infestations found in alfalfa in Dona Ana, Eddy and Chaves Counties. Light, spotted infestations noted at Redrock, Grant County. (N. M. Coop. Rpt.).
- OKLAHOMA - Ranged 50-250 per 10 sweeps in Choctaw County alfalfa, southeast. (Okla. Coop. Sur.).
- ARKANSAS - Numbers remain heavy; 400-500 per foot of row in alfalfa on University of Arkansas farm at Fayetteville. (Ark. Ins. Sur.).
- GEORGIA - Heavy on alfalfa in Monroe County. (Johnson).
- VIRGINIA - Heavy in 5-6 fields of alfalfa in Rockbridge County. (Tarpley, Strecker; Nov. 18). Severe in several alfalfa fields at Culpeper, Culpeper County. (Tarpley, Hutcheson).
- WISCONSIN - Populations continue downward trend. Nymphs less common than previous week; few males and alate viviparae still present although comprising only 0.05 percent of population. Apterous oviparae continue egg laying. Observations disclosed definite preference for old, dry stems and more than 98 percent of eggs deposited behind stipule. Some eggs examined in partially collapsed condition; no data on viability available. (Wis. Ins. Sur.).
- SWEETCLOVER APHID (*Therioaphis riehmi*) - NEBRASKA - Light in young sweetclover in Lancaster County. (Calkins, Stevens, Bergman).
- PEA APHID (*Acyrtosiphon pisum*) - OHIO - Still present in alfalfa surveyed throughout northwest and northeast areas. Ranged 150-175 per 50 sweeps in a Wayne County field. (Lyon).
- WISCONSIN - Populations increased slightly; alates more common in few fields examined. (Wis. Ins. Sur.).
- NEBRASKA - Moderately high numbers noted in Lancaster County sweetclover. (Calkins, Stevens).
- ARKANSAS - None found in alfalfa and vetch in northwest. (Ark. Ins. Sur.).
- NEW MEXICO - Generally light in alfalfa in Dona Ana, Eddy and Chaves Counties. Light, spotted infestations noted at Redrock, Grant County. (N. M. Coop. Rpt.).
- GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Populations of 7 per linear foot of row noted in barley in Kiowa County. (Okla. Coop. Sur.).
- ARKANSAS - None found in small grain in northwest area. (Ark. Ins. Sur.).
- CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Populations of 400 per linear foot of row causing light damage to barley in localized area of Kiowa County, southwest. (Okla. Coop. Sur.).
- ENGLISH GRAIN APHID (*Macrosiphum avenae*) - ARKANSAS - None found in northwest area small grain. (Ark. Ins. Sur.).
- TARNISHED PLANT BUG (*Lygus lineolaris*) - OKLAHOMA - Ranged 2-8 per 10 sweeps in Choctaw County, southeast. (Okla. Coop. Sur.).
- OHIO - Adults light in Wayne County, northeast; adults ranged 6-8 per 50 sweeps in one field. (Lyon).
- POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Nymphs and adults common in field of alfalfa in northern Green County; averaged 2 per sweep near field margin. Dissection showed females barren of eggs. (Wis. Ins. Sur.).
- MEADOW SPITTLEBUG (*Philaenus spumarius*) - OHIO - Adults ranged 15-20 per 50 sweeps in a Wayne County alfalfafield. Dissection of several females revealed masses of eggs. (Lyon).
- FALL ARMYWORM (*Laphygma frugiperda*) - TEXAS - Heavy, localized infestations occurring on late corn in Starr County. (Tex. Coop. Rpt.; Plyer). Medium to heavy numbers damaging in widespread areas of De Witt, Karnes and Gonzales Counties. (Tex. Coop. Rpt.; Smith).
- ALFALFA CATERPILLAR (*Colias eurytheme*) - OHIO - Adults still observed in flight in northeast area alfalfa fields; overall populations decreasing due to weather. This is an exceptionally late record. (Lyon).
- MICHIGAN - Few adults still flying in Shiawassee County November 17. (Dowdy).

SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - OHIO - Severe damage to sweetclover and alfalfa seedlings observed in many harvested wheat fields in Paulding, Van Wert, Auglaize and Allen Counties, northwest. (Lyon). NEBRASKA - Averaged 14 per 10 sweeps in Lancaster County. (Calkins, Stevens).

ALFALFA WEEVIL (*Hypera postica*) - VIRGINIA - Larvae causing light damage to field of alfalfa in Marion, Smyth County. (Eller).

CUCUMBER BEETLES (*Diabrotica* spp.) - NEBRASKA - *D. undecimpunctata howardi* adults common in first-year sweetclover fields in Lancaster County. (Calkins, Stevens, Bergman). OKLAHOMA - Heavy counts of 15 *D. undecimpunctata howardi* per 10 sweeps noted in alfalfa checked in Choctaw County, southeast. (Okla. Coop. Sur.). NEW MEXICO - *D. undecimpunctata tenella* adults ranged 6-20 per 100 sweeps in alfalfa at Redrock, Grant County. (N. M. Coop. Rpt.).

A CRAMBID (*Chilo loftini*) - CALIFORNIA - Larvae light in experimental sugarcane plantings at Holtville, Imperial County. (Cal. Coop. Rpt.).

RED-LEGGED GRASSHOPPER (*Melanoplus femurrubrum*) - MICHIGAN - Adults still active and few pairs observed mating in Shiawassee County November 17. (Dowdy). WISCONSIN - Females continue to produce and lay eggs. Observations in field near Brodhead revealed average of 2 egg clusters per square foot, although carabid larvae very common in field. (Wis. Ins. Sur.).

FRUIT INSECTS

A LEAFHOPPER (*Homalodisca insolita*) - FLORIDA - Collected in Steiner trap in orange tree at Sneed Island, Manatee County, November 11. (Chancey). This is southernmost record in State for this proven vector of phony peach disease. (Fla. Coop. Sur.).

MELON APHID (*Aphis gossypii*) - CALIFORNIA - Medium on peach and spirea nursery stock in Visalia, Tulare County. (Cal. Coop. Rpt.).

RUSTY PLUM APHID (*Hysteroneura setariae*) - ARIZONA - Numerous on leaves and stems of many fruit trees in areas of Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

A COREID BUG (*Leptoglossus zonatus*) - ARIZONA - Continues to damage late fruits in Casa Grande area, Pinal County. (Ariz. Coop. Sur.).

APPLE MAGGOT (*Rhagoletis pomonella*) - NEBRASKA - Damaged apples in Butler County. (Bergman). New county record.

CODLING MOTH (*Carpocapsa pomonella*) - NEBRASKA - Damaged apples in Butler County. (Bergman).

A BUPRESTID BEETLE (*Acmaeodera tubulus*) - TEXAS - Adults and larvae infesting pecan trees in Brazos County. (Wellso).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - McPhail traps yielded 4 adults at Nogales, making total of 42 specimens this year. Inspection of fallen fruit continues negative. (Ariz. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - MEXICO - Traps installed in principal citrus-producing areas of Nuevo Leon. Elsewhere, 3,676 traps inspected 7,656 times negative during October. (PPC, Mex. Reg.). FLORIDA - Eighth and

ninth coverages applied in Miami Springs and El Portal areas, Dade County. This will complete control requirements. Last collection made August 28. (PPC, South. Reg., Oct., Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Parasitism and degree of infestation indicate necessity for liberation of parasites on 21 properties in 5 States. Total of 255,200 specimens of a parasitic eulophid (Prospaltella opulenta) and 22,000 specimens of a parasitic platygasterid (Amitus hesperidum) distributed to points where needed in States of Durango, Yucatan, Guanajuato, Jalisco, Veracruz and Oaxaca. In Tamaulipas, 72,169 trees on 52 properties inspected; 1,979 trees on 27 properties infested. Infestations sharply reduced at Llera, Tamaulipas, by P. opulenta. Chemical Control Zone - First infestation in over 8 months found in Municipio Villa de Santiago, Nuevo Leon, October 22. First spray treatment of infestation and environs completed October 25. Infestation involved 2 trees. Inspection of 100,670 citrus trees including 1,300 nursery trees on 286 properties in States of Nuevo Leon and Sonora showed 2 infested trees on one property. (PPC, Mex. Reg., Oct. Rpt.).

NAVEL ORANGEWORM (Paramyelois transitella) - CALIFORNIA - Light in navel orange fruit in Vallejo, Solano County; coastal navel oranges periodically damaged. (Cal. Coop. Rpt.).

CITRUS RUST MITE (Phyllocoptruta oleivora) - ARIZONA - Specimens collected from lemons at Yuma, Yuma County; this is first record of species in State. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Damage continues on citrus trees in Yuma area, Yuma County. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - Mid-November - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 70 percent of groves (norm 71 percent); 62 percent economic (norm 46 percent). Population increased rapidly and will continue very high on leaves and fruit for next month. Highest districts Bartow, Brooksville, west coast, upper east coast, Gainesville, Orlando and ridge. Only Indian River low. TEXAS CITRUS MITE (Eutetranychus banksi) infested 60 percent of groves (norm 28 percent); 24 percent economic (norm 10 percent). Recent increase brought populations to highest November level on record. Further increase expected. Highest districts Gainesville, upper east coast, Brooksville, west coast and ridge. CITRUS RED MITE (Panonychus citri) infested 53 percent of groves (norm 53 percent); 20 percent economic (norm 25 percent). Population near normal moderate level for November. Little change expected. Highest districts Brooksville, west coast and Orlando. PURPLE SCALE (Lepidosaphes beckii) infested 85 percent of groves (norm 67 percent); 20 percent economic (norm 4 percent). GLOVER SCALE (L. gloverii) infested 67 percent of groves (norm 26 percent); 20 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 75 percent of groves (norm 41 percent); 18 percent economic (norm 1 percent). YELLOW SCALE (Aonidiella citrina) infested 38 percent of groves (norm 12 percent); 6 percent economic (norm 1 percent). Although these scale species are much above normal abundance, only 5-10 percent of groves in scattered locations harbor important infestations. Little change is expected. WHITEFLIES infested 70 percent of groves (norm 60 percent); 25 percent economic (norm 11 percent). Statewide population still high, despite recent decline. Further decrease is expected.

Spray Notes: Mites were expected to be a severe problem this fall and winter, but have developed into more of a problem than anticipated. This situation will necessitate extra sprays in many groves. (R. A. Johnson, W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

A COREID BUG (Leptocoris rubrolineatus) - CALIFORNIA - Adults feeding on fig fruit in Ontario and San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

THRIPS - TEXAS - Large numbers of unspecified species occurring on fig leaves in Jefferson County. (Thomas).

TRUCK CROP INSECTS

CABBAGE APHID (Brevicoryne brassicae) - OHIO - Nymphs and adults actively feeding on inner leaves of cabbage in Fulton County; weather caused some mortality to aphids. Ranged 200-250 per cabbage plant. (Lyon).

AN APHID - GEORGIA - Infestations of an undetermined species heavy on collards in Bibb County. (Brightwell, Nov. 15).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Caused light to moderate damage to 49 percent of 200 cabbage plants at Sanford, Seminole County. No larvae noted on survey. (Desin). ARIZONA - Economic infestations still found in lettuce fields of Yuma, Maricopa and Pinal Counties. Probably most serious pest of lettuce currently. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Causing economic damage to lettuce in Yuma, Maricopa and Pinal Counties; ranged 6-10 larvae per 100 plants. Controls applied in nearly all areas. (Ariz. Coop. Sur.).

OMNIVOROUS LOOPER (Sabulodes caberata) - CALIFORNIA - Heavy on raspberry plants; feeding on leaves and fruit in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Foil barriers still being used in Yuma County to protect lettuce from large migrating populations. (Ariz. Coop. Sur.). CALIFORNIA - Medium in sugar beets in Brawley, Imperial County. (Cal. Coop. Rpt.).

FALL ARMYWORM (Laphygma frugiperda) - ARIZONA - Damage to lettuce continues; heavy controls required in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - OHIO - High mortality due to cool weather. (Lyon).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - During month of October in LOUISIANA, approximately 340,600 bushels of sweetpotatoes treated prior to storage and 2 acres of wild hosts treated. New infestations found on 33 properties, all within previously infested parishes. Inspections in MISSISSIPPI showed 7 newly infested properties in Perry County, 12 in Jones County and 1 in Greene County; 2 reinfestations found, one each in Forrest and Lawrence Counties. Approximately 2,800 bushels of sweetpotatoes treated before storage in ALABAMA; one new infestation found in Mobile County. One survival infestation found in Grady County and 2 newly infested properties found in Lowndes County, GEORGIA; one property released from regulation in latter County. (PPC, South. Reg., Oct. Rpt.). Moderate in sweetpotatoes in Crisp County. (Slade, Taylor, Nov. 7).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - GEORGIA - Heavy on mustard greens in Effingham County. (Vanderford, Nov. 14).

A SAP BEETLE (Carpophilus humeralis) - CALIFORNIA - Adults heavy on tomato fruit in Kentfield, Marin County. (Cal. Coop. Rpt.).

LEAF MINER FLIES - FLORIDA - Liriomyza sp. caused light to moderate damage to 91 percent of 300 celery plants at Sanford, Seminole County; 3 adults observed. (Desin). Undetermined species severely damaged leaves of 60 tomato plants checked at Ocoee, Orange County. (Avazian, Nov. 8).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - Gin-trash inspections discontinued in GEORGIA; all inspections negative this season. Gin-trash and lint-cleaner inspections in ALABAMA negative for month. Collections from gin trash in 18 MISSISSIPPI counties negative for month. Inspection of gin trash and lint cleaners made in 26 LOUISIANA parishes. Collected for the first time this season in Allen, Beauregard, Bossier, Claiborne, Evangeline, Grant, Lincoln, Jefferson Davis, Red River and Winn Parishes. Infestation in Jefferson Davis Parish found by boll inspection in field; other finds result of gin-trash or lint-cleaner inspections. In ARKANSAS, infestations found in 20 counties to date; 44,397 bushels of gin trash inspected. Collected for the first time this season in Calhoun, Chicot, Clark, Independence, Jackson, Miller, White and Woodruff Counties, Arkansas. Survey continued in 4 eastern and 7 south central and southwestern counties in OKLAHOMA. Heaviest infestation found in Comanche County where 460 specimens recovered from 30 bushels of gin trash. Surveys revealed infestations more general in Oklahoma than during past 2 seasons. Collected for the first time this season in Kiowa County. (PPC, South. Reg., Oct. Rpt.). NEW MEXICO - Several fields in southern Dona Ana County with light to relatively heavy spotted infestations in terminal bolls. Heaviest infestations found in Supima cotton fields. None found in cotton fields at Redrock, Grant County. (N. M. Coop. Rpt.). ARIZONA - Larvae continue to be collected in gin-trash in Maricopa and Pinal Counties; 12 fields infested in latter County from Florence to Randolph. Potential treatment area in Pinal county over 6,000 acres. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PACIFIC FLATHEADED BORER (Chrysobothris mali) - CALIFORNIA - Larvae heavy in twigs of Raphiolepis indica in Valley Center, San Diego County. (Cal. Coop. Rpt.).

PINE APHIDS - ALABAMA - At least 2 undetermined species heavy on ornamental loblolly and slash pines throughout State; only minor injury apparent to needles and stems. Infestations appear to increase rapidly with approach of cold weather and lack of predators. Aphids appearing on needles covered with light cottony mass and are extremely heavy in Chilton County. (Helms, Buttram, et al.).

APHIDS - DELAWARE - Longistigma caryae heavy on pussy willow in northern New Castle County. (Burbutis). ALABAMA - Macrosiphoniella sanborni extremely heavy and damaging chrysanthemums in central counties in ornamental gardens and small home plantings. (Bell et al.). Macrosiphum rosae quite numerous and damaging remaining rose buds in central area gardens. Cool weather apparently caused reduction in numbers of predators; thereby, aphids increased many fold during past 15 days, with 25-75 per rose stem. (McQueen). NEW MEXICO - Unspecified bark-feeding species damaging willows at Alameda and Albuquerque, Bernalillo County. Cinara tujafilina moderately heavy and a problem on arborvitae at Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

COCCIDS - ALABAMA - Lepidosaphes camelliae light on few camellia plantings in Greenville Park, Butler County. (McQueen). FLORIDA - Ceroplastes ceriferus severely damaged 20 percent of 20 Camellia sasanqua at Longwood, Seminole County. (Youtsey, Nov. 6). Fiorinia theae caused moderate to severe damage to 2 percent of C. sasanqua (Nov. 1) and Chrysomphalus aonidium caused moderate to severe damage to 5 percent of 150 Ligustrum sp. (Nov. 5) at Cocoa, Brevard County. (Levan). Phenacaspis cockerelli caused moderate to severe damage to one of three Magnolia grandiflora inspected at Rockledge, Brevard County. (Levan, Nov. 5). Pseudaulacaspis pentagona caused moderate to severe damage on 10 percent of stems and leaves of 110 Koeleruteria paniculata at Rockledge (Nov. 5), and Pseudococcus adonidum caused moderate to severe damage to stems and leaves of 50 percent of 16 Dracaena sp. at Eau Gallie (Nov. 7), both in Brevard County. (Levan). OKLAHOMA - Unspecified mealybugs heavy on ivy plants in localized area

of Payne County. (Okla. Coop. Sur.). CALIFORNIA - Diaspis boisduvalii medium on orchids in Corona, Riverside County. (Cal. Coop. Rpt.). NEW MEXICO - Light to heavy populations of Unaspis euonymi damaging euonymus plants in Bernalillo County. (N. M. Coop. Rpt.).

CUBAN-LAUREL THRIPS (Gynaikothrips ficorum) - CALIFORNIA - Medium on Ficus sp. in Oxnard, Ventura County. This is a new county record. Nymphs and adults medium on Ficus sp. nursery stock in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

A GRASSHOPPER (Schistocerca vaga) - CALIFORNIA - Heavy on geranium plantings in Encinitas, San Diego County. (Cal. Coop. Rpt.).

A LEAF MINER FLY - CALIFORNIA - Undetermined species medium in leaves of chrysanthemum nursery stock in Half Moon Bay, San Mateo County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - GEORGIA - Very heavy on geranium and chrysanthemum in Gwinnett County. (Vanderford).

SOUTHERN RED MITE (Oligonychus ilicis) - CALIFORNIA - Medium on azalea in Brea, Orange County. (Cal. Coop. Rpt.).

SLUGS - GEORGIA - Heavy in pansies and other ornamental flowers. (Brightwell, Nov. 15).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - FLORIDA - Light trap collections at 43 coastal situations show continued reduction in catch of Aedes sollicitans, Aedes taeniorhynchus and miscellaneous freshwater species. Several traps negative or catches very light; largest total catches at Santa Rosa, Walton County. Highest counts of A. taeniorhynchus were 66 females per trap night at Rock Harbor, Monroe County (Nov. 1), and 115 at Boca Grande, Lee County (Nov. 5). A. sollicitans negative at most traps; highest count was 56 females at Santa Rosa. (Fla. St. Board of Hlth.). ARIZONA - Culiseta inornata increasing rapidly in river areas of Yuma County. (Ariz. Coop. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Light counts of 10 per head remain active in Pushmataha County area, southeast. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Averaged 40 per animal in feed lot in Pushmataha County, southeast. Populations light at sanitary land fills in Tulsa area. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Controls applied to 2,500 head in Cache County, 1,000 head in Summit County and 2,500 head in Wasatch County; controls also applied to 50 percent of beef cattle in Weber County. (Knowlton, Gibson, et al.).

YELLOW JACKETS - ALABAMA - Vespa spp. continue at above normal numbers and present quite a menace. (McQueen).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - Heavy counts of 60 per head noted on cattle in Pushmataha County, southeast. (Okla. Coop. Sur.).

BROWN DOG TICK (Rhipicephalus sanguineus) - ALABAMA - Numerous infestations on dogs reported in Lee County area. (McQueen).

A MITE - NORTH CAROLINA - An undetermined species causing considerable concern in large flock of laying hens in Lenoir County. (Koonce).

STORED-PRODUCT INSECTS

BROADBEAN WEEVIL (Bruchus rufimanus) - CALIFORNIA - Heavy in lot of dried beans in South San Francisco, San Mateo County. (Cal. Coop. Rpt.).

FLAT GRAIN BEETLE (Cryptolestes pusillus) - OHIO - Adults light in ground feed at grain elevator in Paulding County. (Triplehorn, Lyon).

MEDITERRANEAN FLOUR MOTH (Anagasta künniella) - OHIO - Finely ground corn webbed and matted together at grain elevator in Van Wert County. Heavy infestations reported earlier in season. (Triplehorn, Lyon).

DARK MEALWORM (Tenebrio obscurus) - OHIO - Larvae noted in old cracked grains at elevator in Van Wert County. (Triplehorn, Lyon).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Adults collected in 2 potato storage rooms in Monroe County at rate of 47 each night per storage room; single blacklight trap in each room. Temperatures held at 55° F. and 60° F. in these rooms. (Wells, Laser). OHIO - Examination of potatoes in storage revealed no infestations in Lucas County; periodic inspections will continue. (Lusch).

BENEFICIAL INSECTS

LADY BEETLES - ARKANSAS - Several species continue active; adults and larvae observed in northwest area alfalfa. (Ark. Ins. Sur.).

A BIG-EYED BUG (Geocoris punctipes) - ARKANSAS - Active in vetch in northwest. (Ark. Ins. Sur.).

MISCELLANEOUS INSECTS

BEEF ARMYWORM (Spodoptera exigua) - CALIFORNIA - Medium on Jimsonweed in Oxnard, Ventura County. (Cal. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - CALIFORNIA - Single male moth taken in argon light trap in Winterhaven, Imperial County; this is third moth taken in State this year. All 3 have been males. No infestations located by intensive survey. (Cal. Coop. Rpt.).

A PSYCHID MOTH (Apterona crenulella) - CALIFORNIA - Noted for the first time in Quincy, Plumas County; cases appearing on plum and other host plants. This species first introduced in State in 1940 in Nevada City, Nevada County. Now known in Butte, Modoc, Placer and Yuba Counties as well. Apparently species has definite elevation range; more nuisance than damaging pest in State. (Cal. Coop. Rpt.).

GROUND MEALBUG (Rhizoecus falcifer) - CALIFORNIA - Heavy in soil and roots in Miranda, Humboldt County. (Cal. Coop. Rpt.).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - ALABAMA - Observed in cornstalks in all 13 counties recently surveyed in west and northwest areas. Also observed in cornstalks in Clay, Coosa and Chambers Counties. (Barwood et al.).

JAPANESE BEETLE (Popillia japonica) - All infestations treated in Detroit area, MICHIGAN; 722 acres treated in October; 2,991 acres treated in Ypsilanti area. (PPC, Cent. Reg.). In TENNESSEE, treatment applied to areas in Carter, Hawkins, Johnson, Knox and Sullivan Counties; application made on 3,255 acres at Tellico

Plains, Monroe County; 6 miles of roadside and some adjoining areas treated in Kittlefoot Wildlife Refuge, Johnson County. (PPC, South. Reg., Oct. Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - Found for the first time in Alamance County, NORTH CAROLINA; small extensions found in several other known infested counties. Survey in SOUTH CAROLINA added acreage to known infestations in Darlington, Horry and Sumter Counties and a new county record for Lancaster County. Treatment completed on all known infestations in Sumter County. New area of infestation found at Jackson, Marion County, TENNESSEE, and near the town of Harriman, Roane County. Delimiting of these infestations not completed but several thousand acres in Marion County found infested. Small extensions of infested area found at Harrisburg, Poinsett County, and Jonesboro, Craighead County, ARKANSAS. Inspections made in several MISSISSIPPI counties revealed infested areas in Amite and Pike Counties; delimiting completed on infested areas of Itawamba and Prentiss Counties. Extensions of known infestations found in GEORGIA in nearly all areas where inspections made. (PPC, South. Reg., Oct. Rpt.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Treatment applied to 2,700 acres in Gadsden County and 263 acres in Santa Rosa, Okaloosa and Walton Counties during October. (PPC, South. Reg.). Light infestation noted on road median at Lake Alfred, Polk County, November 15. This is new infested Township (S-5, T-28, R-26). (Richards). GEORGIA - Aerial treatment completed in Pierce, Telfair, and Brantley Counties, in city of Jackson and highway rights-of-way in Crawford and Muscogee Counties during October. Surveys in some treated areas revealed small number of new mounds still active; few sexual forms present. (PPC, South. Reg.). Swarms observed November 19 in Clayton County; largest flight on record in area. (Vanderford, Shirley). ALABAMA - Treatment made on 104 acres of highway rights-of-way in Limestone County during October. (PPC, South. Reg.). Few extremely isolated infestations noted in northwest Tallapoosa County. (Barwood). MISSISSIPPI - Treatments applied in Amite, Chickasaw, Copiah, Covington, Hinds, Jefferson Davis, Lee, Monroe, Pike, Smith, Wilkinson and Webster Counties; industrial sites, shipping points and nurseries inspected throughout State. LOUISIANA - Aerial treatments completed in East Carroll, Madison, Morehouse and West Carroll Parishes and in Opelousas area; treatment made in 21 parishes, mostly in small areas. Appraisal survey in early treatment block in Evangeline Parish showed 98.6 percent kill. TEXAS - Treatments completed in Colorado and Wharton Counties. ARKANSAS - Individual mound treatments begun in Union and Ashley Counties; small extensions of infested areas found south of Crossett, Ashley County. Surveys negative in other counties. TENNESSEE - Surveys negative in 18 counties. SOUTH CAROLINA - Aerial treatments made in Orangeburg and Calhoun Counties and started in Jasper County. NORTH CAROLINA - Aerial applications made to 4,755 acres in eastern Carteret County and ground treatment to schoolyard in Jacksonville; small extensions found in Morehead City infestation. (PPC, South. Reg., Oct. Rpt.).

A SNAIL (*Vallonia pulchella*) - CALIFORNIA - Heavy populations accumulating on sidewalks and lawns in San Carlos, San Mateo County. (Cal. Coop. Rpt.).

CORRECTIONS

CEIR 13(42):1273 - WHITE FRINGED BEETLES (*Graphognathus* spp.) - Infestation reported in Forsythe County, GEORGIA, in error. Note should read: Reported for the first time in Forsythe County, NORTH CAROLINA.

LIGHT TRAP COLLECTIONS

| Temperature & Precipitation | Station | Type of trap | Number of traps | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Misc. | |
|-----------------------------|---------|--------------|------------------------------------|----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|-------|--|
| Temp | Precip | Type | Station | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Misc. | |
| | | | CALIFORNIA Davis 11/16-22 | 3 | | | | | | | | | | | | | | | | | | | | | |
| | | | FLORIDA Gainesville 11/19 | BL 3 | | | | | | | | | | | | | | | | | | | | | |
| | | | GEORGIA Tifton 11/7-13 | BL | | | | | | | | | | | | | | | | | | | | | |
| | | | Tifton 11/14-20 | BL | | | | | | | | | | | | | | | | | | | | | |
| | | | MISSISSIPPI Stoneville 11/15-21 | MV 64 | | | | | | | | | | | | | | | | | | | | | |
| | | | Stoneville 11/15-21 | BL 141 | | | | | | | | | | | | | | | | | | | | | |
| | | | TEXAS Waco 11/16-22 | BL 15 | | | | | | | | | | | | | | | | | | | | | |
| | | | Brownsville 11/13-20 | 6 BL 286 | | | | | | | | | | | | | | | | | | | | | |
| | | | WISCONSIN Middleton 11/13-21 | BL 5 | | | | | | | | | | | | | | | | | | | | | |
| | | | Madison 11/14-21 | EL 24 | | | | | | | | | | | | | | | | | | | | | |

* BL = blacklight; I = incandescent; MV = mercury vapor; O = other

** Alf. = alfalfa; beet = garden beet and/or sugarbeet; cole = cole crops (unspecified); celt. = celtis; FC = field corn; EC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Apparent buildup of GREENBUG noted in barley fields in areas of Eddy County, New Mexico. (p. 1373). WINTER GRAIN MITE active in Oklahoma. (p. 1374).

HICKORY SHUCKWORM light to heavy on pecan nuts in Arkansas. Gravid MEXICAN FRUIT FLY trapped November 12 near Roma in Starr County, Texas; first specimen of season in lower Rio Grande Valley. (p. 1374).

TOMATO FRUITWORM, FALL ARMYWORM and CABBAGE LOOPER continue to damage lettuce in Arizona; controls necessary. (p. 1375).

DETECTION

A SCARAB (Onthophagus sagittarius (F.)) recorded for first time in Hawaii. (p. 1381). New county records reported were a BROWN SPIDER (Loxosceles reculsa) in Monroe County, Illinois (p. 1377), and OLD-HOUSE BORER (Hylotrupes bajulus) in Mobile County, Alabama (p. 1378).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1379).

Hawaiian Insect Notes. (p. 1381).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Corn for Grain, Wheat, Oats, Soybeans for Beans, Hay (All), Sugar Beets and Tobacco in Ohio During 1962. (pp. 1382-1388).

Insects Not Known to Occur in the United States (safflower fruit fly, Acanthiophilus eluta (Meigen)). (p. 1389).

Reports in this issue are for week ending November 29, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

DECEMBER 1963

The Weather Bureau's 30-day outlook for December calls for temperatures to average below seasonal normals in the southeast quadrant of the Nation. Above normal temperatures are predicted for New England, the West Coast, and a large area extending from the Western Lakes to the Northern Rockies. In regions not mentioned near normal averages are in prospect. Precipitation is expected to be greater than normal in Atlantic and Gulf Coastal States. Near normal amounts are anticipated in a zone extending from the Eastern Lakes through the Ohio and Tennessee Valleys into the Southern Plains. In unspecified areas near normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING DECEMBER 6

High pressure and fair weather prevailed over most of the Nation at the beginning of the week. There were a few exceptions. A storm approached the north Pacific coast producing several inches of rain at Tatoosh Island, Washington, during the first few days. Scattered snow flurries fell over the southern Rocky Mountains and parts of the upper Mississippi River Valley. A cold front lay across southern Florida. By about midweek, a wave had developed over the Gulf of Mexico and was bringing generous rains to south Texas and the upper coast. This storm intensified, moved northeastward, and by midweek was bringing heavy downpours over much of southeastern United States. Jackson, Mississippi, and Montgomery, Alabama, were among the locations that received more than 2 inches of rain on Thanksgiving day. Another storm, which developed north of Montana, moved quickly to near Winnipeg, Canada, on Wednesday and continued eastward to Sault Ste. Marie, Michigan, on Thursday. This storm produced considerable cloudiness, a few snow flurries, and strong gusty winds. By Friday morning, high pressure and fair weather prevailed over the western two-thirds of the country and a deepening storm centered over West Virginia brought heavy rains to the Atlantic Coastal States. Cold air, on the back side of the storm, produced snow in the southern Appalachians as far south as Knoxville, Tennessee. Most of the eastern third of the Nation received generous rains as the storm intensified and moved northeastward and another storm moved eastward across northern Lake Superior. Most of the northeastern quarter of the Nation received rain or snow over the weekend. Snow accumulated to 9 inches in northern Pennsylvania.

At the end of the week, a high pressure area was centered over the northern Rocky Mountains and temperatures dropped to 7° below zero at International Falls, Minnesota. Subzero temperatures were also registered in Wyoming and South Dakota. Temperatures dropped to freezing or lower in the Southeast in connection with a high pressure area centered near Jacksonville, Florida. Tallahassee, Florida, registered 28° Sunday morning and again on Monday.

Temperatures during the week averaged slightly below normal over parts of Washington, Oregon, and California, over the southern Appalachians, and from southeastern New Mexico eastward to Mississippi. Elsewhere, temperatures averaged above normal. Temperature departures ranged from -6° at Brownsville and Laredo, Texas, to +13° at Glasgow, Montana. Some generous rains fell in northwestern Washington. Tatoosh Island, Washington, received 3.38 inches during the week. Several stations in southern Texas received more than 1 inch of rain. No rain of importance fell from California to Wisconsin and Illinois. A few eastern areas received more than 2 inches. One of these stretched from eastern Alabama to southwestern West Virginia. Rainfall also exceeded 2 inches over eastern New England. There was considerable fog in the valleys in the northern Rocky Mountains. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

PEA APHID (Acyrtosiphon pisum) - NEW MEXICO - Light in most alfalfa fields of southern counties; moderate to heavy in alfalfa at Belen, Valencia County, and Artesia, Eddy County. (N. M. Coop. Rpt.). OKLAHOMA - Light numbers becoming active in alfalfa fields checked in Payne, Noble and Kay Counties. Reported active in Pawnee and Muskogee Counties. (Okla. Coop. Sur.). OHIO - Ranged 5-10 per 50 sweeps in field of red clover near Bucyrus, Crawford County; none found in adjacent alfalfafield. (Lyon). WISCONSIN - Decreased noticeably; highest population observed averaged 1 per sweep. Few alate viviparae containing embryos noted, although most were apterous oviparae. (Wis. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light on alfalfa fields at Los Lunas and Belen, Valencia County. (N. M. Coop. Rpt.). OKLAHOMA - Almost nonexistent in alfalfa in Payne, Noble and Kay Counties compared with counts before general rains in area past week. Light in Lincoln, Cleveland, Greer, Kingfisher and Garvin Counties. (Okla. Coop. Sur.). NEBRASKA - Sexual forms found for the first time in Brown, Chase, Cherry, Cuming, Dakota, Dawson, Dixon, Frontier, Hayes, Hitchcock, Keya Paha, Keith, Lincoln, Rock, Thurston and Wayne Counties. Sexual forms first detected in Greeley and Howard Counties in 1960. (Calkins). WISCONSIN - Decrease continues; in field where weekly observations made, averages were 2 per sweep November 26, 19 per sweep November 19 and 30 per sweep November 12. Populations still 6, 43 and 75 per sweep in adjacent field on respective dates. No alatae observed; apterous oviparae still developing and laying eggs. Few nymphs present. Egg numbers decreased in one field, probably due to breakage of apical foliage and stems. Number of eggs in different stand showed very slight increase; numbers on new seedling alfalfa increased from average of 5.7 to 7.5 per stem. (Wis. Ins. Sur.).

SWEETCLOVER APHID (Therioaphis riehmi) - WISCONSIN - Numbers decreased noticeably; present as apterous oviparae. Alates not observed. (Wis. Ins. Sur.).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Apparent buildup in barley fields in Artesia and Cottonwood Creek areas, Eddy County; ranged 10-20 per linear foot. (N. M. Coop. Rpt.). OKLAHOMA - Light, scattered infestations noted in Payne, Kay and Noble Counties; counts fewer than 5 per linear foot. Activity reported in Pawnee, Muskogee, Kingfisher and Grady Counties. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Heavy in barley fields in Artesia area, Eddy County. (N. M. Coop. Rpt.). VIRGINIA - Possibly this species, severe on barley throughout Middlesex County. (Tarpley, Edwards; Nov. 21). MARYLAND - Moderate on barley at Faulkner, Charles County. (U. Md., Ent. Dept.; Nov. 19).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light in scattered areas of Kay and Noble Counties; ranged from 15 per linear foot to 50-75 per linear foot in one field in Kay County. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Generally common but light numbers noted in fields checked in Payne, Noble and Kay Counties. Reproduction noted in some fields. Light also in Kingfisher County. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OHIO - Populations dropped considerably over past few weeks; 2 adults per 50 sweeps noted in field of red clover near Bucyrus, Crawford County. (Lyon).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Populations collapsed; occasional adult observed. (Wis. Ins. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Adults extremely abundant in alfalfa fields near Tome, Valencia County. (N. M. Coop. Rpt.).

BEET ARMYWORM (*Spodoptera exigua*) - CALIFORNIA - Medium in field peas in Guadalupe, Santa Barbara County. (Cal. Coop. Rpt.).

ALFALFA WEEVIL (*Hypera postica*) - VIRGINIA - Larvae caused light damage to field of alfalfa in Marion, Smyth County. (Eller, Nov. 19).

A SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata tenella*) - NEW MEXICO - Adults ranged 20-80 per 100 sweeps in alfalfa fields at Belen, Valencia County. (N. M. Coop. Rpt.).

GRASSHOPPERS - MONTANA - Egg-pod survey in areas of previously heavy adult populations show very few egg pods in Glacier, Prairie, Cascade, Carter, Richland and Dawson Counties. (PPC, West. Reg., Oct. Rpt.). NEW MEXICO - *Melanoplus* sp. ranged 6-20 per sweep in alfalfa fields in Los Lunas and Belen areas, Valencia County, and Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Light in scattered areas of Noble and Kay Counties. First reported activity of season. (Okla. Coop. Sur.).

FRUIT INSECTS

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - OHIO - Light on untreated apple orchard near Marion, Marion County; believed moderate to heavy earlier in season. (Lyon).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - ALABAMA - High infestation on peach trees in Dog River area, Mobile County. (Hagler, Buttram et al.).

POWDER-POST BEETLES - ALABAMA - Appearing in large numbers on dead and dying plum trees in Jefferson, Morgan, Lee and other counties in State. (Hagler, Buttram et al.).

SAP BEETLES (*Carpophilus* spp.) - CALIFORNIA - *C. humeralis* and *C. hemipterus* medium in persimmon fruit in El Cajon, San Diego County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (*Rhagoletis completa*) - UTAH - Damage conspicuous at Tooele, Tooele County, to English walnuts in particular. (Knowlton).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ARKANSAS - Light on pecans in Sevier and Crawford Counties. Moderate on nuts in Hempstead County and very heavy on nuts in Miller County. (Ark. Ins. Sur.).

PECAN WEEVIL (*Curculio caryae*) - ARKANSAS - Inspections of 2 lots of pecans from Sevier County showed no infestation in one, and 5 percent in other. Two lots from Crawford County showed 13.8 and 24.1 percent infestations. (Ark. Ins. Sur.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - First specimen of this season, a gravid female, trapped November 12 in 67-acre grove of grapefruit and orange near Roma, Starr County. This is approximately 3 weeks earlier than first specimen taken last season on December 6, 1962. Grove has good fruit crop, none of which has been harvested. (PPC).

TRUCK CROP INSECTS

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Larvae damaged 5-acre field of sweetpotatoes during growing season; crop unfit for sale and destroyed. (Oates, Fairley).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Infestations still occurring in lettuce fields of Yuma, Maricopa and Pinal Counties; damage light to moderate in most areas. Controls continue. (Ariz. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - ARIZONA - Damage light to moderate in many lettuce fields in Maricopa and Pinal Counties; controls continue necessary. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Causing considerable damage to lettuce in Maricopa and Pinal Counties; controls continue necessary. (Ariz. Coop. Sur.).

ALABAMA - Medium, locally in Baldwin County on cabbage. (Fairley).

A STINK BUG (Microporus obliquus) - CALIFORNIA - Heavy in volunteer sweetpotatoes; nymphs and adults infesting soil in Stanton, Orange County. (Cal. Coop. Rpt.).

TURNIP APHID (Hyadaphis pseudobrassicae) - ALABAMA - Heavy on turnips in isolated truck crop farm in Baldwin County. (Fairley).

AN APHID (Pentatrichopus thomasi) - MARYLAND - Common on new growth of young strawberry planting at Glendale, Prince Georges County. (U. Md., Ent. Dept., Nov. 19).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Lint-cleaner inspections negative in Harmon and Roger Mills Counties; positive collections made in Beckham, Custer, Dewey, Grady, Jackson, Muskogee and Washita Counties. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp.) - ARKANSAS - Larval collections made in July in Chicot County determined 30 H. zea and one H. virescens. (Ark. Ins. Sur.).

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Two-bushel sample of gin trash from Macon County revealed 23 adults; 1-bushel sample from Clay County, where local farmers insisted no weevils appeared last season, revealed 205 live specimens. Trash from other nearby counties shows about same number of weevils in hibernation in piles of gin trash at cotton gins. (Barwood).

THURBERIA WEEVIL (Anthonomus grandis thurberiae) - ARIZONA - Infestation of what is probably this species found south of Stanfield, Pinal County; light numbers also found in areas of Pima County. Infestations found in area on southeastern edge of Yuma County. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - ARIZONA - Building up on green cotton plants and other hosts in Yuma area. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES (Dendroctonus spp.) - CALIFORNIA - D. brevicomis and D. valens damaging ponderosa pine in 600-acre stand in Cobb Valley and small acreage in summer home area in Whispering Pines, Lake County. (D. Shaw, D. Woods, CDF). Heavy adult flights of D. brevicomis observed in Oakhurst area, Madera County, on Sierra National Forest. Adult D. brevicomis coming from ponderosa pine in area. Quite severe in Tehipiti Valley, Fresno County, a highly scenic area under consideration for National Park status. Callow adults of D. monticolae well advanced in sugar pine and some full adult stage ready to fly in Bass Lake area, Sierra National Forest; broods late this year. (W. Herbolsheimer, USFS).

ALABAMA - Numerous reports of D. terebrans noted in Mobile where pest killed pine trees. Considerable damage to small groups of pines in forests and numerous ornamental specimens killed this season in State. (Seibels et al.).

AN ENGRAVER BEETLE (*Ips* sp.) - CALIFORNIA - Heavy buildup in logging slash of ponderosa pine in Cecil Creek area, Klamath National Forest. (L. H. Thornton, USFS).

A JUNIPER TWIG MOTH (*Periploca nigra*) - CALIFORNIA - Larvae heavy in juniper in Mill Valley, Marin County. (Cal. Coop. Rpt.).

A PINE RESIN MIDGE (*Retinodiplosis inopis*) - CALIFORNIA - Infestations extensive in ponderosa pine at Sawyers Bar in Klamath National Forest. (N. E. Dirksen, USFS).

A CONIFER SAWFLY (*Neodiprion* sp.) - CALIFORNIA - Larval specimens collected in Fenner Saddle area, Angeles National Forest; caused severe defoliation of 2 pinyon pines in October. Area to be under surveillance in 1964 for adult specimens for positive determination. (J. Pierce, D. Albrecht, USFS).

GYPSY MOTH (*Porthetria dispar*) - Adults captured in traps outside of regulated area in VERMONT, one each in Hyde Park and Morristown, Lamoille County. One egg cluster removed from shipment of logs at Castleton consigned for Canada. In MASSACHUSETTS, 1-20 egg clusters found in peripheral areas of 6 nurseries. A few egg clusters found and treated in 5 evergreen bough lots and at 3 lumberyards 260 egg clusters found and treated. Four egg clusters removed from shipment of collected stock for movement out of State. in CONNECTICUT, 75 growing areas involving 1,194 acres of nursery stock and 889 acres of periphery scouted. Total of 175 egg clusters found and treated in peripheral areas; 1,479 collected plants inspected with 8 plants found infested with 264 egg clusters. Scouting of regulated areas on Long Island, NEW YORK, continued; 2 egg clusters found to date in peripheral area outside of nursery in Nassau County and 1-5 egg masses found in peripheral area outside of 4 establishments in Suffolk County. Regulatory surveillance continued in northern NEW JERSEY regarding intrastate movement of materials in vicinity of positive trapsites. (PPC. East. Reg., Oct. Rpt.).

WOOLLY ALDER APHID (*Prociphilus tessellatus*) - ALABAMA - Extremely large masses present an almost artificial sight; covering 50-90 percent of limb surface of alders along banks of 75-acre lake in Macon County. Present all season but now more noticeable with fewer leaves. (McQueen).

WILLOW BEAKED-GALL MIDGE (*Phytophaga rigidae*) - MARYLAND - Galls with larvae found on pussy willow at Pasadena, Anne Arundel County. (U. MD., Ent. Dept. Nov. 18).

A GEOMETRID MOTH (*Coryphista meadii*) - CALIFORNIA - Medium on mahonia nursery stock in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

AN OLETHREUTID MOTH (*Crocidosema plebeiana*) - CALIFORNIA - Medium on hibiscus flowers in Lemon Grove, San Diego County. (Cal. Coop. Rpt.).

A SKIPPER (*Erynis tristis*) - CALIFORNIA - Medium and tying leaves of holly oak in Modesto, Stanislaus County; det. by C. D. MacNeil. (Cal. Coop. Rpt.).

APHIDS - DELAWARE - *Macrosiphum euphorbiae* adults common on roses locally in New Castle County. (Burbutis). OHIO - *Myzus persicae* heavy on snapdragons in greenhouse at Bucyrus, Crawford County. (Lyon). OKLAHOMA - Several species heavy on ornamental shrubs in Greer County; activity noted in other areas. (Okla. Coop. Sur.). CALIFORNIA - *Micromyzus formosanus* heavy on chives in San Francisco County. *Neothomasia populicola* heavy on poplar trees in West Sacramento, Yolo County. *Toxoptera aurantii* medium on pittosporum nursery stock in Visalia, Tulare County. (Cal. Coop. Rpt.).

COCCIDS - NEW MEXICO - *Unaspis euonymi* moderately heavy and damaging euonymus at Hobbs, Lea County. (N. M. Coop. Rpt.). ALABAMA - *Eriococcus azaleae* quite prevalent in Mobile County area; observed at several locations. (Seibels). VIRGINIA - *U. euonymi* infesting euonymus at a location in Richmond. (Rowell).

MARYLAND - Aspidiotus perniciosus moderate on ornamental cherries at University Park, Prince Georges County. (U. Md., Ent. Dept.).

CRICKETS (Orocharis spp.) - ALABAMA - Continue to feed on and destroy beauty and value of camellias in Dog River area, Mobile County. (Seibels).

SPIDER MITES - OHIO - Tetranychus telarius caused moderate to heavy damage to chrysanthemums in Bucyrus greenhouse, Crawford County; controls underway. (Lyon). CALIFORNIA - Oligonychus subnudus medium on Italian cypress nursery stock in El Cajon, San Diego County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (Trisetacus quadrisetus) - CALIFORNIA - Heavy on foliage at base of scales on juniper in nursery stock in San Diego, San Diego County. (Cal. Coop. Rpt.).

CYCLAMEN MITE (Steneotarsonemus pallidus) - CALIFORNIA - Medium on Aralia seiboldi nursery stock in San Mateo County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - OKLAHOMA - Unidentified species heavy and annoying humans in Greer County area. (Okla. Coop. Sur.).

AN ASSASSIN BUG (Rasahus thoracicus) - CALIFORNIA - Populations light in Oroville, Butte County, and West Sacramento, Yolo County; reported biting people. Occurrence later than in previous years. (Cal. Coop. Rpt.).

FLEAS - MINNESOTA - Problem in Minneapolis-St. Paul area; biting for number of weeks. (Minn. Ins. Rpt.).

CATTLE LICE - OKLAHOMA - First activity of season reported from Choctaw County on livestock. (Okla. Coop. Sur.). UTAH - Additional beef cattle treated in Tooele, Garfield and Millard Counties; 3,500 being dipped in Emery County and 2,000 treated in Juab County. (Knowlton).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Moderate to heavy on hogs in Bryan County. (Okla. Coop. Sur.).

EAR TICK (Otobius megnini) - OKLAHOMA - Infestations of 3 per animal noted on livestock in Washita County. (Okla. Coop. Sur.).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - OHIO - Heavy on 2 Leghorn hens at poultry house in Morrow County; examination of other hens revealed noneconomic infestations. (Lyon).

A BROWN SPIDER (Loxosceles reculsa) - ILLINOIS - Collected about one month ago in kitchen cabinets in home at Valmeyer, Monroe County; this is a new county record. (Ill. Ins. Rpt.).

HOUSEHOLD AND STRUCTURAL INSECTS

FACE FLY (Musca autumnalis) - MARYLAND - Numerous in attic of building in southern Montgomery County. (U. Md., Ent. Dept., Nov. 19).

CLUSTER FLY (Pollenia rudis) - MICHIGAN - Reports of adults causing annoyance in homes unseasonably low recently; individual problem reported from northern area. (Janes). UTAH - This species and some blow flies noted in schoolroom in Logan, Cache County. (Knowlton).

OLD-HOUSE BORER (Hylotrupes bajulus) - ALABAMA - Infested residence in Mobile area. (Seibels). This is first ARS record for Mobile County.

FURNITURE CARPET BEETLE (Anthrenus flavipes) - MARYLAND - Larvae found in home at University Park, Prince Georges County. (U. Md., Ent. Dept.).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Infestations continue active and reports from Placerville area, El Dorado County, indicate heavy infestation in residence. (Cal. Coop. Rpt.).

BLACK CARPENTER ANT (Camponotus pennsylvanicus) - MARYLAND - Specimens noted around wooden porch of home in Takoma Park, Montgomery County. (U. Md., Ent. Dept., Nov. 18).

MILLIPEDS - DELAWARE - Several nuisance infestations noted in homes in areas of New Castle County. (MacCreary).

STORED-PRODUCT INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Adults collected in potato storeroom in Monroe County at rate of 41 per night for 5 nights with single blacklight trap. Potatoes held at 60° F. to be used for potato chips. (Wells, Laser).

BENEFICIAL INSECTS

FLOWER FLIES - ALABAMA - Prodigious numbers of adults in all areas of Mobile County; at least 20 kinds swarmed about chrysanthemums in full bloom at Bellingrath Gardens. (Seibels). Several species quite plentiful in central part of State; larvae feeding on aphids on flowers, pines, collards, turnips and other plants. (Seibels et al.).

A DAMSEL BUG (Nabis ferus) - OHIO - Most abundant beneficial insect collected in sweeping throughout central area in red clover fields. (Lyon).

Parasites of European Corn Borer in South Dakota - Examination of 214 larvae of Ostrinia nubilalis from 2 farms in Brookings County showed 6 larvae (2.8 percent) parasitized by a eulophid (Sympiesis viridula) released in summer of 1962. An ichneumon (Horogenes punctorius) parasitized 37 larvae (17.3 percent) and a braconid (Macrocentrus gifuensis) parasitized 45 larvae (21 percent). (Hintz).

MISCELLANEOUS INSECTS

WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - Total of 44 specimens collected from 11 locations in Norfolk and 19 specimens from 8 locations in Virginia Beach. (PPC, East. Reg., Oct. Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - Controls continued in Hudson County, NEW JERSEY; all work on Union City and Jersey City completed except the Palisades and small section of railroad in Jersey City. Controls started in Erie, PENNSYLVANIA, September 30. (PPC, East. Reg., Oct. Rpt.).

A DERMESTID BEETLE - ARKANSAS - Larval forms taken from cricket feed in October in Crittenden County. (Ark. Ins. Sur.).

A POWDER-POST BEETLE (Trogoxylon prostomoides) - CALIFORNIA - Larvae heavy and adults noted infesting bamboo basket in Oroville, Butte County. (Cal. Coop. Rpt.).

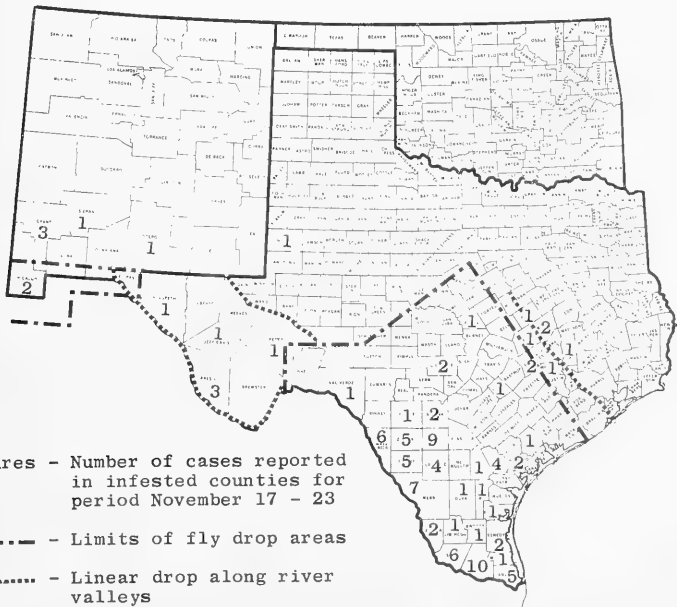
LESSER MEALWORM (Alphitobius diaperinus) - ARKANSAS - Adults collected from cricket feed in Crittenden County. (Ark. Ins. Sur.).

BLACK CARPENTER ANT (Camponotus pennsylvanicus) - OHIO - Many saw logs observed full of galleries at sawmill near Upper Sandusky, Wyandot County; heavy populations of sexual and worker casts observed in galleries. Unusually serious economic damage occurred to many saw logs this past season. (Lyon).

A SNAIL (Vallonia pulchella) - CALIFORNIA - Medium locally in soil in Sacramento, Sacramento County; infestations occurring in greater numbers this year. Rain caused snails to mass on sidewalks and driveways. (Cal. Coop. Rpt.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period November 17 - 23, a total of 101 confirmed cases, including 2 of unknown origin, were found in 39 counties in TEXAS; this is a decrease of 99 cases over previous period. There were 7 confirmed screw-worm cases reported from 4 counties in NEW MEXICO. Colder weather is being reported in New Mexico with a corresponding decrease in screw-worm populations. Snow and freezes are occurring in higher elevations. A total of 137,510,650 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 695th meeting of the Hawaiian Entomological Society held November 4, 1963.

A SCARAB (Onthophagus sagittarius (F.)) - Approximately 10 specimens collected from cow dung in Manoa Valley, Oahu, July 24, 1963. This insect has not previously been reported from Hawaii, but was probably released with O. catta. (See CEIR 10(23):477). This constitutes a new record for the State. Det. by O. L. Cartwright. (D. M. Tsuda).

A PHYCITID MOTH (Ectomyelois ceratoniae (Zeller)) - Two larvae found infesting seeds of Barringtonia sp. from Oahu on March 10, 1963, by J. Toba. Determination confirmed by D. M. Weisman. This constitutes a new host record for this insect. (E. H. Davidson, E. S. Shiroma).

A PHYCITID MOTH (Ephesiodes gilvescentella Ragonot) - An adult was taken in a blacklight trap at Olinda, Maui, by E. Bonsey. Det. by W. D. Duckworth. Zimmerman (1958: Insects of Hawaii 8:377) records this species as occurring on the islands of Oahu and Molokai. This constitutes a new record for the island of Maui. (E. H. Davidson, E. S. Shiroma).

A LYGAEID BUG (Graptostethus manillensis (Stål)) - On August 31, 1963, a specimen was intercepted from box of assorted cut flowers from Hilo, Hawaii, enroute to the mainland by R. Nave. Although previously reported from the islands of Kauai, Oahu, Maui and Niihau, this interception constitutes a new record for the island of Hawaii. (E. H. Davidson, E. S. Shiroma).

A REDUVIID BUG (Polididus armatissimus Stål) - A specimen was taken August 29, 1963, at a light in Foster Village, Oahu, by J. Gayden. This is third locality record of this species on Oahu. It was first reported by Dr. C. R. Joyce in October 1961 as being taken at Aina Haina and at Kailua. This species was first reported from the State on the island of Hawaii by LeMar Chilson in 1953. (E. H. Davidson, E. S. Shiroma).

A PUNCTURE-VINE WEEVIL (Microlarinus lypriformis (Wollaston)) - The work of this stem-infesting species was exhibited. This weevil, the second species introduced for the biological control of puncture-vine (Tribulus terrestris and T. cistoides), was sent from California by Noel Krauss and released at Kekeha, Kauai, on July 8, 1963. Much damage to the native puncture-vine (T. cistoides) has occurred since release of the weevil. (S. Au, C. J. Davis).

A PARASITIC ENCARTID (Exoristobia philippinensis Ashmead) - Reared from puparia of Trichopoda pennipes F. (a parasitic tachina fly) at the Honaunau Insectary, Kona, recently. This is first record of this hyper-parasite from island of Hawaii. The species was previously reported from Oahu by J. W. Beardsley and C. J. Davis. (C. J. Davis, E. Yoshioka).

A HELIODINID MOTH (Schreckensteinia festaliella Hubner) - This leaf-skeletonizing species, introduced from Oregon for control of blackberry, was approved for release by the Board of Agriculture and Forestry at its meeting on October 25, 1963, after extensive host range tests indicated the species was most specific. First releases made the following week in Olinda, Maui. S. festaliella is of European origin. (C. J. Davis).

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|-----------|--|--------|-------------------------------------|--------|-----------------------|
| ATTACKING | <u>Corn for Grain</u> (Commodity) | IN | <u>Ohio</u> (State or District) | DURING | <u>1962</u> (Year) |
| A. | Pest or pest complex <u>Corn rootworms, cutworms - wireworms, corn leaf aphid, chinch bug, armyworm, European corn borer, thrips, flea beetles, billbugs</u> | | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>2,663,000</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>76 bu.</u> | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>1.04</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>266,300 (10%)</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>399,450 (15% over treatment)</u> | | |
| G. | Reduction due to not treating where needed: | | | | |
| H. | Loss in yield, percent | % | <u>6</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>4.56 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I. | \$/ | <u>4.74</u> | | |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>--</u> | | |
| L. | Yield loss for all <u>--</u> ^a , (E-F) x I | Units | <u>--</u> | | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>3.00</u> | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>1,198,350</u> | | |
| O. | Yield loss for all <u>--</u> ^a , (E-F) x J | \$ | <u>--</u> | | |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>--</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>1,198,350</u> | | |

Comment: Corn yields in 1962 reached a record high of 76 bushels per acre due in part to adequate rains at critical times, increased use of fertilizer, heavier plant population and a favorable planting season.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| | | | | | |
|-----------|---|---|---------------------|--------|--------|
| ATTACKING | Wheat | IN | Ohio | DURING | 1962 |
| | (Commodity) | | (State or District) | | (Year) |
| | | | | | |
| A. | Pest or pest complex | <u>Hessian fly, sawflies, wheat jointworm, chinch bug, armyworm</u> | | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>1,209,000</u> | | |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>32 bu.</u> | | |
| D. | Price ^b per unit (bu.) ^c (From CRS) | \$/ | <u>1.97</u> | | |
| E. | <u>Acres</u> ^a needing control | No. | <u>24,180 (2%)</u> | | |
| F. | <u>Acres</u> ^a treated | No. | <u>1,209 (0.1%)</u> | | |
| G. | Reduction due to not treating where needed: | | <u>22,971</u> | | |
| H. | Loss in yield, percent | % | <u>8</u> | | |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>2.56 bu.</u> | | |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>5.04</u> | | |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>--</u> | | |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>58,806 bu.</u> | | |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>2.00</u> | | |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>2,418</u> | | |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>115,774</u> | | |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>--</u> | | |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>118,192</u> | | |

Comment: Adequate rainfall came in October of 1961 for the fall sown grains, but heavy rains in January with subsequent freezing temperature resulted in the smothering of part of the crop, which gave higher losses of acreage than usual. Timely rainfall in late May resulted in excellent development of the heads. The yield of 32 bushels per acre was the second highest on record.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING _____ Oats _____ IN _____ Ohio _____ DURING _____ 1962 _____ (Commodity) (State or District) (Year) | | |
|--|--------|-----------------------|
| A. Pest or pest complex <u>Aphids, stalk borers, grasshoppers</u> | | |
| B. Number of <u>acres</u> ^a produced (From CRS) | No. | 833,000 |
| C. Average yield per <u>acre</u> ^a (From CRS) | Units/ | 58 bu. |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | .64 |
| E. <u>Acres</u> ^a needing control | No. | 8,330 (1%) |
| F. <u>Acres</u> ^a treated | No. | no treatment 8,330 |
| G. Reduction due to not treating where needed: | | |
| H. Loss in yield, percent | % | 6 |
| I. Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | 3.48 bu. |
| J. Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | 2.23 |
| K. Loss in quality, \$ per <u>--</u> ^a | \$/ | -- |
| L. Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | 28,988 bu. |
| M. Control cost, \$ per <u>acre</u> ^a | \$/ | 2.00 |
| N. Control cost for all <u>--</u> ^a , F x M | \$ | -- |
| O. Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | 18,576 |
| P. Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | -- |
| Q. Combined control cost and losses, N + O + P | \$ | 18,576 |

Comment: Extremely favorable weather and field conditions allowed oat planting to be virtually completed by the end of April. The yield per acre averaged 58 bushels, second only to the record 1960 yield of 63 bushels per acre.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING _____ Soybeans for Beans _____ IN _____ Ohio _____ DURING _____ 1962 _____ (Commodity) (State or District) (Year) | | |
|--|--------|---------------|
| A. Pest or pest complex _____ Grasshoppers, locust leaf miner, blister beetles, seed-corn maggot, Mexican bean beetle | | |
| B. Number of _____ acres ^a produced (From CRS) | No. | 1,808,000 |
| C. Average yield per _____ acre ^a (From CRS) | Units/ | 25.5 bu. |
| D. Price ^b per unit (bu.) ^c (From CRS) | \$/ | 2.35 |
| E. _____ Acres ^a needing control | No. | 27,120 (1.5%) |
| F. _____ Acres ^a treated | No. | 1,808 (0.1%) |
| G. Reduction due to not treating where needed: | | 25,312 |
| H. Loss in yield, percent | % | 15 |
| I. Loss in yield, units per _____ acre ^a , C x H | Units/ | 3.83 bu. |
| J. Loss in yield, \$ per _____ acre ^a , D x I | \$/ | 9.00 |
| K. Loss in quality, \$ per _____ -- ^a | \$/ | -- |
| L. Yield loss for all _____ acres ^a , (E-F) x I | Units | 96,945 bu. |
| M. Control cost, \$ per _____ acre ^a | \$/ | 2.50 |
| N. Control cost for all _____ acres ^a , F x M | \$ | 4,520 |
| O. Yield loss for all _____ acres ^a , (E-F) x J | \$ | 227,808 |
| P. Quality loss for all _____ -- ^a , (E-F) x K | \$ | -- |
| Q. Combined control cost and losses, N + O + P | \$ | 232,328 |

Comment: Below normal soil moisture throughout the growing season resulted in a lower soybean yield for Ohio in 1962.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

| ATTACKING _____ Hay (All) _____ IN _____ Ohio _____ DURING _____ 1962 _____ (Commodity) (State or District) (Year) | | |
|---|---|---------------|
| | Potato leafhopper, meadow spittlebug, clover root borer, lesser clover leaf weevil, pea aphid, plant bugs, sweetclover weevil, clover leaf weevil, grasshoppers, alfalfa weevil | |
| A. Pest or pest complex _____ | | |
| B. Number of _____ acres ^a produced (From CRS) | No. | 1,897,000 |
| C. Average yield per _____ acre ^a (From CRS) | Units/ | 1.66 tons |
| D. Price ^b per unit (ton) ^c (From CRS) | \$/ | 26.00 |
| E. _____ Acres ^a needing control | No. | 853,650 (45%) |
| F. _____ Acres ^a treated | No. | 284,550 (15%) |
| G. Reduction due to not treating where needed: | | 569,100 |
| H. Loss in yield, percent | % | 20 |
| I. Loss in yield, units per _____ acre ^a , C x H | Units/ | 0.33 ton |
| J. Loss in yield, \$ per _____ acre ^a , D x I | \$/ | 8.58 |
| K. Loss in quality, \$ per _____ -- ^a | \$/ | -- |
| L. Yield loss for all _____ acres ^a , (E-F) x I | Units | 187,803 tons |
| M. Control cost, \$ per _____ acre ^a | \$/ | 2.80 |
| N. Control cost for all _____ acres ^a , F x M | \$ | 796,740 |
| O. Yield loss for all _____ acres ^a , (E-F) x J | \$ | 4,882,878 |
| P. Quality loss for all _____ -- ^a , (E-F) x K | \$ | -- |
| Q. Combined control cost and losses, N + O + P | \$ | 5,679,618 |

Comment: An unusually dry summer resulted in a yield of 1.66 tons of hay per acre in 1962.

The low yield combined with the smallest acreage harvested since 1875 resulted in the lowest production of hay on record since 1936.

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Sugar Beets IN Ohio DURING 1962
 (Commodity) (State or District) (Year)

| | | | |
|----|--|---|-------------|
| | | Wireworms - cutworms, flea beetles, leaf miners, aphids, blister beetles, grasshoppers | |
| A. | Pest or pest complex | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | 25,000 |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | 16.6 tons |
| D. | Price ^b per unit (<u>ton</u>) ^c (From CRS) | \$/ | 11.50 |
| E. | <u>Acres</u> ^a needing control | No. | 2,500 (10%) |
| F. | <u>Acres</u> ^a treated | No. | 250 (1%) |
| G. | Reduction due to not treating where needed: | | 2,250 |
| H. | Loss in yield, percent | % | 5 |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | 0.83 ton |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | 9.54 |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | -- |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | 1,867 tons |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | 2.50 |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | 625 |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | 21,465 |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | -- |
| Q. | Combined control cost and losses, N + O + P | \$ | 22,090 |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Tobacco IN Ohio DURING 1962
(Commodity) (State or District) (Year)

| | | | |
|----|---|--|--------------------|
| | | Hornworms, flea beetles, cutworms - slugs - scarab larvae, grasshoppers, corn earworm, aphids | |
| A. | Pest or pest complex | | |
| B. | Number of <u>acres</u> ^a produced (From CRS) | No. | <u>10,600</u> |
| C. | Average yield per <u>acre</u> ^a (From CRS) | Units/ | <u>1,700 lbs.</u> |
| D. | Price ^b per unit (lb.) ^c (From CRS) | \$/ | <u>0.577</u> |
| E. | <u>Acres</u> ^a needing control | No. | <u>5,300 (50%)</u> |
| F. | <u>Acres</u> ^a treated | No. | <u>1,272 (12%)</u> |
| G. | Reduction due to not treating where needed: | | <u>4,028</u> |
| H. | Loss in yield, percent | % | <u>18</u> |
| I. | Loss in yield, units per <u>acre</u> ^a , C x H | Units/ | <u>306 lbs.</u> |
| J. | Loss in yield, \$ per <u>acre</u> ^a , D x I | \$/ | <u>176.56</u> |
| K. | Loss in quality, \$ per <u>--</u> ^a | \$/ | <u>--</u> |
| L. | Yield loss for all <u>acres</u> ^a , (E-F) x I | Units | <u>1,232,568</u> |
| M. | Control cost, \$ per <u>acre</u> ^a | \$/ | <u>5.50</u> |
| N. | Control cost for all <u>acres</u> ^a , F x M | \$ | <u>6,996</u> |
| O. | Yield loss for all <u>acres</u> ^a , (E-F) x J | \$ | <u>711,183.68</u> |
| P. | Quality loss for all <u>--</u> ^a , (E-F) x K | \$ | <u>--</u> |
| Q. | Combined control cost and losses, N + O + P | \$ | <u>718,179.68</u> |

Comment: _____

- a. Acres, head of cattle or other producing units used by Crop Reporting Service.
- b. Season average price per unit as given by CRS (describe basis).
- c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William F. Lyon

Date 11-22-63

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

SAFFLOWER FRUIT FLY (Acanthiophilus eluta (Meigen))

Economic Importance: The safflower fruit fly (Acanthiophilus eluta (Meigen) (= A. helianthi (Rossi)) is historically one of the most important pests of safflower in the Old World, and is readily found breeding on native composites over most of its range. It has been reported as the most important pest of safflower in southeastern U.S.S.R., and up to 90 percent of the fruits become infested in Rumania. About the middle of March 1939, larvae of A. eluta were found seriously damaging the flower heads of some varieties of safflower in experimental plots at New Delhi, India. Serious damage was reported to both early and late-sown varieties, the infestation being as high as 90 percent. Safflower was introduced into the south of France as an oilseed crop in 1942, but was so severely attacked by this fruit fly that by 1953 it had almost ceased to be grown. Losses of 40-50 percent were observed at Tarascon in 1958, and 90-95 percent of the flower heads of an experimental crop at Montfavet were attacked in 1959.

The maggots of A. eluta feed upon the essential organs of the florets and even bore into the torus (receptacle) of safflower. The infested bud begins to rot and the fluid thus produced oozes out from its apical portion and gives it a damp appearance. Furthermore, in advanced stage of attack, the florets become black, presenting an emaciated and withered appearance.

In 1961, safflower, as an oil crop, was being grown on about 420,000 acres in the United States, about half of which was in California. By 1962, production was expected to increase to about one-half million acres. Based on the rapidly increasing safflower acreage, A. eluta may be a potential threat if introduced in the United States.

Distribution: Ranges from England and the Canary Islands across southern and central Europe and North Africa (from Morocco to the Sudan, Ethiopia (Eritrea) and Kenya) to Turkey, Israel, Iran, U.S.S.R., India, and the Northwest Himalayas.

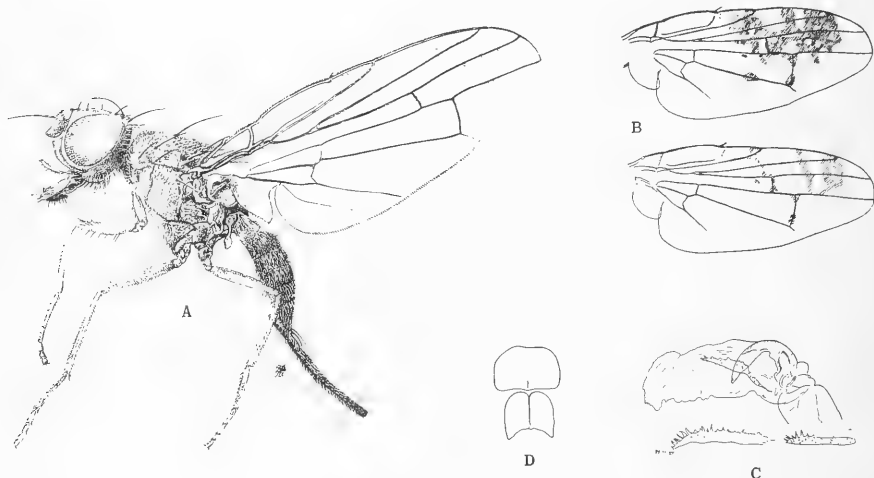
Hosts: Recorded on safflower (Carthamus tinctorius), C. lanatus, centaurea (Centaurea spp.), bristletistle (Carduus spp.), bull thistle (Cirsium lanceolatum), Cnicus lanceolatus, illyrian cottonthistle (Onopordum illyricum), Leuzea conifera, blessed milkthistle (Silybum marianum) and other wild hosts of the tribe Cynareae, Compositae.

Life History and Habits: The biology as studied in France was as follows: Two generations a year are produced. Females appeared in late May and early June and oviposition occurred in June, the eggs being laid in batches of 6-20 in slits cut with the ovipositor in the lower part of the bracts of the young flower heads. Larvae hatched in 1-2 days and fed in heads, completely hollowing them out. Larval development lasted 8-12 days, and pupation took place in the flower head; adults emerged 9-10 days later. As the flower heads developed, eggs were laid in the upper part, and the damage done by the larvae was then less extensive; some florets survived to set seed. The first-generation adults emerged at the end of June, at which time the flowers were opening. Eggs were laid in July and larvae developed, but the damage by the second generation was relatively unimportant.

Earlier studies in India stated that the pest was very active during March, April and May in the field. Laboratory studies to determine the duration of the various stages (average of 5 readings) at maximum and minimum temperatures of 85.2° F. and 78.5° F., respectively, were made. The egg stage lasted 25 hours and larval and pupal stages 7 days each. In the safflower season, the fly completed 3 generations in 6 weeks, from the middle of March to the first week of May. Additional generations occur on wild hosts during the growing season.

Life history studies in U.S.S.R. by Rusanova (6), though incomplete, suggest that A. eluta may overwinter as an adult.

Description: LARVA - Full-grown stage 5 mm. long and 1.5 mm. wide; shape typical of tephritids. Anterior spiracles cup-shaped, margin of each spiracle being fringed with 6 oval lobes. Posterior spiracles almost reniform, each possessing 3 elongated oval slits which are notched at peripheral end. Inner walls of slits chitinized and fimbriated. In each inter-spiracular area, 1 to 4 very minute hyaline lanceolate processes present. Apical tooth of oral hooks curved and pre-apical tooth, which is smaller and less curved, directed downwards and somewhat backwards. PUPARIUM - 4.25 mm. long and 1.75 mm. wide; barrel-shaped and black with a metallic tinge. ADULT - Frons bare with trace of median stripe. Wing pattern reduced and variable, occasionally almost absent. Apical scutellar bristles about 0.3-0.4 times as long as basals. Coloration of body ash, with reddish-brown frons and light brown legs. Male smaller than female, which is about 6.5 mm. in length. Male - Sternite 4 wider than 5, which has a shallow indent and a distinctive, narrow median ridge on inner side, a slight ridge may appear on 4. Aedeagus vesica moderate, a large basal curved spine and a moderate setose rod. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.)



Figures of *Acanthiophilus eluta* (Meigen): A - Adult female. B - Wing, showing variable pattern. C - Aedeagi, showing variation of setulae on rod (small figures - Indian specimen (left) and African specimen (right)). D - Sternites 4 and 5 of male.

Major References: 1. Bytynski-Salz, H. 1952. Internatl. Cong. Ent. Trans. 9:745-750. 2. Feron, M. and Vidaud, J. 1960. Rev. de Path. Vet. et d'Ent. Agr. de France 39(1): 1-12. 3. Manolache, C. 1940. Viata Agr. 31:65. In Rum. 4. Munro, H. K. 1957. Ruwenzori Expedition 1934-35, 2(9):1023-1024. (Brit. Mus. (Nat. Hist.)). 5. Pruthi, H. S. and Bhatia, H. L. 1940. Indian J. Agr. Sci. 10(2):110-118. 6. Rusanova, V. N. 1926. Zhurn. Opuitn. Agron. Yugo-Vostoka 3(1). Reprint, 19 pp. In Rus.

Illustrations: Adult female from Feron and Vidaud; aedeagus, sternites and wing from Munro.

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SURVEY AND DETECTION OPERATIONS

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

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
Federal Center Building
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COOPERATIVE ECONOMIC INSECT REPORT

SEASON'S GREETINGS

HIGHLIGHTS

Heavy populations of SPOTTED ALFALFA APHID depositing honeydew on seedling and established stands of alfalfa in some areas of Choctaw County, Oklahoma, and moderate to heavy activity reported from Grady County in same State. Light to heavy populations of CORN LEAF APHID damaging young barley in northern Eddy County, New Mexico. A BILLBUG (*Sphenophorus venatus vestitus*) caused considerable damage to zoysia grass in nursery in Lee County, Alabama. (p. 1393). FALL ARMYWORM damaging oats and wheat in Guadalupe, Hays and Caldwell Counties, Texas, and heavy, local infestations of WINTER GRAIN MITE reported from oat fields in Falls and Bastrop Counties in same State. (p. 1394).

Infestations of PINK BOLLWORM still being reported in cotton fields in Maricopa and Pinal Counties, Arizona. (p. 1395).

Winged PINE APHIDS became extremely numerous recently in several areas of Alabama. Populations became very annoying to residents. (pp. 1395-1396).

CATTLE GRUBS observed in backs of cows in Pushmataha County, Oklahoma, and heavy populations of WINTER TICK present on cattle in McCurtain and Pushmataha Counties, same State. Moderate infestations of latter pest also reported from Travis County, Texas. (p. 1398).

DETECTION

A LYONETIID MOTH (*Bucculatrix tridenticola*) recorded for first time in California on sagebrush (p. 1396), and TROPICAL FOWL MITE (*Ornithonyssus bursa*) found for first time in Delaware (p. 1398). New county records of importance were CITRUS RUST MITE (*Phyllocoptruta oleivora*) in Pasco County, Florida (p. 1394), and IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) in Volusia County, Florida (p. 1399).

CORRECTION

See page 1400.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1397).

Another Key to Eriophyid Mites on Florida Citrus. (p. 1400).

Highlights of the Occurrence of Insects and Other Arthropods in Canada, 1963. (p. 1401).

Reports in this issue are for week ending December 6, unless otherwise indicated.

WEATHER OF THE WEEK ENDING DECEMBER 9

High pressure, light winds, and clear skies continued over most of the western half of the Nation during the first part of the week. Fog blanketed the Pacific coast and morning fog filled some valleys in the Pacific Northwest. Stormy weather continued over most of the eastern half of the country. Rain or drizzle fell from Virginia southward to northern Florida and snow fell from Iowa eastward to New England. Subfreezing temperatures combined with the snow caused hazardous driving conditions on some highways in the Northeast. The Weather Bureau issued heavy snow warnings for parts of the Northeast and frost warnings for parts of northern Florida. Snow accumulated to depths of 5 inches or more at some places in Pennsylvania, New York, and New England. By Wednesday morning the snow was 10 inches deep at Rumford, Maine. Cold temperatures pushed southward to the Gulf. Tallahassee, Florida, registered 28° on Wednesday morning. At midnight Wednesday, the temperature at Watertown, New York, had dropped to 0°. Cool temperatures prevailed over the West also. Santa Maria, California, registered 32° on Thursday morning.

As the weekend approached, the weather over the Northwest became unsettled. A storm developed over Montana, moved eastward, and intensified. A cold front stretched southward. The front produced rain showers in the warm moist air which moved northward ahead of the front. Behind the front, gusty north winds, with speeds of 30 to 50 m.p.h., dropped the temperatures far below freezing as heavy snow blanketed the upper Mississippi River Valley. Snow depths reached 8 inches in some areas in the northern Great Plains. The Weather Bureau issued heavy snow warnings to stockmen and travelers in the Dakotas, Minnesota, Nebraska, and Iowa. Gusts reached 75 m.p.h. at points in Nebraska, Iowa, and Kansas. As the storm moved eastward, the warnings were extended to include parts of Wisconsin and Michigan. A new storm moved into the Northwest over the weekend. It intensified and brought heavy snows and blizzard conditions to several western States from Nevada to Nebraska and Kansas and from Oregon to Arizona.

Precipitation exceeded 1.00 inch at a few stations in the Pacific Northwest, at New Orleans, Louisiana, and at a few scattered stations between southern New York and Hatteras, North Carolina. No rain of importance fell from Nevada to Nebraska and southward to Mexico and the Gulf. Elsewhere, precipitation ranged mostly from a few hundredths to about 1/2 inch. Temperatures averaged below normal over most of the area west of the Continental Divide, over the southern Great Plains, the Gulf States, the Atlantic States, and along the shores of Lake Michigan. Temperatures averaged above normal over the southwestern deserts and over the northern and central Great Plains. Temperature departures ranged from -8° at Sacramento, California, to +10° over parts of the Dakotas. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Small populations found on alfalfa in Yuma and Maricopa Counties; averaged 250 per 100 sweeps. (Ariz. Coop. Sur.). OKLAHOMA - Heavy populations depositing honeydew on both seedling and established alfalfa in some areas of Choctaw County. Populations light, counts per 10 sweeps 25 in Garvin County, 120 in Tillman County, 30-60 in Kiowa County, and 5 per linear foot noted in Kingfisher County. Moderate to heavy activity reported from Grady County. (Okla. Coop. Sur.). WISCONSIN - Nymphs still present on alfalfa in Brodhead area. None taken by sweeping since sweeps had to be made above snow level. Few alate viviparae containing embryos present as well as an occasional live apterous oviparae. Egg counts in observation field revealed 36 per stem (39/stem on Nov. 26) in one field and 46 per stem (40/stem on Nov. 26) in an adjacent field. Counts in a new seeding field showed an average of 5.5 per stem compared to 7.5 per stem previous week. Presence of newly laid eggs indicates continuance of oviposition. (Wis. Ins. Sur.).

PEA APHID (Acyrtosiphon pisum) - NEW MEXICO - Light to moderate infestations noted in seedling alfalfa in southern Eddy County. (N. M. Coop. Rpt.). OKLAHOMA - Light, 5 per linear foot of row, in Kingfisher County alfalfa. (Okla. Coop. Sur.). OHIO - Averaged 2 per 50 sweeps on red clover in field near Lancaster, Fairfield County; none found in most fields surveyed. (Lyon). WISCONSIN - Nymphs relatively common on stems of alfalfa brought into the laboratory. (Wis. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Light to heavy populations damaging young barley in northern Eddy County. Few growers treating. (N. M. Coop. Rpt.). OKLAHOMA - Light; counts per foot 1-2 in Garfield County, 1-4 in Kingfisher County, 5-7 in Kiowa County and 4 in McClain County. (Okla. Coop. Sur.). VIRGINIA - Probably this species severely infesting 20 acres of barley on a farm near Crewe, Nottoway County. (Tarpley, Cassell).

GREENBUG (Schizaphis graminum) - OKLAHOMA - Light infestations continue, with counts per foot 0.5-3 in Kingfisher County, 0.5-1 in Garfield County, 1.5 in Kiowa County and 1.5 in McClain County. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Populations continue light throughout northwest, with counts 3-5 per linear foot in Garfield and Kingfisher Counties. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light populations observed; counts 3 per foot in Garfield County, 3-5 in Kingfisher County and 2-3 in Kiowa County. (Okla. Coop. Sur.).

APHIDS - NORTH CAROLINA - Reported heavily infesting wheat in fields in Pasquotank County in a report dated November 19. Survey of small grain fields in Chowan and Perquimans Counties this past week revealed aphid populations very light and no damage observed. (Reid, Mount).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Small numbers found in alfalfa in Yuma, Maricopa and Pinal Counties; averaged 28 per 100 sweeps. (Ariz. Coop. Sur.). OKLAHOMA - Light activity continues in alfalfa in Kiowa, Tillman and Garvin Counties. (Okla. Coop. Sur.).

A BILLBUG (Sphenophorus venatus vestitus) - ALABAMA - Observed extremely heavy in local zoysia grass nursery in Lee County. Adults and larvae heavy enough to cause considerable damage to stolons in some areas to extent that sod unfit for sale. Numerous wireworms, earwigs and field crickets also found. (Barwood, Wise, et al.).

A BILLBUG (Sphenophorus cariosus) - ALABAMA - Reported affecting grass October 3. (Balsbaugh).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Light to heavy, widespread populations damaging oats, wheat and spelts (wheat) in Guadalupe, Hays and Caldwell Counties. (Texas Coop. Rpt.; Massey).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - CALIFORNIA - Light on sunflower in Brawley, Imperial County; first time observed on this host. CELERY LEAF TIER (Udea rubigalis) also occurred on sunflower; this host not previously reported. (Cal. Coop. Rpt.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Heavy, local infestations reported from oat fields in Falls and Bastrop Counties. (Wood, Migura).

FRUIT INSECTS

CITRUS RUST MITE (Phyllocoptruta oleivora) - FLORIDA - Moderately to severely damaging citrus at Bay Lake, Groveland, and Eustis, Lake County, November 20; this was based on 1,800 plants inspected. (Bentley, Henderson). Scattered on 1,410 inspected citrus at Blanton, Pasco County, November 21. (Williams). This is first record of this mite in Pasco County. (Fla. Coop. Sur.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Found moderately infesting approximately 95 percent of 9,660 sweet orange trees inspected at Eustis and Mt. Dora, Lake County, on November 18 (Bentley), and 50 percent of 1,614 plants of same host at Brandon, Hillsborough County, on November 20 (Simmons).

CALIFORNIA RED SCALE (Aonidiella aurantii) - ARIZONA - An infestation detected on citrus in an area near Glendale, Maricopa County. (Ariz. Coop. Sur.).

NAVEL ORANGEWORM (Paramyelois transitella) - CALIFORNIA - Larvae heavy on peach and nectarine mummies in Arvin, Kern County. (Cal. Coop. Rpt.).

A LEAF-FOOTED BUG (Leptoglossus zonatus) - CALIFORNIA - Adults medium on pomegranate fruit in Bard, Imperial County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Larvae being reported from pecans in Mason County. (Garrett). NORTH CAROLINA - Infesting pecans in Wayne County. (Goforth, Robertson).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Infestations increased in Yuma County and remained the same in Maricopa County. Control efforts still being maintained to keep damage to a minimum. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Populations apparently decreased in Yuma County, but continue to be a problem to lettuce producers in Maricopa County. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Lettuce growers in Yuma and Maricopa Counties continue to be plagued with small but potentially dangerous numbers of this insect. (Ariz. Coop. Sur.).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Light on cabbage in El Centro, Imperial County. (Cal. Coop. Rpt.).

MILLIPEDS - WASHINGTON - Polydesmus inconstans causing damage to potatoes in home gardens at Dayton, Columbia County. Det. by Causey. (Landis, Miller; Nov. 28). Diploulus latistriatus suspected of causing damage to gardens at Silverdale, Kitsap County. Det. by Causey. (Sivo, Brannon; Nov. 28).

COTTON INSECTS

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Light trapping discontinued for season in all areas, and gin trash processing finished in Central Valley counties. Work continues in Imperial Valley, Imperial County, and in Riverside County. All results of detection negative for this pest so far this year. (Cal. Coop. Rpt.). ARIZONA - Infestations in cotton fields of Maricopa and Pinal Counties still being reported by State and Federal cooperators. (Ariz. Coop. Sur.). NEW MEXICO - Still able to find live larvae in partially dried bolls in Eddy County cotton fields. High mortality of younger larvae observed in green, terminal bolls which were frozen. (N. M. Coop. Rpt.). OKLAHOMA - Lint cleaner inspections in Beckham and McCurtain Counties negative; inspections in Tillman, Caddo, Cotton, Custer, Kiowa and Washita Counties positive. (Okla. Coop. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - CALIFORNIA - Two male moths taken in Argon light traps during October; one in Winterhaven, Imperial County, on October 16 and one 4 days later in Le Grand, Merced County. Previous records indicate specimens taken in Warner, San Diego County, in 1919 and in Indio, Riverside County, in 1923. Species is normally winter killed. (Cal. Coop. Rpt., Oct. Sum.). Collections reported in CEIR 13(44):1294 not a new State record.

A SCARAB (*Euphoria sepulchralis*) - ARKANSAS - Seven adults collected by Doyne Smith from inside cotton bolls in Chicot County in July. Probably feeding as scavengers and had enlarged holes in bolls previously made by bollworm (*Heliothis zea*). (Ark. Ins. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - VIRGINIA - Potentially explosive infestation reported in CEIR 13 (44):1295 (PINE BARK BEETLES) found to be predominantly *Ips grandicollis* in an estimated 50 percent of infestations in combination with *Dendroctonus terebrans*. *Ips* spp. noted in Dinwiddie County in loblolly and in shortleaf pine in Brunswick and northwest Greensville County. Numerous outbreaks noted throughout these counties but not many east of Stony Creek. *Ips* bark beetles killed 5 Virginia pines in Fluvanna County and appeared more evident in both shortleaf and loblolly pine in Amelia (3 tracts), Charlotte (1 tract), Nottoway (12 tracts) and Lunenburg Counties (numerous tracts). Infestations ranged in size from 6 to 25 trees. Mortality to loblolly pine in King William (8 spots, up to 30 acres in size), Chesterfield (4 spots, up to 18 trees per spot) and Hanover Counties (4 spots, up to 20 trees in size) reported due to *Dendroctonus frontalis*. Five Virginia pines in Albemarle County reportedly killed by this species and continuing activity noted in several spots in each of Charlotte, Nottoway, Prince Edward and Mecklenburg Counties (6 trees-1 acre in size, shortleaf pine). Activity and visible damage by *D. frontalis* and *D. terebrans* reported increasing in Chesterfield and Hanover Counties. *D. frontalis* remains active mainly in Accomack County in loblolly pine and to a lesser extent (5 new spots) in Northampton County. Death of loblolly pine in several tracts in Chesterfield and Hanover Counties caused by *Dendroctonus* spp. (30 trees minimum per spot). Activity and visible damage by both *D. frontalis* and *D. terebrans* reported to be increasing. Found infesting several small groups (1-6 trees) of shortleaf pine in Lunenburg County and notably active on one 4-acre tract of white pine in Grayson County, causing extensive mortality. *D. terebrans* responsible for killing a few Virginia pines in one spot in Augusta County; larvae and adults present. (Va. For. Pest Sur. Rpt., Oct. Sum.).

PINE APHIDS - ALABAMA - Populations, previously reported in CEIR 13(48):1365, suddenly became airborne in mass and caused considerable concern in Montgomery and Lee Counties, and in other areas of State. Winged aphids reported just ahead of a weather front in State by radio, television and hundreds of telephone callers in Montgomery, Montgomery County, to be flying and hovering like gnats and flying to windows up and down streets of Montgomery and as high as 8 stories up. A

similar condition occurred in Birmingham, Jefferson County, a few weeks ago. These aphids very active on native pines (slash, loblolly, shortleaf). Adults giving birth rapidly to living young; temperatures have been as low as 22° F. Counts 100-1,500 per pine twig tip. Lady beetles and syrphids active and feeding on aphids. Automobiles parked under trees being covered with honeydew. Trees with blackish cast as a result of a sooty-mold growth and honeydew on needles and limbs. Health of trees apparently will not be affected. (Ruffin, Helms, McGlohon, et al.). Specimens collected by H. F. McQueen determined by L. M. Russell as Eulachnus, with few Cinara present. Specific determination will be reported when available.

A SOFT SCALE (Toumeyella sp.) - FLORIDA - Severely infesting leaves, stem and bark of slash pine at Daytona Beach, Volusia County, on November 21. (Pott).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Light infestations on spruce trees in Coshocton County; several females still laying eggs. (Ellis).

PINE WEBWORM (Tetralopha robustella) - FLORIDA - Found severely damaging stems of 30 percent of 125 inspected pines at Tampa, Hillsborough County, November 8. (Hale). VIRGINIA - Damage evident on many trees in 4 plantations of loblolly pine in Fluvanna County, and this species caused slight damage to loblolly pine seedlings in 2 tracts in Isle of Wight County. Larvae noted on October 9 on Buffalo Creek Watershed, Prince Edward County, on planted loblolly and volunteer Virginia pine seedlings, infesting up to 25 percent of seedlings in spots. Larger than normal number of larvae present in frass masses. (Va. For. Pest Sur. Rpt., Oct. Sum.).

APHIDS - UTAH - Myzus ascalonicus taken from arborvitae and juniper duff at Logan, Cache County, during January. Macrosiphum euphorbiae plus some Myzus persicae heavily infested tulips during June at Santa Clara, Washington County. (Knowlton, Eastop). Aphis bonnevillensis unusually abundant on greasewood (Sarcobatus vermiculatus) during June and early July in Box Elder, Tooele, Sanpete, Emery and San Juan County rangelands. Very heavy populations of Neothomasia populicola present on younger trees in number of areas during past summer including Crystal Spring near summit of Logan Canyon in Rich County, Ogden and Beaver Canyons, Oak City and Brigham City. (Knowlton).

ITALIAN PEAR SCALE (Epidiaspis piricola) - CALIFORNIA - Light on mountain-ash (Sorbus sp.) nursery stock in Millbrae, San Mateo County. (Cal. Coop. Rpt.).

TULIPTREE SCALE (Toumeyella liriodendri) - CALIFORNIA - Light on magnolia nursery stock in Morgan Hill, Santa Clara County. (Cal. Coop. Rpt.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - TEXAS - Causing damage to chinaberry trees in localized areas of Panola County. (Croix).

CITRUS MEALYBUG (Pseudococcus citri) - CALIFORNIA - Medium to heavy populations on guava nursery stock in Fremont, Alameda County. (Cal. Coop. Rpt.).

LONG-TAILED MEALYBUG (Pseudococcus adonidum) - OHIO - Moderate infestations observed on greenhouse plants near Mansfield, Richland County. (Lyon).

HACKBERRY-NIPPLE-GALL MAKER (Pachysylla celtidismamma) - FLORIDA - Found infesting leaves of hackberry November 20. Large numbers of adults emerging from galls on leaves of hackberry trees. (Hetrick).

A LYONETIID MOTH (Bucculatrix tridenticola) - CALIFORNIA - Identified from sagebrush from Susanville area, Lassen County. This is first record of this species in the State. (Cal. Coop. Rpt.).

ORANGE TORTRIX (Argyrotaenia citrina) - CALIFORNIA - Medium populations on blue spruce (Picea pungens) nursery stock in Salinas, Monterey County. (Cal. Coop. Rpt.).

A PYRALID MOTH (*Herculia phaezalis*) - CALIFORNIA - Heavy populations webbing needles of Colorado blue spruce in San Rafael, Marin County. (Cal. Coop. Rpt.).

BOXWOOD LEAF MINER (*Monarthropalpus buxi*) - CALIFORNIA - Larvae heavy in boxwood leaves in Gilroy, Santa Clara County. (Cal. Coop. Rpt.).

GLADIOLUS THRIPS (*Taeniothrips simplex*) - UTAH - Fairly numerous infesting corms of gladiolus stored at Logan, Cache County. (Knowlton).

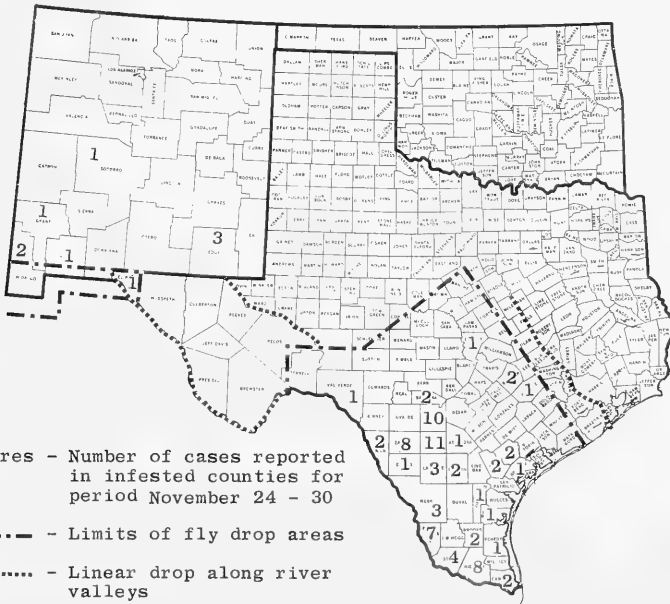
CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) - CALIFORNIA - Light in *Ficus retusa* in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.).

SOUTHERN RED MITE (*Oligonychus ilicis*) - FLORIDA - Found severely damaging 100 percent of 175 plants of firethorn (*Pyracantha coccinea*) at Fairvilla, Orange County, on November 15. (Griffith).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period November 24 - 30, screw-worms, although in lesser numbers, continued to occur over most of southern Texas and southwestern New Mexico; 82 cases were reported in 26 TEXAS counties and 10 cases in 5 NEW MEXICO counties. There has been no change in the fly release area during the past week; however, it is expected, as cooler weather approaches, flies will be available to divert further south into the expanded northern Mexico barrier. A total of 149,350,350 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



MOSQUITOES - TEXAS - Unspecified species causing considerable annoyance to residents of Jefferson County. (Crocker). FLORIDA - Aedes infirmatus taken in small numbers biting man at Gainesville, Alachua County, November 22-28. (Mead). Total catch of mosquitoes in light traps around State continues to become smaller and generally very light. (Fla. State Bd. of Hlth., Nov. 19).

CATTLE GRUBS (Hypoderma spp.) - UTAH - Control by newer systemics included 200 cattle in Emery County, 1,500 in Juab County, 1,250 in Kane County and 500 in Sevier County, plus 3,000 in Beaver County. (Knowlton). OKLAHOMA - Counts of H. lineatum grubs averaged 6 per animal in number of herds of cows checked in Pushmataha County, with 90 percent of animals infested. This is first report of season. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Activity continues around feed lots and in sheltered areas of Atoka and Pushmataha Counties. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Control by newer systemics and conventional insecticides includes 2,500 cattle treated in Kane County, 3,000 in Beaver County and 500 in Sevier County. (Knowlton). OKLAHOMA - Some apparent activity started as feed lot calves beginning to rub shoulders and neck regions on suitable objects around pens in Pushmataha County. Activity also reported from Greer and Stephens Counties. (Okla. Coop. Sur.).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Light to moderate infestations reported from Washington, Greer, and Stephens Counties. (Okla. Coop. Sur.).

EAR TICK (Otobius megnini) - OKLAHOMA - Activity reported from Cotton County. (Okla. Coop. Sur.).

WINTER TICK (Dermacentor albipictus) - TEXAS - Moderate infestations on cattle being reported from Travis County. (Cooke). OKLAHOMA - Heavy populations, ranging from 50-75 per animal, present on cattle in McCurtain and Pushmataha Counties. (Okla. Coop. Sur.).

TROPICAL FOWL MITE (Ornithonyssus bursa) - DELAWARE - Specimens collected from eggs December 2 by Daniel Jaquette, D.V.M., from chickens located at Millsboro in southeastern Sussex County. Determined by John Mellott. A heavy infestation of this poultry pest is suspected in this commercial flock. This is a new State record. (Burbutis, MacCreary).

HOUSEHOLD AND STRUCTURAL INSECTS

A SPIDER BEETLE (Ptinus ocellus) - WASHINGTON - Adults abundant in residence in Conway, Skagit County. Annoying, but no apparent damage. (Baker).

CARPET BEETLES (Anthrenus spp.) - MICHIGAN - Few reports and inquiries regarding activity received. (Janes).

BOXELDER BUG (Leptocoris trivittatus) - OHIO - Adults creating a problem locally in Licking County. (Walker). MICHIGAN - Few reports and inquiries regarding activity received. (Janes).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Adults continue a nuisance by invading homes and offices in Merced, Merced County. (Cal. Coop. Rpt.).

PSOCIDS - WASHINGTON - Adults abundant in residence in Friday Harbor, San Juan County; no apparent damage but annoying. (Baker).

CLOVER MITE (Bryobia praetiosa) - VIRGINIA - A nuisance locally in Lovingson, Nelson County, and Blacksburg, Montgomery County. (Tarpley, Swain). MARYLAND - Nuisance locally in Talbot County. (U. Md., Ent. Dept.). OHIO - Observed in

Cleveland home. (Holdsworth). MICHIGAN - Adults reported still entering dwellings in Marquette County and a few other counties. Relatively few reports of this pest problem have been received this autumn. (Nyquist, Janes).

MITES - ALABAMA - Annoying to resident in Wetumpka, Elmore County; infestation attributed to roosting of starlings on bamboo cane adjoining residence. Controls necessary. (Ruffin).

STORED-PRODUCT INSECTS

POTATO TUBERWORM (*Gnoringoschema operculella*) - MICHIGAN - Adults collected from a potato storage in Monroe County at rate of 87 per night for 6 nights with blacklight trap. Potatoes in this storage were being held at 60° F. (Wells, Laser).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - TEXAS - An infestation causing quite a problem to a commercial nut processing company in Dallas County. (Thomas).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (*Hippodamia convergens*) - ALABAMA - Adults and larvae extremely abundant on pines heavily infested with aphids. Many pupae present. Few *Cycloneda sanguinea*, another lady beetle, also present. (McQueen). H. convergens abundant and feeding on aphids in alfalfa in Lee County. (Hyche).

A LADY BEETLE (*Olla abdominalis sobrina*) - VIRGINIA - Teneral adults collected on maple tree at Farmville, Prince Edward County. (Tarpley, Dudley, Peery; Nov. 27).

A TACHINA FLY (*Exorista mella*) - UTAH - Reared from larvae of Douglas-fir tussock moth (*Hemerocampa pseudotsugata*) from North Logan, Cache County, defoliating blue spruce July 11, 1963. Det. by C. W. Sabrosky. (Davis, Knowlton).

INTERCEPTIONS

LESSER MEALWORM (*Alphitobius diaperinus*) - WASHINGTON - Adults found in large numbers under paper and burlap coverings of hemp mats shipped by boat from the Philippines arriving by truck in Wenatchee, November 6. Det. by M. H. Hatch. (Rushmore, Brannon).

COFFEE BEAN WEEVIL (*Araecerus fasciculatus*) - TEXAS - Light infestation reported in about 800 bags of coffee beans in a Harris County warehouse. The coffee beans imported from Columbia, South America. (Derrick).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Found along Interstate Highway 4 in S-10, T-19-S, R-30-E, De Bary, Volusia County, on November 15. Infestation light. Det. by W. Breidenbach. First record for Volusia County. (Fla. Coop. Sur.).

GREATER WAX MOTH (*Galleria mellonella*) - TEXAS - Moderate, local populations reported damaging honey bee hives in Harris County. (Texas Coop. Rpt.; Massey).

LARDER BEETLE (*Dermestes lardarius*) - UTAH - Extremely numerous in mink droppings and in holes in soft redwood mink nests at West Jordan, Salt Lake County, in mid-August. Det. by J. M. Kingsolver. (Knowlton).

A NITIDULID (*Conotelus mexicanus*) - CALIFORNIA - Adults heavy in alfalfa flowers in Holtville, Imperial County. (Cal. Coop. Rpt.).

A DARKLING BEETLE (*Blaps lethifera*) - OHIO - Adults and larvae light in soil at depth of 6 inches at a house stable near Athens, Athens County. (Lyon).

A COCKROACH (*Blattella vaga*) - UTAH - Appears to have become a common outdoor pest at St. George, Washington County. (Knowlton).

CORRECTIONS

CEIR 13(44):1294 - COTTON LEAFWORM (*Alabama argillacea*) - CALIFORNIA - Delete portion of first sentence "constitutes a new State record." Previous records indicate specimens taken in 1919 and 1923. See page 1395 of this issue.

ANOTHER KEY TO ERIOPHYID MITES ON FLORIDA CITRUS^{1/}

H. H. Keifer

1. Abdominal dorsum with broad longitudinal trough, bordered laterally by a ridge on each side; dorsal shield setae set ahead of rear shield margin and pointing up and centrally; citrus rust mite (yellow rust mite) *Phyllocoptruta oleivora* (Ashm.)
 Abdomen evenly convex dorsally; dorsal shield setae pointing back from rear shield margin 2
2. Body fusiform, thickest anteriorly; body rings broader dorsally than ventrally; pink rust mite *Aculus pelekassi* Keifer
 Body wormlike; body rings narrow and undifferentiated dorsoventrally; living under bud scales or under fruit buttons; citrus bud mite. *Aceria sheldoni* (Ewing)

^{1/} Denmark, H. A. 1963. Eriophyid Mites Found on Florida Citrus. CEIR 13(46):1341-1342.

HIGHLIGHTS OF THE OCCURRENCE OF INSECTS AND OTHER ARTHROPODS
IN CANADA, 1963

C. Graham MacNay

The following are some of the more important records of the occurrence of arthropod pests in Canada in 1963.

In much of the agricultural area of the Prairie Provinces, GRASSHOPPERS again occurred in outbreak numbers, but several factors combined to restrict crop losses sufficiently to permit the harvesting of a record crop of grain. In the more southern areas of Alberta, in Saskatchewan, and in northwestern agricultural areas of Manitoba, where grasshopper population densities were greatest, prompt and extensive control measures were carried out. In Alberta, good rains toward the end of June removed the threat of major damage. In Saskatchewan and Manitoba, extended periods of wet weather prolonged hatching, retarded nymphal development, and stimulated plant growth. Furthermore, the incidence of the fungus disease, Entomophthora grylli, was widespread. In Manitoba, in comparison with 1962, there was a reduction of approximately 80 percent in the area infested and 90 percent in overall population density.

In Alberta, southward from Drumheller, infestation of nearly all wheat by the ARMY CUTWORM (Chorizagrotis auxiliaris) was the heaviest in several years. In Saskatchewan, infestation was the heaviest and most widespread ever recorded, involving all of the southwestern area of the Province, but by delaying seeding and applying insecticides, crop losses were minimized. In Alberta, infestation by the PALE WESTERN CUTWORM (Agrotis orthogonia) was the heaviest in many years. Severe damage, accentuated by drought conditions, made much reseeded necessary in the Lethbridge and other areas. In Saskatchewan, damage was moderate in southwestern and west central areas and lighter than in 1962. In Saskatoon, unusual infestations of GLASSY CUTWORM (Crymodes devastator) and BRONZED CUTWORM (Nephelodes emeddonia) injured lawns, and the RED-BACKED CUTWORM (Euxoa ochrogaster) was moderately numerous in gardens. In Ontario, VARIEGATED CUTWORM (Peridroma saucia) severely attacked tobacco as seedlings in greenhouses and in midsummer in the field, DARK-SIDED CUTWORM (Euxoa messoria) severely damaged tobacco generally, BLACK CUTWORM (Agrotis ipsilon) in a few plantings and SPOTED CUTWORM (Amathes c-nigrum), not a pest of tobacco in recent years, caused some damage. The DARK-SIDED CUTWORM injured corn in Norfolk County and unidentified species of cutworms fed on trefoil in Lambton County. In Nova Scotia, the VARIEGATED CUTWORM injured beets in the Sydney area.

In Manitoba, five times the normal population of SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) damaged flax, wheat, and barley; caused almost total loss of unsprayed head lettuce; and reduced yields of carrots by 35 percent, celery by 25 percent and onions by 5 percent. In Ontario and Quebec, populations were unusually small. In Prince Edward Island, losses in untreated lettuce ranged from 25 percent to 90 percent.

In British Columbia, the CLOVER SEED WEEVIL (Miccotrogus picirostris) was found in the Peace River district near Dawson Creek. In Alberta, 12,000 acres of sugar beets were treated for SUGAR-BEET ROOT MAGGOT (Tetanops myopaeiformis) and FLEA BEETLES (Phyllotreta spp.) were injurious. Other pests of this crop were not numerous, nor were WIREWORMS and the WHEAT STEM SAWFLY (Cephus cinctus) in general. FLEA BEETLES severely damaged rapeseed and mustard crops in the Prairie Provinces, much spraying being necessary in northern areas. In southern Alberta, the SAY STINK BUG (Chlorochroa sayi) occurred in the largest numbers in 20 years. At Estevan and Wynyard, Saskatchewan, THRIPS (presumably Limothrips denticornis) attacked barley in a record outbreak. HESSIAN FLY (Phytophaga destructor) heavily infested wheat in the Regina Plains and other areas of Saskatchewan and in Manitoba, the first outbreak in many years. The CORN LEAF APHID (Rhopalosiphum maidis) and drought destroyed much barley in the Red River Valley. The recently described mite, Tetranychus sinhai, was found on barley, wheat and rye in western

Canada. Infestation of corn by the EUROPEAN CORN BORER (Ostrinia nubilalis) increased in southern Manitoba, was very light in southwestern Ontario and light to moderate in southern Quebec. ROOT MAGGOTS (Hylemya spp.), largely insecticide resistant, severely injured germinating corn, beans and peas and tobacco seedlings in Ontario and Quebec. In southern Ontario, populations of the NORTHERN CORN ROOTWORM (Diabrotica longicornis) were the largest on record and leatherjacket larvae, prob. Nephrotoma sodalis, attacked tobacco. At Niagara Falls, the EUROPEAN CHAFER (Amphimallon majalis) severely injured sod in lawns, parks, and cemeteries. In Prince Edward Island, the BARLEY JOINTWORM (Harmolita hordei) was very scarce, probably decimated by low winter temperatures. In Newfoundland, the CRANE FLY (Tipula paludosa) heavily infested hay and pasture at Colinet.

Throughout the lower mainland of British Columbia and on Vancouver Island, insecticide resistance was general in ROOT MAGGOTS. Total loss of all crucifers occurred in some areas. The CARROT RUST FLY (Psila rosae) was again becoming common and for the first time destroyed some celery crops. Damage by the GARDEN SYMPHYLAN (Scutigera immaculata) continued to increase. The CABBAGE APHID (Brevicoryne brassicae) was unusually injurious and difficult to control. The BEET LEAF MINER (Pegomya betae) damaged beets, spinach and lambsquarters in the Kamloops area. In southern Ontario, Hylemya florilega (= H. liturata) was unusually numerous and damage to seeded garden crops, transplants, and potatoes was extensive. The MEXICAN BEAN BEETLE (Epilachna varivestis), spreading steadily, was numerous as far north as Clinton. In southern Quebec, WIREWORMS severely damaged potatoes in organic soils and SLUGS were unusually injurious in gardens. At Maugerville, New Brunswick, the POTATO STEM BORER (Hydroecia micacea) damaged rhubarb extensively. In Prince Edward Island, CABBAGE MAGGOT (Hylemya brassicae) was numerous in young turnips early in the season. In Newfoundland, organic phosphates against ROOT MAGGOTS enabled growers to resume production of cruciferous crops.

In coastal British Columbia, larvae of the BLACK VINE WEEVIL (Brachyrhinus sulcatus) and a small OECOPHORID CATERPILLAR (Dasystoma salicellum) were problem pests in blueberries. In the Okanagan, weather conditions were generally unfavorable to orchard pests, but the European red mite (Panonychus ulmi) flourished. In southern areas of Ontario and Quebec, too, this mite was the major pest of fruit trees. In Ontario, APPLE APHID (Aphis pomi) also was numerous but other apple pests were scarce. In southwestern Quebec, APPLE MAGGOT (Rhagoletis pomonella) persisted in large numbers but other insects were of minor importance. In the Annapolis Valley, Nova Scotia, the WINTER MOTH (Operophtera brumata) continued to be numerous in apple orchards, but APPLE MAGGOT, increasing in recent years, decreased sharply in numbers.

Other occurrences of note included: In British Columbia, the smallest numbers of FLOODWATER MOSQUITOES in many years and the continued spread of the 4 to 5-inch introduced SLUG (Arión ater); in northern areas of the Prairie Provinces, a continuation of the severe FOREST TENT CATERPILLAR (Malacosoma disstria) outbreak; in Alberta, increased numbers of a BLACK WIDOW SPIDER (Latrodectus curacaviensis), and severe attacks on livestock by a BLACK FLY (Simulium arcticum) in the Athabasca area; in southern Saskatchewan, MOSQUITOES very numerous, 190 reported cases of equine encephalitis (31 fatal), 28 cases in humans to Oct. 7; in Manitoba, severe outbreaks of FALL CANKERWORM (Alsophila pometaria) and ASPEN LEAF BEETLE (Chrysomela crotchii); in Ontario, unusual outbreaks of LARDER BEETLE (Dermestes lardarius) in buildings, usually associated with infestations of CLUSTER FLY (Pollenia rudis) and FACE FLY (Musca autumnalis), and of STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) entering buildings, heavy infestations of the FACE FLY on livestock, and large numbers of AMERICAN DOG TICK (Dermacentor variabilis) in the Hagersville area.

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AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Reports are issued freely as a service to American agriculture. The contents are compiled from information supplied on a non-exclusive basis. Federal and industry personnel and other agricultural workers in releasing this material take no responsibility as a printing house and do not assume responsibility for the 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 20781

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GREENBUG counts 200 per linear foot in localized area of Payne County, Oklahoma, and heavy populations reported in isolated sandy land areas of Logan County, same State; 2 fields sprayed in latter area. Annual CHINCH BUG hibernation survey in Kansas revealed severe ratings in Montgomery County, southeast area, and Linn County, east central area. (p. 1405).

PEACH TREE BORER quite heavy and active on untreated peach, plum and cherry trees in Alabama. CITRUS RUST MITE and TEXAS CITRUS MITE populations higher on citrus leaves in Florida than any other November on record; cold-damaged groves have heavier infestations. HICKORY SHUCKWORM larval populations extremely high in pecan shucks in numerous Lee County, Alabama, orchards. (p. 1406).

PINK BOLLWORM infestations still being found in cotton-growing areas of Maricopa and Pinal Counties, Arizona; infestations found in nearly all areas of Maricopa County. (p. 1407).

DETECTION

A DIASPID SCALE INSECT (Clavaspis herculeana) found for first time in Hawaii. (p. 1416).

CORRECTIONS

See page 1411.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1409). Only 14 cases of screw-worms identified in southwestern eradication area, all in Texas.

Boll Weevil Hibernation Surveys in North and South Carolina, Tennessee, Mississippi, Louisiana and Texas - Fall 1963. (pp. 1413-1415). Average counts (live weevils per acre) exceeded those of the fall of 1962 only in south central South Carolina and northeastern Louisiana. In all other areas sampled, average counts were lower than in the fall of 1962.

Hawaiian Insect Notes. (p. 1416).

Survey to Determine the Oviposition and Hatching Records of the Alfalfa Weevil in Massachusetts During the Fall of 1963. (p. 1417).

Interceptions of Special Interest at U.S. Ports of Entry. (p. 1418).

Reports in this issue are for week ending December 13, unless otherwise indicated.

WEATHER OF THE WEEK ENDING DECEMBER 16

At the beginning of the week, a vigorous storm centered over the Great Lakes region was causing strong, gusty winds and snow flurries from the upper Mississippi River Valley eastward to the Appalachians. Another storm brought rains from central California northward and rain or snow over the Pacific Northwest and Rocky Mountains. This storm intensified as it moved eastward. It produced heavy snow over the northern half of the Country from the Rocky Mountains eastward to the Atlantic. Temperatures over the Rocky Mountains dropped to zero as far south as northern New Mexico. Subzero temperatures occurred over the Great Plains as far south as Oklahoma. Freezing temperatures reached the Gulf of Mexico. Tallahassee, Florida, registered 23° Tuesday morning. The Weather Bureau issued heavy snow and glaze warnings to help protect stockmen and travelers.

By Saturday morning, the storm had moved eastward to the Atlantic and the leading edge of the Arctic air had pushed its way to the Gulf of Mexico. A new wave developed over the northern Great Plains and cold temperatures continued throughout the United States. Light precipitation continued over the northern part of the Nation from Washington to New England. As the storm moved eastward, high pressure dominated mid-America. Subzero temperatures pushed southward. Kirksville, Missouri, registered 10° below zero and Bemidji, Minnesota, registered 36° below zero Monday morning. At the end of the week, winter gripped the entire Nation. A new storm in the Far Northwest was bringing rain along the coast and snow at higher elevations. Scattered flurries occurred over the northern and central Great Plains, with heavier snow in the lee of the Great Lakes. In southern Florida, where afternoon temperatures had been in the 80's, the temperatures rose no higher than the 70's on Sunday.

Temperatures for the week averaged below normal over the entire country, except at Key West, Florida. Most of the northern and central Great Plains averaged colder than 15° below normal. Precipitation exceeded 1/2 inch over New England and 1 inch over the extreme Northwest. Over the southeastern quarter of the Nation, precipitation ranged from 1 to 4 inches. Several stations received slightly more than 4 inches during the week. Other areas of the United States received little or no precipitation. Snow fell as far south as the northern portions of the Gulf States and freezing rain fell in the central parts of those States. At the end of the week, the northern half of the country was covered by snow which ranged from 2 to 10 inches deep generally, but to far greater depths in the western mountains. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

GREENBUG (Schizaphis graminum) - OKLAHOMA - Populations of 200 per linear foot present in localized area of Payne County. Heavy populations also reported in isolated sandy land areas of Logan County; ranged 50-200 per linear foot; 2 fields sprayed in this area. Counts ranged 1-4 per linear foot in northwest; fewer than 1 per foot in east central; and none found in fields checked in southwest. All counts made prior to onset of sub-freezing and icy conditions. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARKANSAS - Numbers much lower in northwest area than few weeks ago prior to rain and cold weather. Alfalfa on University of Arkansas farm, where counts previously reported as high as 400-500 per linear foot, now only 15-20 per linear foot. Temperature for 2 nights below 20° F. (Ark. Ins. Sur.). OKLAHOMA - Light populations of 15-40 per 10 sweeps in alfalfa noted in Kiowa-Jackson County area, southwest. (Okla. Coop. Sur.). ARIZONA - Populations remain very small on alfalfa in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - OKLAHOMA - Populations of 100 per 10 sweeps present in alfalfa in Jackson County; counts ranged 5-20 per 10 sweeps in Mayes and Muskogee Counties. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Light counts of 0-10 per linear foot noted in fields checked in northwest, southwest, central and east central areas. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light populations of fewer than 10 per linear foot noted in some fields checked in northwest, southwest, central and east central areas. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 5-30 per 10 sweeps in Kiowa and Jackson County alfalfa. (Okla. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults averaged 25 per 100 sweeps in alfalfa in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CHINCH BUG (Blissus leucopterus) - KANSAS - Annual hibernation survey completed. Samples of bunch grass collected during late November in 58 counties in 6 districts of State. The highest average numbers of hibernating bugs per square foot of bunch grass were in Linn County, east central area (1,636), and in Montgomery County, southeast area (1,419). These are both severe ratings. Marshall County, northeast area, had an average of 646 bugs per square foot; Sumner County, south central area, had 614; and Shawnee County, east central, had 525. These are all moderate ratings. In northeast area, Pottawatomie County had 427, Jackson County had 423 and Nemaha County had 393; in central area, McPherson County had 335. These are all light ratings. All other counties surveyed had average counts of less than 250 bugs per square foot of bunch grass, or non-economic ratings. (Bell, Peters).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Adult counts per 100 sweeps in alfalfa averaged 20 in Yuma County and 33 in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

GROUND PEARLS - ALABAMA - Extremely heavy in 50-acre field in Dale County where Bahia grass plowed up past spring and planted to corn. Populations apparently built up on root system of Bahia grass. (Estes, Buttram).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Counts of 10 per 10 sweeps noted in alfalfa in Kiowa and Jackson Counties. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthalaeus major) - TEXAS - Heavy, widespread populations damaging oats in Comal County. (Shaver).

FRUIT INSECTS

PEACH TREE BORER (Sanninoidea exitiosa) - ALABAMA - Quite heavy and active on untreated peach, plum and cherry in State. Few 3-year-old plums dug and examined revealed average of 5 larvae per tree, with hidden girdling covering 50 percent of underground trunk area. Large amounts of "gum", mostly at ground level and beneath, reveal infestations. (McQueen).

SCHOENE SPIDER MITE (Tetranychus schoenei) - GEORGIA - Light on peach trees in Houston County. (Pollard, Sept. 13).

Citrus Insect Situation in Florida - End of November - On leaves, CITRUS RUST MITE (Phyllocoptura oleivora) infested 78 percent of groves (norm 71 percent); 66 percent economic (norm 47 percent). On fruit, CITRUS RUST MITE infested 66 percent of groves (norm 70 percent); 49 percent economic (norm 47 percent). Population on leaves highest on record for November due to extremely high infestations in groves damaged by cold last December. Those groves also have high infestations on fruit. Population on fruit decreasing to normal level but will remain high on leaves. Highest districts Brooksville, Bartow, west coast, upper east coast and Gainesville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 59 percent of groves (norm 30 percent); 25 percent economic (norm 13 percent). Population continues to be higher than in any prior November, with cold-damaged groves having heavier infestations. Decrease is expected in December. Highest districts Gainesville, upper east coast, west coast and Brooksville. CITRUS RED MITE (Panonychus citri) infested 50 percent of groves (norm 54 percent); 24 percent economic (norm 24 percent). This mite near moderate level typical of November. Few heavy infestations will occur in cold-damaged groves. Highest districts Brooksville and west coast. PURPLE SCALE (Lepidosaphes beckii) infested 82 percent of groves (norm 72 percent); 19 percent economic (norm 6 percent). GLOVER SCALE (L. gloverii) infested 68 percent of groves (norm 28 percent); 18 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 73 percent of groves (norm 43 percent); 20 percent economic (norm 1 percent). YELLOW SCALE (Aonidiella citrina) infested 38 percent of groves (norm 11 percent); 6 percent economic (norm 1 percent). The above scale species continue to be above normal abundance; however, only few scattered groves have important infestations. Decrease is expected, except for YELLOW SCALE, which may increase slightly. Pinnaspis strachani is above normal abundance in east coast groves. It is of little importance at this time. WHITEFLIES are decreasing but still are above average level. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CITRUS RUST MITE (Phyllocoptura oleivora) - FLORIDA - Light on leaves of several thousand sweet orange surveyed December 3-10 at Dundee, Babson Park and Bowling Green, Polk County; Weirsdale, Marion County; Dade City, Pasco County; and Avon Park, Highlands County. (Fla. Coop. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Young larvae found in rolled leaves of citrus in nursery in Yuma County. (Ariz. Coop. Sur.).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Examination of pecan shucks on ground in numerous Lee County orchards revealed extremely high larval population in shucks; some infestations as high as 1-2 larvae per shuck. Nut yield extremely high this year in State. An estimated one-half to 5 million larvae per acre of orchard going into winter months in old shucks in many orchards. Pupation should occur in March and April of 1964. (McQueen).

FIG SCALE (Lepidosaphes ficus) - CALIFORNIA - Immature forms infesting fig trees locally in Sacramento, Sacramento County. This pest is generally kept under economic levels by parasites in most areas of State. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

CABBAGE APHID (*Brevicoryne brassicae*) - ALABAMA - Continues a problem on cabbage and collards throughout central part of State. Control on Experiment Station farm in Lee County has been very difficult and almost impossible. What is probably this species and *Hyadaphis pseudobrassicae* (turnip aphid) reported serious on salad crops in Cullman County approximately 15 days ago. (Johnston, Pinkston).

TOMATO FRUITWORM (*Heliothis zea*) - ARIZONA - Larvae continue to damage lettuce crop in Pinal and Maricopa Counties. Controls being continuously applied to keep damage at a minimum. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Populations have decreased in lettuce in Yuma and Maricopa Counties; less controls now being applied. (Ariz. Coop. Sur.).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - ALABAMA - Severe infestation reported on localized farm in Geneva County. This farm affected 4-5 years ago; this first replanting of sweetpotatoes since that time. (Williams, Ledbetter).
GEORGIA - Moderate on sweetpotatoes in Decatur County. (Powell, Dec. 5).

A LEAF MINER (*Liriomyza munda*) - OHIO - Heavy numbers observed on tomato foliage at greenhouse in Wooster, Wayne County, northeast. (Lyon).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - FLORIDA - Infesting strawberry at Gainesville, Alachua County. (Habeck).

COTTON INSECTS

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Infestations still being found in cotton-growing areas of Maricopa and Pinal Counties. Infestations have been found in nearly all areas of Maricopa County. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE APHIDS - ALABAMA - Populations, mainly *Eulachnus*, continue very high in pines but have not caused as much alarm in flight as some 10 days previously in some areas of State. Cars and equipment under affected trees heavy with honeydew. Adults and larvae of *Hippodamia convergens* continue to feed in abundance, along with syrphid fly larvae; aphid populations fairly well destroyed in some instances. *Cinara* also common on pines but apparently of little consequence. (McQueen). Also see CEIR 13(48):1365 and 13(50):1395. OHIO - Eggs of undetermined species ranged moderate to heavy on white pine at a State park near Mount Gilead, Morrow County, central area. Many dead females observed at front of each row of eggs on individual needles. (Lyon).

PINE BARK APHID (*Pineus strobi*) - NORTH CAROLINA - Infesting 15 white pines at a location in Davidson County; one tree killed. (Tucker, Mount).

A BLASTOBASID MOTH (*Holocera iceryaeella*) - CALIFORNIA - Larvae and pupae of this species and *Rhyacionia* sp., probably *pasadenana*, heavy in Monterey pine in Richmond, Contra Costa County; trees considerably weakened. Populations medium in pine in Turlock, Stanislaus County. Larvae heavy in twig tips of Monterey pines in Eureka, Humboldt County. (Cal. Coop. Rpt.).

APHIDS - MARYLAND - *Lachnus salignus* heavy on willow at a location in Baltimore. (U. Md., Ent. Dept.). CALIFORNIA - *Prociphilus fraxinifolii* heavy on ash trees in a local area in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - OHIO - A major pest of chrysanthemums and snapdragons throughout most greenhouses in State; infestations heavy in many greenhouses, while others are relatively free of pest. Timely control applications and alternating use of different insecticides have temporarily checked severe outbreaks. Reinfestation unavoidable, as cuttings often purchased from other infested greenhouses. (Lyon).

COCCIDS - CALIFORNIA - Ferrisia virgata light to heavy on hollyhock, zinnia, lantana, Morus sp., canna, Bermuda grass, verbena and Ipomoea crassicaulis in several yards in Brawley, Imperial County. This mealybug under eradication status in State. Several infestations have been eradicated in different parts of State in past years. Diaspis echinocacti heavy on Opuntia sp. in cactus garden in Lodi, San Joaquin County. Spilococcus cactearum medium on Astrophytum sp. nursery plants in Holtville, Imperial County. (Cal. Coop. Rpt.). FLORIDA - Ceroplastes ceriferus infested Podocarpus maki at Samsula, Volusia County. (Pott, Dec. 3). Florinia theae present on leaves of Camellia sp. at Jacksonville, Duval County. (King, Dec. 5). Ceroplastes floridensis moderate on stems and leaves of Ixora chinensis at Winter Haven, Polk County. (Norton, Peterson; Dec. 4). NORTH CAROLINA - Aspidiotus perniciosus heavy on twigs of flowering crab apple at a location in Caldwell County. (Mount). VIRGINIA - Pseudaulacaspis pentagona heavy on evergreens and cherry trees at a location in Cana, Carroll County. (Amos, Tabor; Dec. 5).

A WHITEFLY (Tetraleurodes sp., probably acaciae) - CALIFORNIA - Nymphs heavy on leaves of albizzia in Corning, Tehama County. (Cal. Coop. Rpt.).

TOBACCO BUDWORM (Heliothis virescens) - ARIZONA - Larvae feeding on dichondra lawns in Coolidge area, Pinal County; some damage reported. (Ariz. Coop. Sur.). CALIFORNIA - Medium on geranium plants in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

A TWIG GIRDLER (Periploca ceanothiella) - CALIFORNIA - Larvae heavy in twigs of ceanothus in Oakland, Alameda County. (Cal. Coop. Rpt.).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Larvae light on Euonymus japonicus aureo-variegatus in San Francisco, San Francisco County; causing serious damage to Juniperus conferta in Fresno, Fresno County. (Cal. Coop. Rpt.).

A SEAGRAPE BORER (Hexeris enhydris) - FLORIDA - Infestations scattered and moderate on seagrape (Coccoloba uvifera) at Merritt Island, Brevard County. (Levan, Nov. 22).

A GALL MIDGE (Parallelodiplosis florida) - ALABAMA - Common on ornamental live oak in Lowndes County, with at least 50 percent of leaves affected. (Mathews).

WALNUT BLISTER MITE (Aceria erinea) - CALIFORNIA - Medium on seedling English walnut nursery stock in San Luis Obispo, San Luis Obispo County. (Cal. Coop. Rpt.).

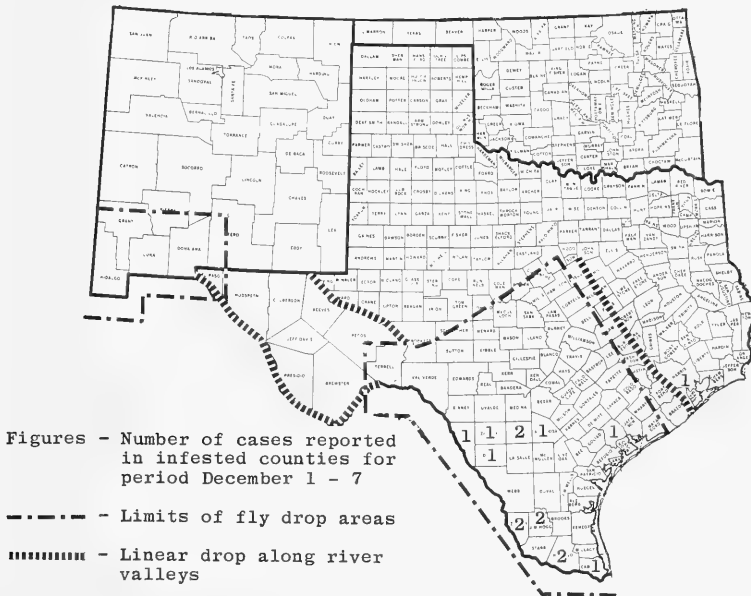
SPIDER MITES - GEORGIA - Unspecified species heavy on pyracantha in De Kalb County. (Shirley, Vanderford; Dec. 4). CALIFORNIA - Oligonychus coniferarum medium on Juniperus sp. nursery stock in Valley Home, Stanislaus County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - TEXAS - Culex salinarius most common species in Jefferson County during November. Aedes sollicitans also present at intervals; some Psorophora confinnis observed. (Jeff. Co. Mosq. Rpt.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period December 1 - 7, only 14 cases of screw-worm identified in the 5 southwestern States in the eradication area. All 14 cases found in southern TEXAS. This is lowest number of cases reported since early spring. Cooler temperatures are occurring in the area; however, in most of the region, temperatures have not reached lows sufficient to kill screw-worms. Screw-worm activity has been hindered and pupation period prolonged. No cases of screw-worm were reported from New Mexico. A total of 146,328,650 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period December 1 - 7

- - - - - Limits of fly drop areas
- Linear drop along river valleys

COMMON CATTLE GRUB (Hypoderma lineatum) - GEORGIA - Very light on cattle in Spalding County. (Roberts, Dec. 2).

LONG-NOSED CATTLE LOUSE (Linognathus vituli) - GEORGIA - This species and Solenopotes capillatus ranged moderate to heavy on beef cattle in Spalding County. (Roberts, Dec. 2).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Light to moderate infestations reported from Garvin, Cotton and Bryan Counties. (Okla. Coop. Sur.).

BEDBUG (Cimex lectularius) - ARIZONA - Large infestation found in building in Phoenix, Maricopa County. (Ariz. Coop. Sur.).

CAT FLEA (Ctenocephalides felis) - OKLAHOMA - Continues to cause some concern to homeowners in Stillwater area, Payne County. (Okla. Coop. Sur.).

TROPICAL RAT MITE (Ornithonyssus bacoti) - CALIFORNIA - Specimens taken from resident in home in La Mesa, San Diego County. (Cal. Coop. Rpt.).

BROWN DOG TICK (Rhipicephalus sanguineus) - MARYLAND - Engorged adults found in home at College Park, Prince Georges County. (U. Md., Ent. Dept.).

A BROWN SPIDER (Loxosceles reclusa) - OKLAHOMA - Occurred in several homes in Stillwater area, Payne County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

INDIAN-MEAL MOTH (Plodia interpunctella) - OKLAHOMA - Present in variety of stored products in several homes in Stillwater area, Payne County. (Okla. Coop. Sur.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - TEXAS - Being reported from homes in Harris County. (Fix).

CIGARETTE BEETLE (Lasioderma serricorne) - MARYLAND - Occurring in homes in Baltimore and Talbot Counties. (U. Md., Ent. Dept.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - VIRGINIA - Adults numerous in home in Culpeper County. (Tarpley, Heltzel; Dec. 7).

FACE FLY (Musca autumnalis) - NEBRASKA - Overwintering population present for second year in guest room on ninth floor of Nebraska Center for Continuing Education on College of Agriculture campus in Lincoln, Lancaster County. (Bergman).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - A nuisance at a location in Ellicott City, Howard County. (U. Md., Ent. Dept.). UTAH - Entering homes at North Logan, Weber County. (Knowlton).

A GRASS BUG (Arhyssus scutatus) - CALIFORNIA - Medium population entering residence in Kelseyville, Lake County. Grass bugs continue a yard and household nuisance in many locations. (Cal. Coop. Rpt.).

CLOVER MITE (Bryobia praetiosa) - MARYLAND - Entering homes and causing nuisance in Montgomery, Baltimore, Prince Georges and Talbot Counties. (U. Md., Ent. Dept.). NORTH CAROLINA - A nuisance at a Rutherford County location. (Wilson, Robertson).

GERMAN COCKROACH (Blattella germanica) - NEBRASKA - Heavy infestation present in home in Lincoln, Lancaster County. (Bergman).

SUBTERRANEAN TERMITES - UTAH - Seriously infested another home in Salt Lake City, Salt Lake County; woodwork breaking through. (Knowlton).

STORED-PRODUCT INSECTS

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - In Monroe County, adults collected at rate of 98 per night with 2 blacklight traps; temperature held at 60° F. In another storage in same county, adults collected at rate of 74 per night with one blacklight trap; temperature held at 55° F. in this storage. (Wells, Laser).

LARDER BEETLE (*Dermestes lardarius*) - MARYLAND - Adults infesting country hams at Damascus, Montgomery County. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

PREDATORS - OKLAHOMA - Several species of lady beetles, *Chrysopa* spp. and *Nabis* spp. continue active in Kiowa-Jackson County area. Field observations made prior to onset of icy conditions in State. (Okla. Coop. Sur.).

MISCELLANEOUS INSECTS

LESSER MEALWORM (*Alphitobius diaperinus*) - NORTH CAROLINA - A nuisance in litter in several poultry houses in Cleveland County. Det. by D. A. Mount. (Martin).

PUMPKIN CATERPILLAR (*Diaphania indica*) - FLORIDA - Adult taken in Steiner trap in grapefruit tree at Sebring, Highlands County, December 6. (Morris).

CITRUS WHITEFLY (*Dialeurodes citri*) - CALIFORNIA - Survey added 3 new city blocks to area to be sprayed. Eradication treatment began November 18, with approximately 1,500 city blocks to receive second application this year. Adult whiteflies present in known infested area past mid-November. (Cal. Coop. Rpt.).

JAPANESE BEETLE (*Popillia japonica*) - OHIO - Total of 401 beetles trapped in Preble County (southwest) during period July 5 to August 7, 1963. Beetles found distributed over much wider area than in 1962. Heaviest numbers trapped in cemeteries and along grassy roadsides around New Paris, north of U.S. Route 40. (Wolfe).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Found in new township in Polk County near Mulberry, 20-30-24. Det. by W. Breidenbach. (Richards, Dec. 3).

RING-LEGGED EARWIG (*Euborellia annulipes*) - FLORIDA - Infested earthworm beds at Osteen, Volusia County, November 29. (Mrs. R. Lawson).

SPRINGTAILS - ALABAMA - Reported in supply of spring water in Blount County and as plentiful in rain puddles in gardens and lawns throughout central area. (McCall et al.).

A TADPOLE SHRIMP (*Triops longicaudatus*) - CALIFORNIA - Light in water in El Centro, Imperial County. This species a considerable problem in rice fields in northern part of State. (Cal. Coop. Rpt.).

CORRECTIONS

CEIR 13(48):DETECTION and page 1369 - WHITE-FRINGED BEETLES - Marion County, Tennessee, should read Madison County, Tennessee.

CEIR 13(49):1376 - A SKIPPER (*Erynnis tristis*) should read (*Erynnis tristis*).

Boll Weevil Hibernation Surveys in North and South Carolina, Tennessee, Mississippi, Louisiana and Texas - Fall 1963

The fall collection of surface ground (woods) trash samples (two square yards per sample) has been completed in 6 Southern States by State and Federal agencies to determine the number of boll weevil (*Anthonomus grandis*) adults that went into hibernation. The same areas were sampled as in the fall of 1962, and wherever possible, the samples were taken from locations that could be sampled again next spring. A total of 3 samples was collected at each location in the Carolinas, Mississippi, Louisiana and Texas; 20 samples were taken in McNairy County, Tennessee. In North and South Carolina, 30 locations were sampled, with the number of counties per area from which samples were taken varying from 3 to 6. In Mississippi, 90 samples were taken with either 7 or 8 locations being sampled in each of the 4 areas. A total of 40 locations was sampled in northeastern Louisiana; 10 each in East Carroll and Tensas Parishes and 20 in Madison Parish. In Texas, 75 samples were taken, with either 6 or 7 locations being sampled in each of 4 counties.

Average counts (live weevils per acre) exceeded those of 1962 only in area 1 of the Carolinas (south central South Carolina) and in the tri-parish area of north-eastern Louisiana. In all other areas sampled, average counts were lower than in the fall of 1962.

In Florence County, South Carolina, the number of weevils per acre (11,406) is 1.8 times the average for the 21 years that such examinations have been made. This is the fourth consecutive year in which over 10,000 weevils per acre have been found in the fall examinations in this county.

McNairy County, Tennessee, was chosen again this year for the survey in that State because it usually represents the heaviest infestations found in the southern tier of counties. The other southern counties usually support only slightly lower infestations than that of McNairy County. The number of weevils per acre was 1,089 compared with 3,633 in 1962, 3,025 in 1961, 2,622 in 1960, 1,882 in 1959, 1,214 in 1958, 2,365 in 1957, 933 in 1956, 902 in 1955, 311 in 1954, 31 in 1953, 2,259 in 1952 and 239 in 1951.

The 1963 State average of 3,010 in Mississippi was less than half the average for the past 5 years, 7,526 weevils per acre.

The average number of boll weevils per acre in the tri-parish area of northeast Louisiana was 7,317. The average by parish was 6,295 in Madison, 10,249 in East Carroll and 5,407 in Tensas. During the past 9 falls that these records have been made in the tri-parish area, the number of weevils per acre has ranged from 2,622 to 13,433 and averaged 6,044 in Madison Parish; 5,165 to 13,235 and averaged 8,746 in East Carroll Parish; and 0 to 17,593 and averaged 7,043 in Tensas Parish. During the past 28 years that similar records have been made in Madison Parish, there have been only 3 years in which a larger number of weevils has been found in ground trash in the fall than the 6,295 found in 1963. Field conditions were equally favorable, or perhaps even better, this fall for collecting ground trash samples in northeast Louisiana than any fall during the 28 years that these studies have been in progress.

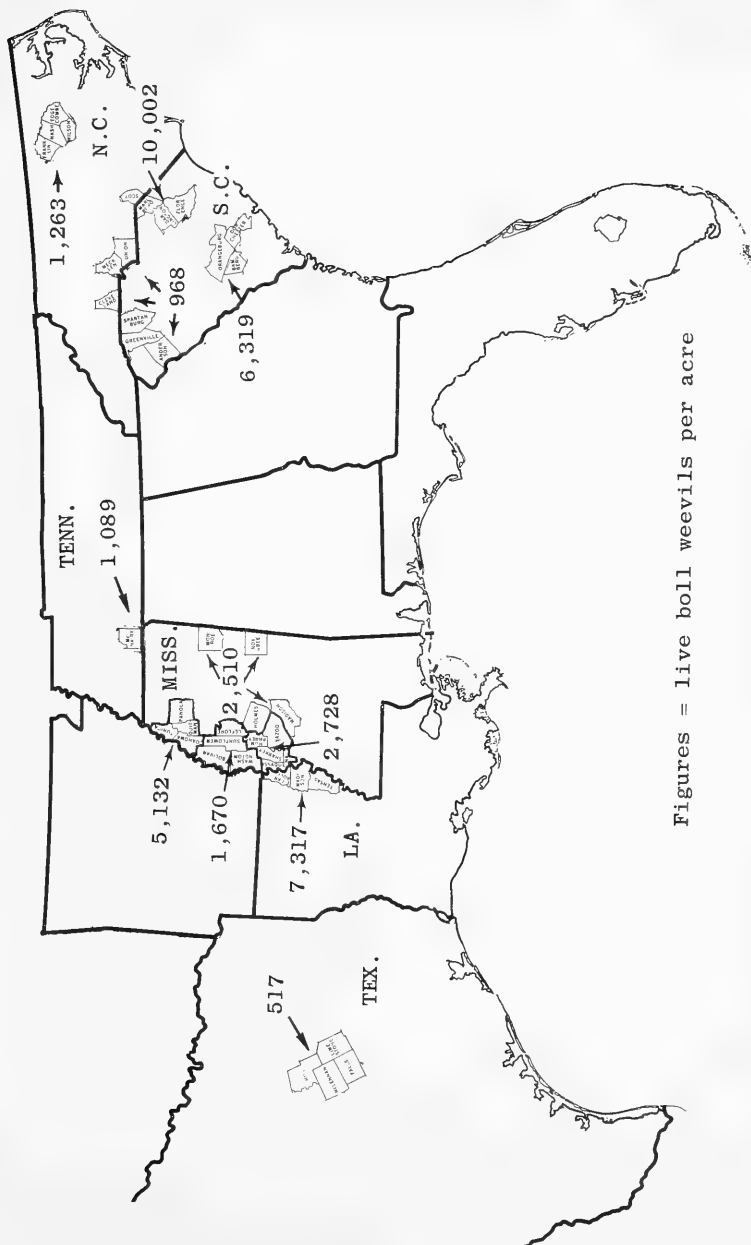
The area average of 517 boll weevils per acre in the fall of 1963 in central Texas compares with averages of 1,781 in 1962, 4,114 in 1961, 4,501 in 1960 and 6,631 in 1959. The decrease in numbers entering hibernation in 1963 was due primarily to the low numbers present in the spring to infest the 1963 crop; the very hot, dry growing season; and early maturity, harvest and stalk destruction. (A. R. Hopkins, H. M. Taft, J. H. Locke, T. R. Pfrimmer, G. L. Smith, C. B. Cowan).

See Table and Map on following two pages.

BOLL WEEVIL HIBERNATION SURVEYS - FALL 1963

| Area (County and State) | Number of Weevils Per Acre | |
|---|-------------------------------|--------|
| | 1962 | 1963 |
| <u>NORTH AND SOUTH CAROLINA</u> | | |
| South Central South Carolina (Orangeburg, Bamberg, Dorchester Counties (area 1)). | 4,249 | 6,319 |
| Coastal Plain of South and North Carolina (Florence, Darlington and Marlboro Counties, S.C.; Scotland County, N.C. (area 2)). | 12,207 | 10,002 |
| Piedmont of South and North Carolina (Anderson, Greenville and Spartanburg Counties, S.C.; Mecklenburg, Cleveland and Union Counties, N.C. (area 3)). | 8,631 | 968 |
| North Central North Carolina (Nash, Wilson, Franklin and Edgecombe Counties (area 4)). | 5,136 | 1,263 |
| <u>TENNESSEE</u> | | |
| McNairy County | 3,633 | 1,089 |
| <u>MISSISSIPPI</u> | | |
| Lower Delta (Sharkey, Issaquena, Yazoo and Humphreys Counties (area 1)). | 2,863 | 2,728 |
| Central Delta (Washington, Bolivar, Sunflower and Leflore Counties (area 2)). | 5,377 | 1,670 |
| North Delta (Coahoma, Tunica, Quitman and Panola Counties (area 3)). | 13,761 | 5,132 |
| Hill Section (Holmes, Madison, Noxubee and Monroe Counties (area 4)). | 2,850 | 2,510 |
| <u>LOUISIANA</u> | | |
| Northeastern (East Carroll, Madison and Tensas Parishes) | 4,035 | 7,317 |
| <u>TEXAS</u> | | |
| Central (Falls, Hill, Limestone and McLennan Counties) | 1,781 | 517 |

BOLL WEEVIL HIBERNATION SURVEYS - FALL 1963



Figures = live boll weevils per acre

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 696th meeting of the Hawaiian Entomological Society held December 9, 1963.

A SUBTERRANEAN TERMITE (Coptotermes formosanus Shiraki) - A queen was found December 2 by Donald Yara. The carton nest of about 2 cubic feet of material was in the false bottom of a closet directly on the concrete slab near the bathroom. No tunneling was found leading to the ground. In dissecting away parts of the nest in order to remove the queen, hundreds of soldiers and small nymphs were observed but no eggs. There were many thousands of workers present. The queen and a large part of the colony are being held in a crisper dish in the insectary. (H. B. Bess, Univ. of Hawaii).

A PARASITIC TACHINA FLY (Trichopoda pennipes F.) - Eggs of this parasite found on a scutellerid bug (Coleotichus blackburniae White) which was collected on November 3, 1963, at the Tantalus park, Oahu. T. pennipes was introduced for the control of the southern green stink bug (Nezara viridula (L.)). (B. D. Perkins, Univ. of Hawaii).

A REDUVID BUG (Polididus armatissimus Stål) - Collected on 6 to 8 occasions from different areas of Oahu. Specimens present in collections of insects made by general entomology students at the University of Hawaii. Species now apparently widespread throughout the island. (J. W. Beardsley, Univ. of Hawaii).

A DIASPID SCALE INSECT (Clavaspis herculeana (Doane & Hadden)) - Found on plumeria cutting during predeparture baggage inspection on May 18 by R. Wakamiya. Det. by R. F. Wilkey. This is a new State record. (E. S. Shiroma, PQ, ARS, USDA).

SOUTHERN GREEN STINK BUG (Nezara viridula (L.)) - Found attacking growing tips of Guiana-chestnut pachira (Pachira aquatica); a new host record for species. (W. C. Mitchell).

Survey to Determine the Oviposition and Hatching Records of the Alfalfa Weevil in Massachusetts During the Fall of 1963(1)

F. R. Shaw (2)

During the 1963 season, an alfalfa field in New Marlboro, Massachusetts, was found to be heavily infested by the alfalfa weevil (*Hypera postica* (Gyll.)). This field had received no insecticide treatment and was not cut after the middle of August. Hence it presented a good opportunity to obtain information on the fall activities of the weevil.

Adult weevil populations were low during the period from August 15 to September 5 after which they began to increase. In early October, an examination of fifty stems for oviposition was begun which was continued until November 10. The stems were randomly collected, brought to the laboratory and carefully examined for oviposition punctures. When a puncture was found, it was opened and the cavity below examined for eggs. The data obtained are summarized in Table I.

It is of interest that newly hatched alfalfa weevil larvae were observed as late as October 31. On November 10, one lot of eggs was observed containing mature embryos but no newly hatched larvae were found; also newly laid eggs and recently emerged adults were found on this same date.

It is recognized that the month of October was unusually warm for Massachusetts. No doubt this influenced the oviposition and other activities of the alfalfa weevil.

Table I. Number of alfalfa weevil oviposition punctures and egg count records per 50 alfalfa stems. New Marlboro, Massachusetts, 1963

| Date of collection | No. of stems with punctures | Total no. of punctures | No. punctures from which eggs had hatched | No. punctures empty (no eggs found) | Max. no. eggs per puncture | Min. no. eggs per puncture (3) | Avg. no. eggs per puncture (3) |
|--------------------|-----------------------------|------------------------|---|-------------------------------------|----------------------------|--------------------------------|--------------------------------|
| Oct. 2 | 32 | 45 | 17 | 3 | 15 | 2 | 10.2 |
| Oct. 17 | 26 | 38 | 17 | 5 | 8 | 3 | 5.6 |
| Oct. 24 | 28 | 37 | 15 | 8 | 12 | 1 | 5.8 |
| Oct. 31 | 36 | 63 | 36 | 12 | 14 | 2 | 6.2 |
| Nov. 10 | 39 | 69 | 36 | 12 | 23 | 2 | 7.2 |

1. Contribution 1362 from the Department of Entomology and Plant Pathology and from the Massachusetts Agricultural Experiment Station.

2. Professor of Entomology and Beekeeping, University of Massachusetts.

3. Based on punctures containing eggs.

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

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on September 30, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, and include any of special interest from recent months that were not previously reported.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) one time each in baggage at Miami, Florida, and at Laredo, Texas.

A WHITEFLY (Aleyrodes brassicae Wlk.) (cabbage pest of Europe) in ship's stores at New York, New York.

MEXICAN FRUIT FLY (Anastrepha ludens (Lw.)) in baggage in orange fruit at San Pedro, California.

A SPRUCE CONE MOTH (Laspeyresia strobilella (L.)) (of importance in Europe) in ship's cargo of spruce cones at Baltimore, Maryland. This is first interception reported in cargo and first interception since 1960.

CABBAGE MOTH (Mamestra brassicae (L.)) 4 times in stores; one time each at San Juan, Puerto Rico, and Chicago, Illinois; and 2 times at New York, New York.

A STENOMID MOTH (Stenoma catenifer (Wlsm.)) 7 times; 5 times in baggage - 2 times at New Orleans, Louisiana; 2 times at Eagle Pass, Texas; and one time at Miami, Florida; 1 time in cargo (prohibited) at New York, New York; 1 time in ship's quarters at New Orleans, Louisiana.

COFFEE BERRY BORER (Stephanoderes hampei Ferr.) (serious pest of coffee in Brazil, Africa, Indonesia, etc.) in green coffee found in ship's quarters at Puerto Rico.

A THRIPS (Taeniothrips eucharii (Whetzel)) (a pest of Lycoris bulbs in Japan) twice in cargo of Lycoris bulb sprouts at Seattle, Washington.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 3 times in air cargo at Dover, Delaware; 4 times in ship's cargo; 3 times at New Orleans, Louisiana, and once at Mobile, Alabama.

KHAPRA BEETLE (Trogoderma granarium Everts) (or probably that species) 27 times (3 times in ships' holds, 3 times in stores, and 21 times in cargoes of green peas, guar gum, pistachio nuts, gum karaya, burlap bagging, cumin seed, gum arabic, gum hashab, gum tragacanth and polished rice); 4 times at San Juan, Puerto Rico; 14 times at New York, New York; 1 time at New Orleans, Louisiana; 1 time at Philadelphia, Pennsylvania; 1 time at Savannah, Georgia; 5 times at Charleston, South Carolina; 1 time at Houston, Texas.

GOLDEN NEMATODE (Heterodera rostochiensis Woll.) 6 times in planes' baggage; 5 times at New York International Airport, New York, and 1 time at San Francisco, California.

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AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

REPORT OF FIELD OPERATIONS

The Cooperating Elements in this report are selected field and office personnel who have participated in the surveys and completed this report in cooperation with the Supervisory Office General and under their personal responsibility. The accuracy of the material is guaranteed by the Division Office General and the Cooperating Elements who are personally responsible for the accuracy of the material.

Reports and materials submitted to the Laboratory should be marked as:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRAIN APHIDS appear to be generally light, and no important buildups reported. WINTER GRAIN MITE controls necessary in Falls County, Texas. (p. 1421).

Decrease in CITRUS MITE populations reported on Florida citrus, although some important infestations still exist. Most SCALE INSECTS decreasing, but Unaspis citri increasing and spreading in certain areas of Lake and Orange Counties. Above average level of WHITEFLY infestations continue on Florida citrus. (p. 1422-23).

GREEN PEACH APHID beginning to increase on sugar beets in Maricopa County, Arizona; few fields with heavier infestation received controls. (p. 1423).

DETECTION

WHITE-FRINGED BEETLES collected for first time in Lancaster County, South Carolina, and a PINK CITRUS RUST MITE (Aculus pelekassi) found for first time in Pasco County, Florida. (p. 1426).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1425).

CORRECTIONS

See page 1426.

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

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-DECEMBER 1963 TO MID-JANUARY 1964

The Weather Bureau's 30-day outlook for the period from mid-December to mid-January calls for temperatures to average below seasonal normals over the eastern half of the Nation, with greatest departures in the Ohio and Tennessee Valleys and Middle Atlantic States. Average temperatures are expected to be above normal over the Plateau States and near normal in the remainder of the West. Precipitation is predicted to exceed normal along the Gulf Coast and also over the Pacific Northwest and Northern Plains. Subnormal amounts are anticipated over the remainder of the Nation, except for near normal in New England, the Great Lakes, the Central Plains, and southern portions of the Atlantic and Pacific Coasts.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING DECEMBER 23

High pressure and low temperatures prevailed over the eastern two-thirds of the Nation during most of the week. Numerous stations registered their lowest temperatures of the season. In NORTH CAROLINA, it was one of the coldest weeks in recent years. The temperature at Tampa, Florida, dropped to 31° Thursday morning. At International Falls, Minnesota, the maximum Thursday was 14° below zero. Skies were mostly clear in the arctic air mass that controlled the weather during the first part of the week. Frequent snow flurries occurred from the central Great Plains eastward. The arctic air, moving across the relatively warm waters of the Great Lakes, piled up narrow but deep snow belts along the eastern shores of the Lakes. Snow at Muskegon, Michigan, accumulated to a depth of 18 inches by Monday evening, December 16.

Temperatures moderated somewhat as the huge mound of cold air moved eastward. The temperature at Evansville, Indiana, rose to above freezing Tuesday afternoon before a second mass of cold air moved down through mid-America. Muskegon, Michigan, received an additional 6 inches of snow by Tuesday evening and the snow continued to fall, accumulating to 27 inches by Monday, December 23.

While unseasonably cold weather continued over the vast area from the Rocky Mountains to the Atlantic Ocean, the weather west of the Rockies was comparatively mild. Afternoon temperatures in the far southwest exceeded 60° on most afternoons. Generous rains fell in the extreme northwest where some stations received rain every day.

Snow fell during the weekend over most of the Rocky Mountains and Great Plains. Memphis, Tennessee, received more than a foot of snow. The Weather Bureau issued heavy snow and glaze warnings to help stockmen protect their animals and for travelers on the highways. Central Arkansas received one of the heaviest snows of the century. Ice, with some snow mixed, became 2 inches thick at Vicksburg, Mississippi. The ice in Mississippi caused considerable damage to timber and to telephone and power lines, and made highway travel extremely hazardous. The temperature at Memphis, Tennessee, dropped to 13° below zero on Tuesday morning, December 24, setting a new alltime record for that station. The prospects for a white Christmas were certain for most of the eastern two-thirds of the Nation. For many southern locations, it would be the first white Christmas in many years.

At the end of the week, gales swept the Washington coast. Rain spread inland and snow continued over the northern Rockies. The big storm in the east moved toward New York and New England.

Temperatures for the week averaged slightly above normal over western Washington, most of Oregon and Nevada, and parts of California. Elsewhere, temperatures averaged below normal. Most of the area east of the Continental Divide averaged 10° or more below normal. Temperatures averaged 20° or more below normal over much of the northern and central Great Plains.

Precipitation for the 7-day period ending at midnight Sunday exceeded 1 inch in the extreme Northwest and over parts of Louisiana and Mississippi, and south-central Florida. Wide areas from California to New England received less than 0.25 inch during the period. (Summary supplied by U.S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

GREENBUG (Schizaphis graminum) - NEW MEXICO - Light, spotted infestations noted in barley in Chaves and northern Eddy Counties; ranged 2-6 per linear foot in fields checked. (N. M. Coop. Rpt.). OKLAHOMA - Numbers light, averaged 2 per linear foot of row in field of oats checked in Marshall County. Isolated fields of lush wheat and barley in Garfield County had 30-40 per linear foot of row. Parasitism evidence in several fields. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Ranged 15-20 per linear foot on wheat and barley in Garfield County. (Okla. Coop. Sur.). ARKANSAS - Low numbers, 25-40 per 100 sweeps, noted in small grain in northwestern area. (Ark. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Generally light, ranged 6-20 per linear foot in barley in Chaves and northern Eddy Counties. (N. M. Coop. Rpt.). OKLAHOMA - Light, averaged 4 per linear foot of row in oats surveyed in south central area. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Ranged 15-18 per linear foot of row in scattered wheat fields in Garfield County. (Okla. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - NEW MEXICO - Cold weather reduced populations in Dona Ana County alfalfa; spotted infestations found in several fields checked in southern Dona Ana County. Light to moderate in Eddy County alfalfa. (N. M. Coop. Rpt., Dec. 13). Moderately heavy in alfalfa near Roswell, Chaves County. (N. M. Coop. Rpt.). ARKANSAS - None found on legumes in northwestern area. (Ark. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Averaged 6 per 10 sweeps in alfalfa in Marshall County. (Okla. Coop. Sur.). ARKANSAS - Low numbers, 10-15 per linear foot, on alfalfa in northwestern area. Counts made in alfalfa where very high numbers existed before cold weather. Temperatures as low as 7° F. did not kill all aphids on December 16; low of 6° F. December 18 should reduce numbers further. (Ark. Ins. Sur.).

CHINCH BUG (Blissus leucopterus) - NEBRASKA - Fall surveys show adult infestations light to moderate in Dodge, Gage, Jefferson, Lancaster, Nuckolls, Saline, Saunders and Seward Counties. (Bell).

HESSIAN FLY (Phytophaga destructor) - MARYLAND - Puparia present in stems with some spotty killing of plants at Gambrills, Anne Arundel County. (U. Md., Ent. Dept., Dec. 9).

A BLISTER BEETLE (Meloe angusticollis) - GEORGIA - Moderate on rye and oats in Baldwin County. (Jordan, Dec. 10).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - MISSOURI - Percent girdled cornstalks 3.8 in Christian County, 0.8 in Dallas County, 0 in Douglas County, 2.4 in Howell County, 0.6 in Oregon County, 3.0 in Ozark County and 4.2 in Taney County. A total of 5 fields, 100 stalks per field, was checked in each county. (Munson, Nov. 30).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Controls necessary in Falls County. (Randolph).

FRUIT INSECTS

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Heavy on late Duarte plums in Auburn, Placer County. (Cal. Coop. Rpt.).

WALNUT SCALE (Aspidiotus juglansregiae) - CALIFORNIA - Medium on peach trees in Beaumont, Riverside County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - CALIFORNIA - Heavy on almond trees in Biggs, Butte County. (Cal. Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Examination of pecan husks in Coosa County reveals very high numbers entering hibernation. Generally reported in other parts of State. (Harris).

PECAN WEEVIL (*Curculio caryae*) - ALABAMA - Large pecan producer in Pike County reports considerable damage to nuts in orchard which had controls for insects and diseases; damage warrants search for suitable pre-hatch controls. (Wakefield, Buttram).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Biological Control Zone - Reported for the first time in Territory of Quintana Roo; infested citrus trees near Yucatan border. Parasites to be released. Total of 40,419 trees inspected on 192 properties in Tamaulipas; 1,046 trees on 34 properties infested. Parasite liberation necessary on 102 properties in 9 states and 1 territory. A parasitic platygasterid (*Amitus hesperidum*) and a parasitic eulophid (*Prospaltella opulenta*) captured in States of Michoacan, Veracruz and Nayarit and in Territory of Baja California; 27,800 parasites liberated in States of Tamaulipas and Sonora. Very high mortality of *A. hesperidum* during shipment noted. Chemical Control Zone - Inspections made of all citrus within mile radius of infestation found in October in Municipio Villa de Santiago, Nuevo Leon; results negative. Total of 127,719 host trees inspected on 1,037 properties in States of Sonora and Nuevo Leon negative. (PPC, Mex. Reg.; Nov. Rpt.).

A LEAF ROLLER MOTH (*Platynota stultana*) - ARIZONA - Larvae damaging citrus trees in Yuma County; small populations also found on citrus in Mesa-Tempe area of Maricopa County. (Ariz. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - MEXICO - Inspection of 3,692 traps 7,472 times negative in States of Chiapas, Yucatan, Veracruz, Tabasco, Oaxaca, Guerrero, Tamaulipas, Campeche, Colima, Hidalgo, Jalisco, Mexico, Puebla, Nuevo Leon, Sinaloa, Baja California and Sonora, and the Distrito Federal and Territory of Quintana Roo. (PPC Mex. Reg., Nov. Rpt.). FLORIDA - All quarantine restrictions removed at midnight November 26. Trapping operations reduced but will be maintained. (PPC South. Reg.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - Two specimens trapped in Baja California; female trapped November 15 at Canon La Piedrera on Tijuana-Ensenada highway and male on November 29 at Colonia Independencia. Total of 12,468 trees on 2,454 properties sprayed in Ensenada and Tijuana, Baja California; spraying completed at Ensenada. Traps installed at 50 locations in gardens and private residences at Nogales, Sonora. (PPC Mex. Reg., Nov. Rpt.).

Citrus Insect Situation in Florida - Mid-December - CITRUS RUST MITE (*Phyllocop-truta oleivora*) on leaves infested 75 percent of groves (norm 70 percent); 60 percent economic (norm 47 percent). On fruit, citrus rust mite infested 62 percent of groves (norm 65 percent); 43 percent economic (norm 43 percent). Population started to decrease but still at high level especially on leaves. Infestations heavier in groves damaged by last year's cold. Although decrease will continue, about 40 percent of groves will harbor important infestations. Highest districts Bartow, west coast, Brooksville, upper east coast and Gainesville. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 52 percent of groves (norm 30 percent); 24 percent economic (norm 12 percent). Population continued above average and at same level as year ago. Decrease expected in most areas except those currently high which are ridge, Bartow and Indian River districts. CITRUS RED MITE (*Panonychus citri*) infested 50 percent of groves (norm 55 percent); 15 percent economic (norm 24 percent). Decreasing trend will keep populations below average. Few scattered groves will have important infestations. Highest districts west coast and Brooksville. PURPLE SCALE (*Lepidosaphes beckii*) infested 86 percent of groves (norm 73 percent); 10 percent economic (norm 8 percent). GLOVER SCALE (*L. gloverii*) infested 68 percent of

groves (norm 30 percent); 15 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 71 percent of groves (norm 44 percent); 16 percent economic (norm 1 percent). YELLOW SCALE (Aonidiella citrina) infested 36 percent of groves (norm 11 percent); 7 percent economic (norm 1 percent). Above scales are decreasing. Although light and moderate infestation more numerous than average, very few groves have heavy infestations. Unaspis citri is increasing and spreading in certain areas of Lake and Orange Counties. Immature WHITEFLIES infest 84 percent of groves. Above average level will continue with about 12 percent of groves having moderate to heavy infestations. Spray Notes: Although mites have started to decrease and some species may be low, total mite population should be kept low. Spider mites and rust mites can severely injure trees in winter. Sprays for Unaspis citri can be applied where harvest residues not restrictive. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Populations beginning increase on sugar beets in Maricopa County. Averaged 80 per 100 sweeps. Few fields with heavier infestation received controls. (Ariz. Coop. Sur.).

BET LEAFHOPPER (Circulifer tenellus) - ARIZONA - Light forms observed in sugar beet fields of Maricopa County near Mesa; few dark forms also found. Averaged 17 per 100 sweeps. (Ariz. Coop. Sur.).

BET ARMYWORM (Spodoptera exigua) - ARIZONA - Larval counts in sugar beets grown for seed in Maricopa County average 5-8 per 100 plants; very little damage noted. (Ariz. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - ARIZONA - Decreases in populations found during past week in Yuma, Maricopa, and Pinal County lettuce fields; occasional heavy infestation still remains in scattered fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Light on 13 percent of 200 cabbage plants (Dec. 13); light to moderate on 10 percent of 200 cabbage plants (Dec. 19), at Sanford, Seminole County. (Desin). ARIZONA - Numbers decreasing on lettuce fields of Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - New infestations during November found in Crisp, Decatur, Echols, Lanier and Lowndes Counties, GEORGIA; collection in Crisp County first in 13 years in that county. Properties released from regulation in Thomas County; county now free of known infestations. In ALABAMA, 3 new properties found infested in Escambia County and 10 in Houston County; all other inspections negative. New infestations found in Simpson, Jefferson Davis, Perry and Lawrence Counties, MISSISSIPPI. In LOUISIANA, 71 new infestations found in known infested parishes with exception of one infestation in West Feliciana Parish. (PPC South. Reg., Nov. Rpt.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - Specimens collected in Union County, ARKANSAS, for first time this season; collections of gin trash completed. Specimens collected at Bienville Parish, LOUISIANA, for first time this season. Larvae recovered during lint-cleaner inspections in Caddo, De Soto, Evangeline, Natchitoches, Red River, Sabin and Webster Parishes and from gin trash in Bossier Parish. (PPC, South. Reg., Nov. Rpt.). OKLAHOMA - Collections of 12 lint cleaners made in Caddo, Comanche, Cotton and Tillman Counties. In Beckham, Custer, Dewey, Harmon and Washita Counties, 24 lint-cleaner inspections show 13 positive and 11 negative. Inspections in Roger Mills County negative. (Okla. Coop. Sur.).

A WEEVIL (*Anthonomus* sp.) - ARIZONA - Still found in cotton fields in Yuma County; many young larvae dead during past week. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) - NEW MEXICO - Old galls very abundant on blue spruce checked in Lincoln National Forest; new galls present but few in number. (N. M. Coop. Rpt., Dec. 13).

A LEAFHOPPER (*Cicadella* sp.) - FLORIDA - Caused economic damage to leather-leaf fern in nursery at Gainesville, Alachua County; numerous white spots resulted from feeding rendering fronds unsalable. Control recommendations requested. (Halbeck, Mead, Dec. 12).

STRIPED MEALYBUG (*Ferrisia virgata*) - CALIFORNIA - Survey continues in Brawley, Holtville and El Centro; infestation in Brawley now covers 26 city blocks. Results of surveys in other Imperial County cities negative. (Cal. Coop. Rpt.).

MEALYBUGS - CALIFORNIA - *Pseudococcus obscurus* and *Phenacoccus solani* medium on *Columnea* sp. nursery stock in Arcadia, Los Angeles County. *Phenacoccus solani* light on *Acanthus* sp. and medium on verbena in Brawley, Imperial County. (Cal. Coop. Rpt.). NEW MEXICO - Heavy on out-of-state shipments of house plants at stores in Albuquerque area, Bernalillo County. (N. M. Coop. Rpt., Dec. 13).

AN ARMORED SCALE (*Aspidiotus yuccae*) - CALIFORNIA - Infested ash trees in Brawley, Imperial County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - *Myzus persicae*, *Aphis gossypii* and *Acyrtosiphon solani* nymphs and adults noted on *Saxifraga* sp. in Santa Ana, Orange County. *Toxoptera aurantii* medium on camellia nursery stock in Yorba Linda, Orange County. *Eriosoma lanigerum* heavy on pyracantha stock locally in San Diego, San Diego County. (Cal. Coop. Rpt.). NEW MEXICO - *Cinara tujafilina* light to heavy on arborvitae in Albuquerque area, Bernalillo County. (N. M. Coop. Rpt.).

CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) - CALIFORNIA - All stages attacking Ficus plants locally in Ventura, Ventura County. (Cal. Coop. Rpt.).

OMNIVOROUS LOOPER (*Sabulodes caberata*) - CALIFORNIA - Medium on gardenia nursery stock in San Leandro, Alameda County. (Cal. Coop. Rpt.).

FULLER ROSE BEETLE (*Pantomorus godmani*) - CALIFORNIA - Adults heavy on azalea plants in Colma, San Mateo County; light on jacaranda in San Diego County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - CALIFORNIA - Heavy on nightshade nursery stock in Pala, San Diego County. (Cal. Coop. Rpt.).

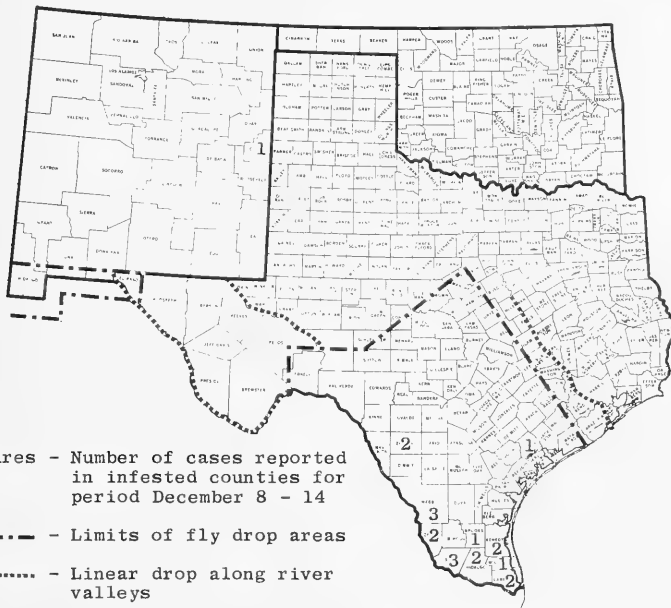
INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Averaged 6 per animal in herd of 46 yearling heifers checked in Marshall County; 30 head of long yearling steers averaged 17 (ranged 0-34) grubs per animal. (Okla. Coop. Sur.).

TICKS - TEXAS - Total of 26 lots by species received during November as follows: *Dermacentor nigrolineatus* 6; *D. variabilis* 5; *Amblyomma americanum* 1; *Ixodes scapularis* 6; *Otobius megnini* 7; and *Rhipicephalus sanguineus* 1. (Anim. Dis. Erad. Div., Anim. Insp. & Quar. Div.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period December 8 - 14, a total of 19 confirmed cases was reported from 10 counties in TEXAS; only 1 case was reported from NEW MEXICO. There were no new counties reporting screw-worm during the period. A total of 63,747,450 sterile flies was released in Texas, with 7,812,000 released in New Mexico. (Anim. Dis. Erad. Div.).



HOUSEHOLD AND STRUCTURAL INSECTS

CLUSTER FLY (Pollenia rudis) - OHIO - Extremely heavy particularly around South Charleston area, Clark County. Adults in large numbers especially in home attics, upper floors and other places offering shelter. Primarily old homes and buildings with spaces between windows and storm sashes have heaviest populations. Pest control operator in county estimates populations much heavier than in any previous year. (Lyon, Dec. 18).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - OHIO - Several new slab-type homes in southwestern area recently found infested; improper construction appears to be major factor in buildup. (Lyon, Dec. 17).

COCKROACHES - OHIO - Several restaurants in Cincinnati, Hamilton County, infested with Supella supellectilium; caused loss of some business. Blatta orientalis major species in Springfield vicinity, Clark County. Homeowners continue to call pest control operators concerning this species in basements and other damp areas. (Lyon).

STORED-PRODUCT INSECTS

INDIAN-MEAL MOTH (Plodia interpunctella) - OHIO - Light in ground corn at grain elevator in Springfield, Clark County. Negative at several other elevators checked in southwest area. (Lyon).

CONFUSED FLOUR BEETLE (Tribolium confusum) - OKLAHOMA - Ranged 1-89 per quart in stored grains checked at 4 locations in Marshall County. (Okla. Coop. Sur.).

LESSER GRAIN BORER (Rhyzopertha dominica) - OKLAHOMA - Averaged 3 and 4 per quart in 2 bins in Marshall County; none in other 2 bins checked. (Okla. Coop. Sur.).

GRANARY WEEVIL (Sitophilus granarius) - OKLAHOMA - Averaged 51 per quart of barley checked in Marshall County; none in 3 other locations in same area. (Okla. Coop. Sur.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - OKLAHOMA - Ranged 1-386 per quart in stored grains checked at 4 locations in Marshall County. (Okla. Coop. Sur.).

POTATO. TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Collection of adults in sizable numbers continues with blacklight traps in 2 potato storages in Monroe County. Temperatures held at 55° and 60° F. in rooms. (Wells, Laser).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Surveys in Union and Ashley Counties, ARKANSAS, revealed numerous small spot infestations which appeared after treatments. Surveys in TEXAS show approximately 700 acres of light infestations in Harris County and 350 acres on reinfestation in city of San Antonio, Bexar County. Newly infested areas found in most counties surveyed in MISSISSIPPI; most important infestation in Warren County on Port of Vicksburg property. Control treatments applied to small acreages in 17 counties and regulatory treatments made on nurseries throughout State. Aerial treatment completed in Calhoun, Gadsden and Liberty Counties, FLORIDA. Extensions of infested area found in several counties in GEORGIA; appraisal surveys made in most of the treatment area, with new mounds found in many treated blocks. Aerial treatments completed in Orangeburg, Jasper and Beaufort Counties, SOUTH CAROLINA. In NORTH CAROLINA, extensions found in Carteret County at Morehead City and Merrimon. (PPC South. Reg., Nov. Rpt.). ALABAMA - Mounds noted in Tallapoosa County where water table high. Winged forms noted on top of mounds. (McQueen).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Extensions of known infestations found in several counties in NORTH CAROLINA; largest extension near St. Pauls, Robeson County. Extensions also noted in SOUTH CAROLINA and collected for the first time in Lancaster County. Small extensions of infested area found in Crawford and Laurens Counties, GEORGIA; treatment applied to areas of Bulloch, Irwin, Jasper, Richmond, Thomas, Wilcox and Worth Counties. Infestation covering approximately 100 acres, mostly idle land, delimited in Roane County, TENNESSEE. (PPC South. Reg., Nov. Rpt.).

CORRECTIONS

CEIR 13(47):1349 - A SCARAB (Cotinis texana) - CALIFORNIA - delete note.

CEIR 13(50):1391, 1394 - CITRUS RUST MITE (Phyllocoptruta oleivora) - FLORIDA - Record for this species in Pasco County in error. Change to read: Aculus pelekassi scattered on 1,410 inspected citrus trees at Blanton, Pasco County, November 21. (Williams). This is the first record for this mite in Pasco County. (Fla. Coop. Sur.).

1963

513
823
C97
Ent

INSECT

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS REPORTS

The Cooperative Economic Insect Reports is submitted as a service to American agriculture. Its contents are compiled from information supplied by cooperating State Federal and industrial entomologists and by agricultural entomologists. In releasing this material the Division assumes no liability for accuracy and does not assume responsibility for accuracy of the material.

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Federal Center Building
Hyattsville, Maryland 20781

INTRODUCTION

The explanations that follow will aid in using the 1963 index.

1. Page numbers underlined represent references to the "Summary of Insect Conditions in the United States - 1962."
2. Page numbers in parentheses represent loss estimates.
3. The small ° that follows the common name of certain species in the index indicates that the name is not listed in the "Common Names of Insects" as approved by the Entomological Society of America. However, most of these common names are of foreign species, and the common names used in the Cooperative Economic Insect Report were taken from literature sources from a country or countries where the species occurs.
4. Complete cross indexing of page references of insects with common names is not used. The "Scientific Names" should be used to locate all page references, with the exception of those insects or groups of insects where the scientific names were not reported. In these cases, the page reference will be listed in the "Common Names."
5. A combination of both common and scientific name of an insect or pest may not appear on the page referenced, but one or the other will be present.
6. A list of corrections for volume 13, not previously published, is on pages and

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(*Colias eurytheme*)
Alfalfa looper
(*Autographa californica*)
Alfalfa plant bug
(*Delphacorus lineolatus*)
Alfalfa webworm
(*Loxostege commixtalis*)
Alfalfa weevil
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(*Psorosina hammondi*)
Apple maggot
(*Rhagoletis pomonella*)
Apple mealybug
(*Phenacoccus aceris*)
* Walley, P.E.S. 1960. Ent. Gaz.
11(4): 183-184.

Apple rust mite
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Bean aphid
(*Aphis fabae*)
Bean butterfly*
(*Lampides boeticus*)
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Black cherry aphid
(*Myzus cerasi*)
Black cherry fruit fly
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| | | |
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 Chrysanthemum leaf miner
 (*Phytomyza atricornis*)
 Cicada killer
 (*Sphecius speciosus*)
 Cicadas
 516, 695, 1055, 1117
 Cigarette beetle
 (*Lasioderma serricorne*)
 Citricola scale
 (*Coccus pseudomagnoliarum*)
 Citrus blackfly
 (*Aleurocanthus woglumi*)
 Citrus bud mite
 (*Aceria sheldoni*)
 Citrus flat mite
 (*Brevipalpus lewisii*)
 Citrus leaf miner
 (*Phyllocnistis citrella*)
 Citrus leaf miner, a
 79
 Citrus mealybug
 (*Pseudococcus citri*)
 Citrus mites
 518
 Citrus red mite
 (*Panonychus citri*)
 Citrus rust mite
 (*Phyllocoptera oleivora*)
 Citrus thrips
 (*Scirtothrips citri*)
 Citrus whitefly
 (*Dialeurodes citri*)
 Clay-backed cutworm
 (*Agrotis gladiaria*)
 Clear-winged grasshopper
 (*Camula pellicuda*)
 Clearwing moth
 207, 551
 Clematis blister beetle
 (*Epicauta cinerea*)
 Climbing cutworms
 578
 Clothes moths
 497, 732, 965
 Clouded sulphur
 (*Colias philodice*)
 Clover aphid
 (*Anuraphis bakeri*)
 Clover head caterpillar
 (*Grapholitha interstinctana*)
 Clover head weevil
 (*Hypera melles*)
 Clover leafhopper
 (*Aceratagallia sanguinolenta*)
 Clover leaf weevil
 (*Hypera punctata*)
 Clover looper
 (*Caenurgina crassiuscula*)
 Clover mite
 (*Bryobia praetiosa*)
 Clover mites
 (1202)
 Clover root curculio
 (*Sitona hispidula*)
 Clover root borer
 (*Hyalstinus obscurus*)
 Clover seed weevil
 (*Miccotrogus picirostris*)
 Clover stem borer
 (*Languria mozardi*)
 Clover weevils
 (1165)
 Cluster fly
 (*Pollenia rudis*)
 Cockcids
 365, 371, 467, 835, 868, 1055,
 1216, 1241, 1246, 1270, 1317,
 1335, 1350, 1365, 1376
 Cocklebur weevil
 (*Rhodobaenus tredecimpunctatus*)
 Cockroaches
 770, 81, 107, 143, 183, 306, 439,
 736, 1088, 1218
 Coconut mealybug
 (*Pseudococcus nipae*)
 Coconut scale
 (*Aspidiotus destructor*)
 Codling moth
 (*Carpocapsa pomonella*)
 Coffee bean weevil
 (*Aracecerus fasciculatus*)
 Coffee berry borer
 (*Stephanoderes hampei*)
 Coffee trunk borer, a
 81
 Colorado potato beetle
 (*Leptinotarsa decemlineata*)
 Columbian timber beetle
 (*Corthylus columbianus*)
 Columbine leaf miner
 (*Phytomyza minuscula*)
 Common cattle grub
 (*Hyopodermia lineatum*)
 Common malaria mosquito
 (*Anopheles quadrimaculatus*)
 Cone moth, a
 1296
 Confused flour beetle
 (*Tribolium confusum*)
 Conifer sawflies
 (*Neodiprion* spp.)
 Conifer sawflies
 525, 558, 617, 684, 761, 993,
 1022
 Convergent lady beetle
 (*Hippodamia convergens*)
 Cooley spruce gall aphid
 (*Chermes cooleyi*)
 Coreid bugs
 200
 Corn blotch leaf miner
 (*Agromyza parvicornis*)
 Corn earworm
 (*Heliothis zea*)
 Corn flea beetle
 (*Chaetocnema pulicaria*)
 Corn leaf aphid
 (*Rhopalosiphum maidis*)
 Corn planthopper
 (*Peregrinus maidis*)
 Corn root aphid
 (*Anuraphis maidiradicis*)
 Corn root webworm
 (*Crambus caliginosellus*)
 Corn rootworms
 (272), 736, (1036), (1129),
 (1382)
 Corn sap beetle
 (*Carpophilus dimidiatus*)
 Corn silk beetle
 (*Luperodes brunneus*)
 Cornfield ant
 (*Lasius alienus*)
 Cotton aphid
 (*Aphis gossypii*)
 Cotton fleahopper
 (*Psallus seriatus*)
 Cotton jassid
 (*Empoasca lybica*)
 Cotton leaf perforator
 (*Bucculatrix thurberiella*)
 Cotton leafworm
 (*Alabama argillacea*)
 Cotton square borer
 (*Strymon melinus*)
 Cotton stem borer
 (*Sphenotrocha gossypii*)
 Cottonseed bug
 (*Oxyarenus hyalinipennis*)
 Cottonwood root
 (*Plectrodera scalator*)
 Cottonwood dagger moth
 (*Acrionicta lepusculina*)
 Cottonwood leaf beetles
 (*Chrysomela scripta* complex)
 Cottony-cushion scale
 (*Icerya purchasi*)
 Cottony maple scale
 (*Pulvinaria innumabilis*)
 Cowpea aphid
 (*Aphis craccivora*)
 Cowpea curculio
 (*Chalcoedermus aeneus*)
 Cowpea weevil
 (*Callosobruchus maculatus*)
 Crab louse
 (*Phthirus pubis*)
 Cranberry fruitworm
 (*Acrobasis vaccinii*)
 Cranberry girdler
 (*Crambus topiarius*)
 Crane fly, a
 1030
 Crapemyrtle aphid
 (*Myczocalis kahawaluokalani*)
 Crested-marked lily aphid
 (*Neomyzus circumflexus*)
 Crested wheat bug, a
 (972)
 Crickets
 80, 81, 306, 672, 800, 814,
 846, 931, 965, 998, 1028,
 1060, 1087, 1121, 1157, (1202),
 1218, 1302
 Cross-striped cabbageworm
 (*Evergestis rimosalis*)
 Cuban-laurel thrips
 (*Gynaikothrips ficorum*)
 Cucumber beetles
 716, (1253)
 Curculionid, a
 866
 Curled rose sawfly
 (*Allantus cinctus*)
 Currant borer
 (*Ramosia tipuliformis*)
 Currant Fruit Fly
 (*Epochra canadensis*)
 Currant stem girdler
 (*Janus integer*)
 Cutworms
 73, 106, 115, 139, 166, 172,
 233, 239, 246, 253, 257, (272),
 (273), 279, 315, 316, 359, 364,
 398, 399, 411, 427, 432, 455,
 480, 489, 519, 523, 556, 577,
 583, 605, 611, 614, 645, 650,
 667, 680, 717, 719, 743, 792,
 819, 828, 851, 861, 920, 947,
 953, 956, 1010, 1113, (1164),
 (1199), 1220, 1238, 1249,
 (1253), (1278), (1382), (1387),
 (1388)
 Cyclamen mite
 (*Stenotarsonemus pallidus*)

D

Dampwood termites
309

Damsel bugs
(Nabis spp.)

Damsel bugs
471, 532, 590, 873

Dark mealworm
(Tenebrio obscurus)

Darkling beetles
305, 363, (1202)

Dark-eyed cutworm
(Euxoa messoria)

Deer flies
696, 732

Deodar weevil
(Pissodes nemorensis)

Dermostid beetles
368, 470, 931, 1121, 1378

Desert corn flea beetle
(Chaetocnema ectypa)

Desert ocust^a
(Schistocerca gregaria)

Desert spider mite
(Tetranychus desertorum)

Devastating grasshopper
(Melanoplus devastator)

Diamondback moth
(Plutella maculipennis)

Dictyospermum scale
(Chrysomphalus dictyospermi)

Differential grasshopper
(Melanoplus differentialis)

Dingy cutworm
(Feltia subgothica)

Dobsonfly
(Corydalus cornutus)

Dog flea
(Ctenocephalides canis)

Dog follicle mite
(Demodex canis)

Dogwood borer
(Thaumasphecia scitula)

Dogwood club-gall midge
(Mycodiplosis alternata)

Dogwood twig borer
(Oberea tripunctata)

Douglas-fir beetle
(Dendroctonus pseudotsugae)

Douglas-fir engraver
(Scolytus unispinosus)

Douglas-fir tussock moth
(Hemerocampa pseudotsugata)

Douglas-fir twig weevil
(Cylindrocopturus furnissi)

Drain flies
223, 258

Dried-fruit beetle
(Carpophilus hemipterus)

Dried-fruit moth
(Vitula edmandsae serratilineella)

Drone fly
(Eristalis tenax)

Drugstore beetle
(Stegobium paniceum)

Dryberry mite
(Phyllocoptes gracilis)

Drywood termites
309

Durra aphid^a
(Aphis sorghi)

Durra stalk borer^a
(Sesamia cretica)

Dusky birch sawfly
(Croesus latitarsus)

Dusky sap beetle
(Carpophilus lugubris)

E

Ear tick
(Otobius megnini)

Earwigs
46, 90, 223, 679, 965, 995,
(1202), 1218, 1249, 1337

Eastern lubber grasshopper
(Romalea microptera)

Eastern raspberry fruitworm
(Byturus rubi)

Eastern spruce gall aphid
(Chermes abietis)

Eastern subterranean termite
(Reticulitermes flavipes)

Eastern tent caterpillar
(Malacosoma americanum)

Eggplant flea beetle
(Epitrix fuscula)

Eggplant fruit borer^a
(Leucinodes orbonalis)

Egyptian cottonworm^a
(Prodenia litura)

Eight-spotted forester
(Allypia octomaculata)

Elm borer
(Saperda tridentata)

Elm calligrapha
(Calligrapha scalaris)

Elm casebearer
(Coleophora limosipennella)

Elm flea beetle
(Altica ulmi)

Elm lace bug
(Corythucha ulmi)

Elm leaf aphid
(Myzocallis ulmifolii)

Elm leaf beetle
(Galerucella xanthomeolaena)

Elm leaf miner
(Penusa ulmi)

Elm sawfly
(Cimbex americana)

Elm spanworm
(Ennomos subsignarius)

Elongate flea beetle
(Systema elongata)

Engelmann spruce beetle
(Dendroctonus engelmanni)

English grain aphid
(Macrosiphum avenae)

Ephydrid fly, an
494

Eriophyid mites
201, 380, 653, 687, 868, 1264,
1355

Ermine moth
(Hyponomeuta padella)

Euonymus scale
(Unaspis euonymi)

European apple sawfly
(Hoplocampa testudinea)

European carrot borer^a
(Phalonia zephyrana)

European chafer
(Amphimallon majalis)

European cherry fruit fly^a
(Rhagoletis cerasi)

European corn borer
(Ostrinia nubilalis)

European earwig
(Forficula auricularia)

European elm scale
(Gossyparia spuria)

European fruit lecanium
(Lecanium corni)

European grain moth
(Nemapogon granella)

European mantis
(Mantis religiosa)

European pine sawfly
(Neodiprion sertifer)

European pine shoot moth
(Rhyacionia buoliana)

European red mite
(Panonychus ulmi)

Eye-spotted bud moth
(Spilonota ocellana)

F

Face fly
(Musca autumnalis)

Fall armyworm
(Laphygma frugiperda)

Fall cankerworm
(Alsophila pometaria)

Fall webworm
(Hyphantria cunea)

False chinch bug
(Nysius ericae)

False codling moth^a
(Cryptophlebia leucotreta)

False katydid, a
322

False powder-post beetles
378

False wireworms
282, 316

Fern scale
(Pinnaspis aspidistrae)

Field crickets
(Gryllus spp.)

Fiery hunter
(Calosoma calidum)

Fig scale
(Lepidosaphes ficus)

Fig wax scale
(Ceroplastes rusci)

Filbertworm
(Melissocopus latiferreanus)

Fir engraver
(Scolytus ventralis)

Firebrat
(Thermobia domestica)

Fireworms
856

Flat bug, a
773

Flat grain beetle
(Cryptolestes pusillus)

Flateheaded apple tree borer
(Chrysobothris femorata)

Flateheaded fir borer
(Melanophila drummondii)

Flea beetles
78, 79, 152, 225, 263, (449),
488, 519, 527, 554, 556, 580,
582, 611, 615, 625, 645,
649, 650, 680, 716, 753, 790,
828, 861, 1015, 1024, (1038),
1080, 1081, (1099), (1162),
1263, (1382), (1387), (1388)

Fleashoppers
433, 459, (1102), (1257)

Fleas
77, 496, 838, 930, 1087, 1377

Fletcher scale
(Lecanium fletcheri)

Flies
563, (598), 732, 802, 829,
1058, 1120, (1200)

Floodwater mosquito
(Aedes sticticus)

Florida red scale
(Chrysomphalus aonidium)

Florida wax scale
(Ceroplastes floridensis)

Flower flies
222, 414, 440, 442, 471, 498,
532, 533, 839, 873, 1378

Flower thrips
(*Frankliniella tritici*)
 Forage looper
(*Caenurgina erecta*)
 Forbes scale
(*Aspidiotus forbesi*)
 Foreign grain beetle
(*Ahasverus advena*)
 Forest tent caterpillar
(*Malacosoma disstria*)
 Four-lined plant bug
(*Poecilocapsus lineatus*)
 Four-spotted spider mite
(*Tetranychus canadensis*)
 Fowl Tick
(*Argas persicus*)
 Frit fly
(*Oscinella frit*)
 Fruit-tree leaf roller
(*Archips argyrospilus*)
 Fruit-tree mite, a
(1097)
 Fulgorid planthoppers
620
 Fuller rose beetle
(*Pantomorus godmani*)
 Funghi gnats
64, 384, (1202)
 Furniture carpet beetle
(*Anthrenus flavipes*)

G

Gall midges
245, 551
 Gall mite, a
356
 Gall wasps
350
 Garden fleahopper
(*Halticus bracteatus*)
 Garden spiders
(1202)
 Garden springtail
(*Bourletiella hortensis*)
 Garden symphylan
(*Scutigerebella immaculata*)
 Garden webworm
(*Loxostege similalis*)
 Gelechiid moths
169
 German cockroach
(*Blattella germanica*)
 Giant bark aphid
(*Longistigma caryae*)
 Giant hornet
(*Vespa crabro germana*)
 Giant water bug
(*Lethocerus americanus*)
 Gladiolus thrips
(*Taeniothrips simplex*)
 Glassy cutworm
(*Crymodes devastator*)
 Globose scale
(*Lecanium prunastri*)
 Gloomy scale
(*Chrysomphalus tenebriocosus*)
 Glover scale
(*Lepidosaphes gloverii*)
 Golden nematode
(*Heterodera rostochiensis*)
 Colden oak scale
(*Asterolecanium variolosum*)
 Golden tortoise beetle
(*Metricona bicolor*)
 Golden-eye lacewing
(*Chrysopa oculata*)
 Gooseberry fruitworm
(*Zophodia convolutella*)
 Grain aphids
115, (503), (504), (505), (974)

Grain mite
(*Acarus siro*)
 Grain thrips
(*Limothrips cerealeum*)
 Granary weevil
(*Sitophilus granarius*)
 Granulate cutworm
(*Feltia subterranea*)
 Grape berry moth
(*Paralobesia viteana*)
 Grape cane gall maker
(*Ampeolopteryx sesostris*)
 Grape erineum mite
(*Eriophyes vitis*)
 Grape flea beetle
(*Aitica chalybea*)
 Grape leaf folder
(*Desmia funeralis*)
 Grape leaf skeletonizer
(*Harrisina americana*)
 Grape mealybug
(*Pseudococcus maritimus*)
 Grape phylloxera
(*Phylloxera vitifoliae*)
 Grape root borer
(*Vitacea polistiformis*)
 Grape rootworm
(*Pidia viticida*)
 Grape sawfly
(*Erythraspidites vitis*)
 Grape scale
(*Aspidiotus uvae*)
 Grape whitefly
(*Trialeurodes vittatus*)
 Grapevine aphid
(*Aphis ilinoensis*)
 Grasshoppers
78, 79, 80, 81, 125, 126, 127,
128, 129, 202, 211, 216, 229,
241, 243, 379, 393, 427, (744),
(745), (749), (450), 458, 483,
(503), (504), (505), (506),
509, 541, 550, 573, (592), (593),
(594), (595), (596), 601, 633,
651, 665, 683, 701, 717, 720,
741, 779, (810), 813, 845, 880,
901, 941, (972), (974), 977,
1005, 1017, (1035), (1038),
1041, 1073, 1096, 1110, 1121,
(1125), 1141, 1143, 1145, 1176,
(1196), 1205, 1239, 1241, 1242,
1264, 1291, 1296, 1312, 1316,
1374, (1384), (1385), (1386),
(1387), (1388),

Grass thrips
(*Anaphothrips obscurus*)
 Gray garden slug
(*Deroceras reticulatum*)
 Gray sugarcane mealybug
(*Pseudococcus boninensis*)
 Great Basin tent caterpillar
(*Malacosoma fragile*)
 Great Basin wireworm
(*Ctenicera pruinina*)
 Greater date moth
(*Areniplexa sabella*)
 Greater wax moth
(*Galleria mellonella*)
 Greedy scale
(*Aspidiotus camelliae*)
 Green cloverworm
(*Plathypena scabra*)
 Green fruitworm
(*Lithophane antennata*)
 Green June beetle
(*Cotinis nitida*)
 Green lacewings
624, 932, 965
 Green peach aphid
(*Myzus persicae*)
 Green scale
(*Coccus viridis*)
 Green shield scale
(*Pulvinaria psidii*)

Green stink bug
(*Acrosternum hilare*)
 Greenbug
(*Schizaphis graminum*)
 Greenhouse orthezia
(*Orthezia insignis*)
 Greenhouse slug
(*Milax gagates*)
 Greenhouse thrips
(*Heliothrips haemorrhoidalis*)
 Greenhouse whitefly
(*Trialeurodes vaporariorum*)
 Green-striped grasshopper
(*Chortophaga viridifasciata*)
 Green-striped mapleworm
(*Anisota rubicunda*)
 Gregarious oak leaf miner
(*Cameraria cinninnatiella*)
 Ground beetles
930
 Ground pearls
1403
 Ground mealybug
(*Rhizoecus falcifer*)
 Gulf Coast tick
(*Amblyomma maculatum*)
 Gypsy moth
(*Porthetria dispar*)

H

Hackberry lace bug
(*Corythucha celtidis*)
 Hackberry-nipple-gall maker
(*Pachypsylla celtidisnanna*)
 Hairy chinch bug
(*Blissus leucopterus hirtus*)
 Hairy spider beetle
(*Ptinus villiger*)
 Hall scale
(*Niloataspis halli*)
 Harlequin bug
(*Murgantia histrionica*)
 Harvester ants
(1202)
 Hawthorn lace bug
(*Corythucha cydoniae*)
 Head louse
(*Pediculus humanus capitis*)
 Hellgrammite
(*Corydalus cornutus*)
 Hemispherical scale
(*Saissetia hemisphaerica*)
 Hemlock sawfly
(*Neodiprion tsugae*)
 Hessian fly
(*Phytophaga destructor*)
 Hibiscus mealybug
(*"Pnemonococcus hirsutus"*)
 Hickory horned devil
(*Citheronia regalis*)
 Hickory plant bug
(*Lygocoris caryae*)
 Hickory shuckworm
(*Laspheyresia caryana*)
 Hickory tussock moth
(*Halisdota caryae*)
 Hide beetle
(*Bermestes maculatus*)
 Hog louse
(*Haematompinus suis*)
 Holly leaf miner
(*Phytomyza ilicis*)
 Hollyhock weevil
(*Apion longirostre*)
 Honey bee
(*Apis mellifera*)
 Hop aphid
(*Phorodon humuli*)
 Hop flea beetle
(*Psylliodes punctulata*)

Horn fly
(*Haematobia irritans*)
Horned squash bug
(*Anasa armigera*)
Hornets
301, 930, 964, 998, 1120, 1157
Hornworms
(1348)
Horse biting louse
(*Bovicola equi*)
Horse bot fly
(*Gasterophilus intestinalis*)
Horse flies
969, (1281)
House centipede
(*Scutigera coleoptrata*)
House cricket
(*Acheta domestica*)
House fly
(*Musca domestica*)

Ichneumons
660
Imported cabbageworm
(*Pieris rapae*)
Imported currantworm
(*Nematus ribesii*)
Imported fire ant
(*Solenopsis saevissima richteri*)
Imported willow leaf beetle
(*Plagiodesa versicolora*)
Indian cotton jassid
(*Empoasca devastans*)
Indian sugarcane leafhopper^o
(*Pyrrilla perpusilla*)
Indian-meal moth
(*Plodia interpunctella*)
Introduced pine sawfly
(*Diprion similis*)
Io moth
(*Automeris io*)
Iris borer
(*Macronoctua onusta*)
Iris thrips
(*Iridothrips iridis*)
Iris weevil
(*Mononychus vulpeculus*)
Italian grasshopper^o
(*Calliptamus italicus*)
Italian locust^o
(*Calliptamus italicus*)
Italian pear scale
(*Epidiaspis piricola*)
Itch mite
(*Sarcoptes scabiei*)

Jack-pine budworm
(*Choristoneura pinus*)
Jack-pine sawfly
(*Neodiprion pratti banksianae*)
Japanese beetle
(*Popillia japonica*)
Jeffrey pine beetle
(*Dendroctonus jeffreyi*)
"Jeweled" beetle, a
288
Juniper scale
(*Diaspis carueli*)
Juniper webworm
(*Dichomeris marginella*)

Katydid
396, 461, 727

Khapra beetle
(*Trogoderma granarium*)
Klanath-weed beetles
(*Chrysolina* spp.)
Lace bugs
688, 726, 764, 995
Lacewings
414, 471, 498, 533, 590, 769,
803, 839, 873, 1088
Lady beetles
222, 258, 287, 324, 369, 405,
410, 440, 442, 471, 498, 532,
533, 564, 589, 623, 659, 693,
731, 769, 803, 839, 873, 931,
965, 999, 1028, 1029, 1088,
1121, 1158, 1188, 1219, 1301,
1337, 1368
Lake midges
563
Larch aphid
(*Giinara laticis*)
Larch casebearer
(*Coleophora laricella*)
Larch sawfly
(*Pristiphora erichsonii*)
Larder beetle
(*Dermestes lardarius*)
Large aspen tortrix
(*Choristoneura conflictana*)
Large white butterfly^v
(*Pieris brassicae*)
Larger canna leaf roller
(*Calpodex ethlius*)
Larger elm leaf beetle
(*Monocesta coryli*)
Larger shot-hole borer
(*Scolytus mali*)
Larger yellow ant
(*Acanthomyops interjectus*)
Lawn armyworm
(*Spodoptera mauritia acronyctoides*)
Leaf beetles
786, 1211
Leaf crumpler
(*Acrobasis indigenella*)
Leaf miners
80, 153, 219, 239, 363, 365, 610,
644, 678, 717, 759, 790, 914,
1055, 1113, 1154, (1198), 1243,
(1254), 1364, 1366, (1387)
Leaf mining beetle, a
1117
Leaf rollers
580, 716, (1097)
Leaf roller moths
377, 465, 580, 724, 789, 993
Leaf tiers
377
Leaf-footed bug
(*Leptoglossus phyllopus*)
Leafcutting bees
379
Leafhoppers
79, 83, 206, 215, 227, 234, 239,
242, 269, 282, 316, 375, 392,
433, (444), (450), 457, 461,
462, 467, 645, 671, 709, 759,
789, 816, 852, 861, 880, 961,
981, 1024, 1055, 1084, 1113,
(1196), 1215, 1245, (1253),
1291, 1330, 1346
Leek moth^o
(*Acrolepia assectella*)
Leopard moth
(*Geuzera pyrina*)
Lepedeza webworm
(*Tetralopha scortealis*)
Lesser appleworm
(*Grapholitha prunivora*)

Lesser clover leaf weevil
(*Hypera nigrirostris*)
Lesser cornstalk borer
(*Elaeomopalpus lignosellus*)
Lesser date moth^o
(*Batrachedra amydraula*)
Lesser grain borer
(*Rhyzopertha dominica*)
Lesser mealworm
(*Alphitobius diaperinus*)
Lesser peach tree borer
(*Synanthedon pictipes*)
Lice
183, 300, (598), (1281), (1282),
1335
Light-brown apple moth^o
(*Austrotortrix postvittana*)
Lilac borer
(*Podosesia syringae syringae*)
Lilac leaf miner
(*Gracilaria syringella*)
Lima-bean pod borer
(*Etiella zinckenella*)
Lima-bean vine borer
(*Monophtilota pergratialis*)
Linden looper
(*Eranis tiliaria*)
Locust borer
(*Megacyllene robiniae*)
Locust leaf miner
(*Xenochalepus dorsalis*)
Locust twig borer
(*Ecdytolopha insititiana*)
Lodgepole needle miner
(*"Recurvaria" milleri*)
Lone star tick
(*Amblyomma americanum*)
Long-nosed cattle louse
(*Linognathus vituli*)
Long-tailed mealybug
(*Pseudococcus adonidum*)
Loopers
277, 432, 828, (1253), (1254)
Lycenid, a
317
Lygus bugs
(444), (445), (449), (973),
(1097), (1102), (1257)

M

Magnolia scale
(*Neolecanium cornuparvum*)
Maize billbug
(*Sphenophorus maidis*)
Mange mites
300
Maple bladder-gall mite
(*Vasates quadripedes*)
Maple leaf cutter
(*Paraclemensia acerifoliella*)
Maple petiole borer^o
(*Caulocampus acericaulis*)
Maple trumpet skeletonizer
(*Epinotia aceiella*)
March flies
419
Margined blister beetle
(*Epicauta pestifera*)
Masked bunter
(*Reduvius personatus*)
Mayflies
1159
Meadow plant bug
(*Leptopterna dolabratus*)
Meadow spittlebug
(*Philaenus spumarius*)
Meal moth
(*Pyralis farinalis*)
Mealworms
67

| | | |
|--|---|---|
| Mealy plum aphid (<i>Hyalopterus pruni</i>) | Nantucket pine tip moth (<i>Rhyacionia frustrana</i>) | Orange-striped oakworm (<i>Anisota senatoria</i>) |
| Mealybugs | Natal fruit fly (<i>Ceratitis rosa</i>) | Orchard mites 675, 751, 820, 854, 880, 913, 948 |
| 28, 79, 81, 158, 206, 210, 373, 396, 645, 789, 823 ¹ (1197), 1207, 1242, 1365, 1424 | Native elm bark beetle (<i>Hylurgopinus rufipes</i>) | Oriental cockroach (<i>Blatta orientalis</i>) |
| Mediterranean flour moth (<i>Anagasta kuhniella</i>) | Native holly leaf miner (<i>Phytomyza ilicicola</i>) | Oriental fruit fly (<i>Dacus dorsalis</i>) |
| Mediterranean fruit fly (<i>Ceratitis capitata</i>) | Navel orange worm (<i>Parameylois transitella</i>) | Oriental fruit moth (<i>Grapholitha molesta</i>) |
| Melon aphid (<i>Aphis gossypii</i>) | Nematodes 1021 | Oriental house fly (<i>Musca domestica vicina</i>) |
| Melon fly (<i>Dacus cucurbitae</i>) | New Guinea sugarcane weevil (<i>Rhadoscelus obscurus</i>) | Oystershell scale (<i>Lepidosaphes ulmi</i>) |
| Melonworm (<i>Diaphania hylinata</i>) | Northern cane grub (<i>Hypoderma bovis</i>) | |
| Mexican bean beetle (<i>Epilachna varivestis</i>) | Northern corn rootworm (<i>Diabrotica longicornis</i>) | |
| Mexican fruit fly (<i>Anastrepha ludens</i>) | Northern fowl mite (<i>Ornithonyssus sylviarum</i>) | |
| Mexican mealybug (<i>Phenacoccus gossypii</i>) | Northern house mosquito (<i>Culex pipiens pipiens</i>) | Pacific Coast tick (<i>Dermacentor occidentalis</i>) |
| Microlepidoptera 377 | Northern masked chafer (<i>Cyclocephala borealis</i>) | Pacific Coast wireworm (<i>Limonius canus</i>) |
| Midges 78, 692, 1298 | Northern mole cricket (<i>Gryllotalpa hexadactyla</i>) | Pacific dampwood termite (<i>Zootermopsis angusticollis</i>) |
| Migratory grasshopper (<i>Melanoplus sanguinipes</i>) | Norway-maple aphid (<i>Periphyllus lyropactus</i>) | Pacific flatheaded borer (<i>Chrysobothris mali</i>) |
| Millipedes 154, 308, 872, 931, 965, 1187, 1216, 1272, 1378, 1394 | Nutgrass armyworm (<i>Spodoptera exempta</i>) | Pacific spider mite (<i>Tetranychus pacificus</i>) |
| Mimosa webworm (<i>Homadaula albizziae</i>) | | Packard grasshopper (<i>Melanoplus packardii</i>) |
| Mining scale (<i>Howardia biclavus</i>) | | Painted lady (<i>Vanessa cardui</i>) |
| Mirid bugs 798 | Oak lace bug (<i>Corythucha arcuata</i>) | Painted leafhopper (<i>Endria nimica</i>) |
| Mites 71, 167, 201, 202, 205, 269, 356, 380, 496, 645, 851, 866, 928, 1187, (1196), 1242, 1266, 1268, (1278), 1366, 1399 | Oak skeletonizer (<i>Bucculatrix ansiniella</i>) | Painted maple aphid (<i>Drepanaphis acerifoliae</i>) |
| Momphid moths 169 | Oak webworm (<i>Archips ferdinanus</i>) | Pale tussock moth (<i>Haliidotia tessellaris</i>) |
| Monarch butterfly (<i>Danaus plexippus</i>) | Oat cyst nematode (<i>Heterodera avenae</i>) | Pale western cutworm (<i>Agrotis orthogonia</i>) |
| Mordellid beetle, a 1239 | Oblique-banded leaf roller (<i>Archips rosaceanus</i>) | Pales weevil (<i>Hylobius pales</i>) |
| Mormon cricket (<i>Anabrus simplex</i>) | Obscure scale (<i>Chrysomphalus obscurus</i>) | Pale-striped flea beetle (<i>Systema blanda</i>) |
| Mormon crickets 509, 541 | Occipitorid caterpillar ¹ (<i>Dasystoma salicellum</i>) | Palm leaf skeletonizer (<i>Homaledra sabalella</i>) |
| Morning-glory leaf miner (<i>Bedeella somnulentella</i>) | Old-house borer (<i>Hylotrupes bajulus</i>) | Pandora moth (<i>Coloradia pandora</i>) |
| Moroccan locust ¹ (<i>Dociostaurus maroccanus</i>) | Old world bollworm ¹ (<i>Heliothis armigera</i>) | Papaya fruit fly (<i>Toxotrypana curvicauda</i>) |
| Mosquitoes 107, 291, 292, 293, 367, 403, 438, 496, 530, 563, 587, (598), 622, 658, 691, 696, 727, 736, 765, 800, 836, 871, 927, 963, 995, 1025, 1056, 1087, 1119, 1156, 1185, (1200), 1216, 1246, 1270, 1298, 1318, 1351, 1366, 1377, 1398 | Old world screw-worm ¹ (<i>Chrysomya bezziana</i>) | Parasites 28, 131, 154, 155, 287, 324, 405, 412, 413, 590, 660, 731 |
| Moths (1202) | Oleander aphid ¹ (<i>Aphis nerii</i>) | Parlatoria date scale (<i>Parlatoria blanchardi</i>) |
| Mountain-ash sawfly (<i>Pristiphora geniculata</i>) | Oleander scale (<i>Aspidiotus hederac</i>) | Parsleyworm (<i>Papilio polyxenes asterius</i>) |
| Mountain pine beetle (<i>Dendroctonus monticolae</i>) | Olive fruit fly (<i>Dacus oleae</i>) | Pavement ant (<i>Tetramorium caespitum</i>) |
| Mourning-cloak butterfly (<i>Nymphalis antiopa</i>) | Olive moth ¹ (<i>Prays oleellus</i>) | Pea aphid (<i>Acyrtosiphon pisum</i>) |
| Muscoid flies 695, 1271 | Olive psyllid ¹ (<i>Euphyllura olivina</i>) | Pea leaf miner (<i>Liriomyza langei</i>) |
| Mushroom mite (<i>Tyrophagus putrescentiae</i>) | Olive scale (<i>Parlatoria oleae</i>) | Pea leaf weevil (<i>Sitona lineata</i>) |
| | Omnivorous leaf tier (<i>Cnephasia longana</i>) | Pea moth (<i>Laspeyresia nigricana</i>) |
| | Omnivorous looper (<i>Sabulodes caberata</i>) | Pea weevil (<i>Bruchus pisorum</i>) |
| | One-spot stink bug (<i>Euschistus variolarius</i>) | Peach budrestid ¹ (<i>Capnodis tenebrionis</i>) |
| | Onion bulb fly (<i>Eumerus strigatus</i>) | Peach fruit moth ¹ (<i>Carposina niponensis</i>) |
| | Onion maggot (<i>Hyalemya antiqua</i>) | Peach silver mite (<i>Aculus cornutus</i>) |
| | Onion thrips (<i>Thrips tabaci</i>) | Peach tree borer (<i>Sannioidea exitiosa</i>) |
| | Orange tortrix (<i>Argyrotaenia citrana</i>) | Peach twig borer (<i>Anarsia lineatella</i>) |
| | Orange-dog (<i>Papilio cresphontes</i>) | Pear lace bug (<i>Stephanitis pyri</i>) |
| Nabids 442 | | |

- Pear leaf blister mite
(*Eriophyes pyri*)
- Pear rust mite
(*Epitrimerus pyri*)
- Pear psylla
(*Psylla pyricola*)
- Pear thrips
(*Taeniothrips inconsequens*)
- Pear-slug
(*Calliroa cerasi*)
- Pecan aphids
1142
- Pecan bud moth
(*Gretchena bolliana*)
- Pecan carpenterworm
(*Cossula magnifica*)
- Pecan cigar casebearer
(*Coleophora caryaefoliella*)
- Pecan leaf casebearer
(*Acrobasis juglandis*)
- Pecan leaf phylloxera
(*Phylloxera notabilis*)
- Pecan leafroll mite
(*Aceria caryae*)
- Pecan nut casebearer
(*Acrobasis caryae*)
- Pecan phylloxera
(*Phylloxera devastatrix*)
- Pecan spittlebug
(*Clastoptera achatina*)
- Pecan weevil
(*Curculio caryae*)
- Pepper maggot
(*Zonosemata electa*)
- Periodical cicada
(*Magicalicada septendecim*)
- Periodical cicadas
202, 258, 332, 536, 555, 566,
579, 585, 609, 641, 660, 673,
694, 712, 732, 751, 788, 798,
949, 985, 1088
- Pharaoh ant
(*Monomorium pharaonis*)
- Phlox plant bug
(*Lopidea davisi*)
- Pigeon tremex
(*Tremex columba*)
- Pickleworm
(*Diaphania nitidalis*)
- Pigmy mangold beetle^o
(*Atomaria linearis*)
- Pillbugs
270, 308, 366, 380, (1202)
- Pine aphid^o
1365, 1395, 1407
- Pine bark aphid
(*Pineus strobi*)
- Pine bark beetles
93
- Pine butterfly
(*Neophasia menapia*)
- Pine chafer
(*Anomala obliqua*)
- Pine colaspis
(*Colaspis pini*)
- Pine engraver
(*Ips pini*)
- Pine false webworm
(*Acantholyda erythrocephala*)
- Pine leaf chermid
(*Pineus pinifoliae*)
- Pine needle miner
(*Exoteleia pinifoliella*)
- Pine needle scale
(*Phenacaspis pinifoliae*)
- Pine reproduction weevils
721
- Pine root collar weevil
(*Hylobius radicis*)
- Pine spittlebug
(*Aphrophora parallela*)
- Pine tip moths
524, 832, 958
- Pine tortoise scale
(*Toumeyella numismaticum*)
- Pine tube moth
(*Argyrotaenia pinatubana*)
- Pine tussock moth
(*Dasychira plagiata*)
- Pine webworm
(*Tetralopha robustella*)
- Pineapple scale
(*Diaspis bromeliae*)
- Pink bollworm
(*Pectinophora gossypiella*)
- Pink scavenger caterpillar
(*Sathrobrotia rileyi*)
- Pistachio psyllid^o
(*Agonoscena targionii*)
- Pistol casebearer
(*Coleophora maliorella*)
- Pitch twig moth
(*Petrova comstockiana*)
- Plant bugs
200, (274), 431, (444), 474,
582, 604, 640, 719, 724, (809),
830, (1165), 1209, (1224), 1242,
1261, (1386)
- Plum curculio
(*Conotrachelus nenuphar*)
- Plum gouger
(*Anthonomus scutellaris*)
- Plum rust mite
(*Aculus fockeui*)
- Plum web-spinning sawfly
(*Neurotoma inconspicua*)
- Polyphemus moth
(*Antheraea polyphemus*)
- Poplar borer
(*Saperda calcitrata*)
- Poplar petiole gall aphid
(*Empiphigus populitransversus*)
- Poplar tent maker
(*Ichthyura inclusa*)
- Poplar vagabond aphid
(*Mordwilkoja vagabunda*)
- Poplar-and-willow borer
(*Sternochetus lapathi*)
- Potato aphid
(*Macrosiphum euphorbiae*)
- Potato flea beetle
(*Epitrix cucumeris*)
- Potato leafhopper
(*Empoasca fabae*)
- Potato psyllid
(*Paratrioza cockerelli*)
- Potato stalk borer
(*Trichobaris trinotata*)
- Potato stem borer
(*Hydroecia micacea*)
- Potato tuberworm
(*Gnorimoschema operculella*)
- Powder-post beetles
310, 378, 439, 1374
- Predaceous mites
660, 694
- Predators
131, 154, 155, 287, 324, 413,
141,
- Privet leaf miner
(*Gracilaria cuculipennella*)
- Privet mite
(*Brevipalpus obovatus*)
- Privet thrips
(*Dendrothrips ornatus*)
- Pseudoscorpions
419
- Psocids
384, 1398
- Psychid moths
376
- Psyllids
736, 1265
- Pumpkin caterpillar^o
(*Diaphania indica*)
- Purple scale
(*Lepidosaphes beckii*)
- Puss caterpillar
(*Megalopyge opercularis*)
- Putnam scale
(*Aspidiotus ancylus*)
- Pyralid moth, a
827
- Pyriform scale
(*Protospulvinaria pyriformis*)

R

- Range caterpillar
(*Hemileuca oliviae*)
- Range crane fly
(*Tipula simplex*)
- Rapid plant bug
(*Adelphocoris rapidus*)
- Raspberry cane borer
(*Oberria bimaculata*)
- Raspberry crown borer
(*Bembecia marginata*)
- Raspberry sawfly
(*Monophadnoides geniculatus*)
- Red carpenter ant
(*Camponotus ferrugineus*)
- Red elm bark weevil
(*Magdalis arnicollis*)
- Red flour beetle
(*Tribolium castaneum*)
- Red harvester ant
(*Pogonomyrmex barbatus*)
- Red pumpkin beetle^o
(*Raphidopalpa foveicollis*)
- Red turnip beetle
(*Entomoscelis americana*)
- Red turpentine beetle
(*Dendroctonus valens*)
- Red-backed cutworm
(*Euxoa ochrogaster*)
- Red-banded leaf roller
(*Argyrotaenia velutinana*)
- Red-banded thrips
(*Selenothrips rubrocinctus*)
- Red-headed ash borer
(*Neoclytus acuminatus*)
- Red-headed pine sawfly
(*Neodiprion luteolus*)
- Red-humped caterpillar
(*Schizura concinna*)
- Red-legged flea beetle
(*Derocephalus erythropus*)
- Red-legged grasshopper
(*Melanoplus femurrubrum*)
- Red-necked cane borer
(*Agrius ruficollis*)
- Red-necked peanutworm
(*Stegasta bosqueella*)
- Red-pine sawfly
(*Neodiprion nanulus nanulus*)
- Rhodes-grass scale
(*Antonina graminis*)
- Rhubarb curculio
(*Lixus concavus*)
- Rice delphacid
(*Sogata orizicola*)
- Rice moth^o
(*Corcyra cephalonica*)
- Rice stink bug
(*Oebalus pugnax pugnax*)
- Rice water weevil
(*Lissorhoptrus oryzophilus*)
- Rice weevil
(*Sitophilus oryzae*)
- Ring-legged earwig
(*Euborellia annulipes*)
- Robber flies
839
- Rocky Mountain wood tick
(*Dermacentor andersoni*)

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|---|---|--|
| Root aphids 650 | Schoene spider mite (<i>Tetranychus schoenei</i>) | Southern armyworm (<i>Prodenia eridania</i>) |
| Root maggots 1332 | Sciarid flies 354 | Southern buffalo gnat (<i>Cnephia pecurarium</i>) |
| Rootworm, a 462 | Scorpions 303, (1202) | Southern cabbageworm (<i>Pieris protodice</i>) |
| Rose aphid (<i>Macrosiphum rosae</i>) | Screw-worm (<i>Cochliomyia hominivorax</i>) | Southern cattle tick (<i>Boophilus microplus</i>) |
| Rose chafer (<i>Macrodactylus subspinosus</i>) | Scurfy scale (<i>Chionaspis furfura</i>) | Southwestern corn borer (<i>Zea diatraea grandiosella</i>) |
| Rose leaf beetle (<i>Nodonota puncticollis</i>) | Secondary screw-worm (<i>Cochliomyia macellaria</i>) | Southern corn rootworm (<i>Diabrotica undecimpunctata howardi</i>) |
| Rose leafhopper (<i>Edwardsiana rosae</i>) | Seed insects (1131) | Southern cornstalk borer (<i>Diatraea cramboides</i>) |
| Rose sawfly (<i>Blennocampa pusilla</i>) | Seed-corn beetle (<i>Agonoderus lecontei</i>) | Southern fire ant (<i>Solenopsis xyloni</i>) |
| Rose scale (<i>Aulacaspis rosae</i>) | Seed-corn maggot (<i>Hylemya platura</i>) | Southern green stink bug (<i>Nezara viridula</i>) |
| Rose stem girdler (<i>Agriilus rubicola</i>) | Senn pest [†] (<i>Eurygaster integriceps</i>) | Southern house mosquito (<i>Culex pipiens quinquefasciatus</i>) |
| Rose-slug (<i>Endelomyia aethiops</i>) | Sequoia pitch moth (<i>Vespamina sequoiae</i>) | Southern lyctus beetle (<i>Lyctus planicollis</i>) |
| Rosy apple aphid (<i>Anuraphis rosea</i>) | Shaft louse (<i>Menopon gallinae</i>) | Southern pine beetle (<i>Dendroctonus frontalis</i>) |
| Roundheaded apple tree borer (<i>Saperda candida</i>) | Shallot aphid (<i>Myzus ascalonicus</i>) | Southern pine sawyer (<i>Monochamus titillator</i>) |
| Roundheaded pine beetle (<i>Dendroctonus convexifrons</i>) | Sheep biting louse (<i>Bovicola ovis</i>) | Southern potato wireworm (<i>Conoderus falli</i>) |
| Rust mites 28, 194, 529 | Sheep bot fly (<i>Oestrus ovis</i>) | Southern red mite (<i>Oligonychus ilicis</i>) |
| Rustic borer (<i>Xylotrechus colonus</i>) | Sheep scab mite (<i>Psoroptes ovis</i>) | Sowbugs 285, 308, 1187, (1202) |
| Rusty grain beetle (<i>Cryptolestes ferrugineus</i>) | Sheep ked (<i>Melophagus ovinus</i>) | Soybean cyst nematode (<i>Heterodera glycines</i>) |
| Rusty plum aphid (<i>Hysteronera setariae</i>) | Shoot borer, a 1021 | Spiders 873, 1096 |
| Rusty tussock moth (<i>Orgyia antiqua</i>) | Shot-hole borer (<i>Scolytus rugulosus</i>) | Spider beetles 439 |
| Rhododendron lace bug (<i>Stephanitis rhododendri</i>) | Short-nosed cattle louse (<i>Haematopinus eurysternus</i>) | Spider mites 104, 174, 180, 229, 232, 244, 245, 361, 364, 380, 399, 463, 490, 523, 528, 546, 556, 561, 576, 580, 587, 604, 621, 641, 651, 656, 680, 683, 689, 709, 711, 717, 720, 727, 736, 759, 765, 794, 800, 828, 830, 835, 860, 861, 862, 863, 869, 908, 921, 926, 945, 947, 957, 962, 983, 984, 991, 995, 1008, 1020, 1025, 1044, 1047, 1053, 1056, 1083, 1109, 1110, 1113, 1118, 1142, 1147, (1163), 1185, 1210, 1212, (1224), 1243, 1245, (1257), 1292, 1297, 1315, 1408 |
| | Silky ant (<i>Formica fusca</i>) | Spinach flea beetle (<i>Disomyza xanthomelas</i>) |
| | Silverfish 81, (1202) | Spinach leaf miner (<i>Pegomya hyoscyami</i>) |
| | Silverfish (<i>Lepisma saccharina</i>) | Spined soldier bug (<i>Podisus maculiventris</i>) |
| | Silver-spotted tiger moth (<i>Halisisoda argentea</i>) | Spiny bollworm [†] (<i>Earias insulana</i>) |
| | Silver-spotted skipper (<i>Epargyreus clarus</i>) | Spiny oakworm (<i>Anisota stigma</i>) |
| | Silver-Y moth [†] (<i>Autographa gamma</i>) | Spirea aphid (<i>Aphis spiraeicola</i>) |
| | Six-spotted leafhopper (<i>Macrostelus fascifrons</i>) | Spittlebugs 170, 192, 375, 514, 548, 789, 983, 1216 |
| | Six-spotted mite (<i>Eotetranychus sexmaculatus</i>) | Spotted alfalfa aphid (<i>Therioaphis maculata</i>) |
| | Slugs 171, 242, 246, 829, 1017, 1211, 1294, 1366, (1388) | Spotted asparagus beetle (<i>Crioceris duodecimpunctata</i>) |
| | Small spruce sawfly [†] (<i>Pristiphora abietina</i>) | Spotted blister beetle (<i>Epicauta maculata</i>) |
| | Smaller European elm bark beetle (<i>Scolytus multistriatus</i>) | Spotted cucumber beetle (<i>Diabrotica undecimpunctata howardi</i>) |
| | Smeared dagger moth (<i>Acronicta obliqua</i>) | Spotted cutworm (<i>Anasthes c-nigrum</i>) |
| | Snails 43, 242, 285 | Spotted garden slug (<i>Limax maximus</i>) |
| | Snowball aphid (<i>Anuraphis viburnicola</i>) | |
| | Snowy tree crickets (<i>Oecanthus</i> spp.) | |
| | Sod webworms 483, 515, 607, 667, 983, 1011, 1047 | |
| | Soil insects (890), (1227), (1253) | |
| | Solitary oak leaf miner (<i>Cameraria hamadryadella</i>) | |
| | Solpugids 419, 931 | |
| | Sorghum midge (<i>Contarinia sorghicola</i>) | |
| | Sorghum webworm (<i>Celama sorghiella</i>) | |

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| Spotted pine sawyer (<i>Monochamus maculosus</i>) | Sugarcane beetle (<i>Duethoea rugiceps</i>) | 606, 615, 637, 645, 648, 650, 659, 672, 679, 683, 689, 709, 717, 720, 726, 745, 753, 759, 783, 828, 850, 911, 945, 995, 1077, (1102), (1196), 1212, (1225), (1257), (1280), 1364, (1382) |
| Spring cankerworm (<i>Paleacrita vernata</i>) | Sugarcane borer (<i>Diatraea saccharalis</i>) | Thurberia weevil (<i>Anthrenus grandis thurberiae</i>) |
| Springtails 48, 288, 308, 379, 406, 419, 499, 625, 716, 746, 803, 875, 1121, 1157, 1187, 1411 | Sugar-maple borer (<i>Glyobius speciosus</i>) | Ticks 74, 220, 469, 622, 692, 768, 1187, (1281), (1282) |
| Spruce aphid (<i>Aphis abietina</i>) | Sugar-pine cone beetle (<i>Conophthorus lambertianae</i>) | Tiger swallowtail (<i>Papilio glaucus</i>) |
| Spruce bud moth (<i>Zeiraphera ratzeburgiana</i>) | Sunflower moth (<i>Homoeosoma electellum</i>) | Tile-horned prionus (<i>Prionus imbricornis</i>) |
| Spruce bud scale (<i>Physokermes piceae</i>) | Super-5 plant bug (<i>Adelphocoris superbus</i>) | Tip moths 254, 721, 1149 |
| Spruce budworm (<i>Choristoneura fumiferana</i>) | Swallow bug (<i>Oeciacus vicarius</i>) | Tobacco budworm (<i>Heliothis virescens</i>) |
| Spruce needle miner (<i>Taniva albolineana</i>) | Sweetclover aphid (<i>Therioaphis riehmi</i>) | Tobacco flea beetle (<i>Epitrix hirtipennis</i>) |
| Spruce needle miner, a 652 | Sweetclover weevil (<i>Sitona cylindricollis</i>) | Tobacco hornworm (<i>Protoparce sexta</i>) |
| Spruce spider mite (<i>Oligonychus ununguis</i>) | Sweetpotato flea beetle (<i>Chaetocnema confinis</i>) | Tobacco thrips (<i>Frankliniella fusca</i>) |
| Square-necked grain beetle (<i>Cathartus quadricollis</i>) | Sweetpotato hornworm (<i>Agrilus cingulatus</i>) | Tobacco wireworm (<i>Conoderus vespertinus</i>) |
| Squash beetle (<i>Epilachna borealis</i>) | Sweetpotato leaf miner (<i>Bedellia orchilella</i>) | Tobacco wireworms 463 |
| Squash bug (<i>Anasa tristis</i>) | Sweetpotato leaf roller (<i>Pilocrocis tripunctata</i>) | Tomato fruitworm (<i>Heliothis zea</i>) |
| Squash vine borer (<i>Melittia cucurbitae</i>) | Sweetpotato weevil (<i>Cylas formicarius elegantulus</i>) | Tomato hornworm (<i>Protoparce quinquemaculata</i>) |
| Stable fly (<i>Stomoxys calcitrans</i>) | Sweetpotato whitefly (<i>Bemisia tabaci</i>) | Tomato pinworm (<i>Keiferia lycopersicella</i>) |
| Stalk borer (<i>Papaipema nebris</i>) | Sycamore lace bug (<i>Corythucha ciliata</i>) | Tomato psyllid (<i>Paratrioza cockerelli</i>) |
| Stem nematodes 216 | Sycamore tussock moth (<i>Halisidota harrisii</i>) | Tomato russet mite (<i>Aculus lycopersici</i>) |
| Sticktight flea (<i>Echidnophaga gallinacea</i>) | Symphylans 397, 1113 | Toothed flea beetle (<i>Chaetocnema denticulata</i>) |
| Stink bugs 161, 173, 228, 231, 457, 460, 712, 849, 857, 957, 983, 1046, 1053, 1140, (1197), 1207, 1241, 1293, 1347 | Syrphid flies 1029 | Tortoise beetles 694 |
| Strawberry aphid (<i>Pentatrichopus fragaefolii</i>) | Tabanids 81, 530, 588, 657, 692, 729, 767, 802, 837, 871, 929, 963, 997, 1027 | Treeshoppers 406 |
| Strawberry crown moth (<i>Ramosia bibionipennis</i>) | Tachina flies 185, 660 | Trombidid mites 369 |
| Strawberry leaf roller (<i>Ancyliis comptana fragariae</i>) | Tarnished plant bug (<i>Lygus lineolaris</i>) | Tropical fowl mite (<i>Ornithonyssus bursa</i>) |
| Strawberry root aphid (<i>Aphis forbesi</i>) | Tawny garden slug (<i>Limax flavus</i>) | Tropical rat mite (<i>Ornithonyssus bacoti</i>) |
| Strawberry root weevil (<i>Brachyrhinus ovatus</i>) | Tea scale (<i>Fiorinia theae</i>) | Tuber flea beetle (<i>Epitrix tuberis</i>) |
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| Straw itch mite (<i>Pemotes ventricosus</i>) | Three-cornered alfalfa hopper (<i>Spissistilus festinus</i>) | Tumid spider mite (<i>Tetranychus tumidus</i>) |
| Strid cucumber beetle (<i>Acalymma vittata</i>) | Three-lined potato beetle (<i>Lema trilineata</i>) | Turnip aphid (<i>Hyadaphis pseudobrassicae</i>) |
| Striped flea beetle (<i>Phyllotreta striolata</i>) | Three-spotted flea beetle (<i>Disonycha triangularis</i>) | Turnip maggot (<i>Hylemya floralis</i>) |
| Striped horse fly (<i>Tabanus lineola</i>) | Thirteen-spotted lady beetle (<i>Hippodamia tredecimpunctata tibialis</i>) | Turnip moth (<i>Agrotis segetum</i>) |
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Two-striped grasshopper
(*Melanoplus bivittatus*)
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(*Anisomorpha buprestoides*)

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Western peach tree borer
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Western pine beetle
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(*Anisoplia austriaca*)
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| <u>Platyptilia pica</u> | 21, 377 | | |
| <u>Platyptilus fraternus</u> (a mirid) | 624 | | |
| <u>Plectrodera scalator</u> (cottonwood borer) | 336 | | |
| <u>Plemelidella abietina</u> | 70, 73 | | |
| <u>Platycoccidiomyia</u> (seed midge) | 895 | | |
| <u>Pleroneura borealis</u> (a sawfly) | 351 | | |
| <u>Pleurophorus caesus</u> (a scarab) | 636 | | |
| <u>Plodia interpunctella</u> (Indian-meal moth) | 46, 108, 143, 221, 258, 286, 307, 368, 383, 470, 497, 629, 630, 768, 1050, 1088, 1157, 1187, (1202), 1229, 1230, 1231, 1232, 1233, 1300, 1320, 1337, 1399, 1410, 1426 | | |
| <u>Plutella maculipennis</u> (diamondback moth) | 72, 175, 236, 326, 519, 553, 613, 647, 678, 826, 916, 987, 1348 | | |
| <u>Podaga puncticollis</u> (a flea beetle) | 80 | | |
| <u>Podosessa</u> spp. | 377 | | |
| <u>Podosessa syringae fraxini</u> (ash borer) | 21, 342 | | |
| <u>Podosessa syringae syringae</u> (lilac borer) | 21, 342, 528, 687, 960 | | |
| <u>Podura aquatica</u> (a springtail) | 323 | | |
| <u>Pogonolepsus lineatus</u> (four-lined plant bug) | 733, 804, 835 | | |
| <u>Pogonomymex</u> spp. | 458 | | |
| <u>Pogonomymex barbatus</u> (red harvester ant) | 171, 280, 324, 548 | | |
| <u>Pogonomymex californicus</u> (California harvester ant) | 21 | | |
| <u>Pogonomymex occidentalis</u> (western harvester ant) | 171, 607, 732, 851, 880 | | |
| <u>Polididus armatissimus</u> (a reduviid bug) | 1381, 1416 | | |
| <u>Polistes</u> spp. (vespid wasps) | 301, 692, 998, 1028, 1059, 1087, (1202), 1248, 1299 | | |
| <u>Polistes annularis</u> | | | |
| <u>Polistes exclamans</u> | 110, 1324 | | |
| <u>Polistes rubiginosus</u> | 110, 1268 | | |
| <u>Pollenia rudis</u> (cluster fly) | 307, 442, 1187, 1218, 1300, 1320, 1377, 1402, 1425 | | |
| <u>Pollinia pollini</u> (a coccid) | 76 | | |
| <u>Polycnaon stouti</u> (a false powder-post beetle) | 47, 311 | | |
| <u>Polydesmus inconstans</u> (a milliped) | 1394 | | |
| <u>Polysphincta albigipes</u> (an ichneumon) | 418 | | |
| <u>Popillia japonica</u> (Japanese beetle) | 16, 68, 152, 169, 174, 201, 206, 223, 248, 338, 369, 377, 378, 415, 416, 440, 513, 548, 566, 590, 607, 624, 638, 694, 705, 725, 736, 744, 752, 763, 770, 781, 790, 798, 803, 814, 823, 834, 840, 856, 873, 925, 932, 933, 947, 966, 983, 985, 987, 994, 999, 1013, 1029, 1043, 1061, 1089, 1122, 1158, (1163), 1176, 1188, 1215, 1270, 1273, 1338, 1368, 1411 | | |
| <u>Portheiria dispar</u> (gypsy moth) | 14, 65, 76, 219, 283, 346, 435, 465, 474, 491, 526, 549, 556, 558, 609, 617, 685, 723, 736, 763, 797, 833, 867, 923, 959, 993, 1023, 1054, 1084, 1152, 1214, 1269, 1376 | | |
| <u>Praon</u> sp. (a parasitic braconid) | 707 | | |
| <u>Prays oleellus</u> (olive moth ^o) | 70, 73 | | |
| <u>Prennotrypes</u> spp. (weevils) | 409, 502, 807, 1064, 1250 | | |
| <u>Prennotrypes solani</u> | 1064 | | |
| <u>Prionoxystus robiniae</u> (carpenter-worm) | 226, 247, 520, 582, 649, 714, 718, 754, 756, 791, 825, 828, 918, 954, 986, 988, 1017, 1051, 1060, 1081, (1162), (1167), 1266 | | |
| <u>Prionoxystus robiniae</u> (carpenter-worm) | 29, 342, 723, 867, 924, 1023, 1151, 1183 | | |
| <u>Prionomeles leucatus</u> | | | |
| see <u>Odonotopus caucatus</u> | | | |
| <u>Prionus</u> spp. | 960, 992, 1313, 1331 | | |
| <u>Prionus californicus</u> (California prionus) | 352, 554 | | |
| <u>Prionus imbricatus</u> (tile-horned prionus) | 770 | | |
| <u>Prionus latcollis</u> (broad-necked root borer) | 417, 966 | | |
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| <u>Pristiphora californica</u> (California pear-slug) | 460 | | |
| <u>Pristiphora erichsonii</u> (larch sawfly) | 352, 400, 685, 761, 832, 866, 922, 1150 | | |
| <u>Pristiphora geniculata</u> (mountain-ash sawfly) | 352 | | |
| <u>Prociophilus fraxinidipetalae</u> | 654 | | |
| <u>Prociophilus fraxinifolii</u> | 354, 585, 682, 1407 | | |
| <u>Prociophilus imbricator</u> (beech blight aphid) | 354, 1153 | | |
| <u>Prociophilus tessellatus</u> (woolly alder aphid) | 354, 374, 654, 686, 696, 724, 835, 960, 1376 | | |
| <u>Prociophilus venafuscus</u> | 401 | | |
| <u>Prodenia</u> spp. | 1010, 1052, 1061 | | |
| <u>Prodenia eridania</u> (southern armyworm) | 577, 736, 1050 | | |
| <u>Prodenia litura</u> (Egyptian cotton-worm ^o) | 80, 81, 807, 970 | | |
| <u>Prodenia ornithogalli</u> (yellow-striped armyworm) | 47, 143, 166, 172, 185, 223, 233, 246, 259, 289, 318, 326, 370, 407, 443, 473, 483, 499, 501, 534, 555, 567, 568, 583, 591, 626, 627, 641, 661, 662, 672, 682, 696, 697, 709, 734, 735, 749, 771, 772, 782, 805, 806, 819, 828, 841, 842, 849, 859, 876, 877, 884, 934, 935, 936, 937, 967, 968, 969, 1001, 1002, 1032, 1032, 1033, 1061, 1062, 1063, 1090, 1091, 1092, 1123, 1124, | | |
| 1140, 1160, 1161, 1176, 1180, 1191, 1211, 1221, 1251, 1252, 1275, 1303, 1339, 1356, 1370, 1380, 1394, 1412 | | | |
| <u>Prodenia praefica</u> (western yellow-striped armyworm) | 166, 233, 245, 851, 914, 1146, 1182, 1242, 1391, 1422 | | |
| <u>Prothrioterms simplex</u> (a dampwood termite) | 47, 68 | | |
| <u>Prosapia bicincta</u> (a spittlebug) | 170, 375, 799, 1109, 1289 | | |
| <u>Prostimulium</u> sp. (a black fly) | 299 | | |
| <u>Prospaltella clypealis</u> (a parasitic culicid) | 431 | | |
| <u>Prospaltella opulenta</u> | 12, 217, 281, 282, 431, 752, 1144, 1265, 1363, 1422 | | |
| <u>Prospaltella perniciosa</u> | 413 | | |
| <u>Prostephanus truncatus</u> (a bostrichid beetle) | 383, 1228, 1232, 1354 | | |
| <u>Protalebrella brasiliensis</u> (a leafhopper) | 23 | | |
| <u>Proteoteras aesculana</u> (an olethreutid moth) | 526 | | |
| <u>Protoparce</u> spp. (hornworms) | 226, 247, 520, 582, 649, 714, 718, 754, 756, 791, 825, 828, 918, 954, 986, 988, 1017, 1051, 1060, 1081, (1162), (1167), 1266 | | |
| <u>Protoparce quinquemaculata</u> (tomato hornworm) | 326, 370, 407, 501, 534, 587, 568, 591, 626, 627, 661, 662, 696, 697, 734, 735, 754, 771, 772, 791, 805, 806, 825, 841, 842, 858, 862, 876, 877, 884, 934, 935, 936, 937, 952, 954, 967, 968, 988, 1001, 1002, 1014, 1062, 1063, (1068), 1090, 1091, 1123, 1124, 1144, 1160, 1161, 1189, 1190, 1191, 1221, 1251, 1252, 1275, 1303, 1321, 1322, 1380, 1412 | | |
| <u>Protoparce sexta</u> (tobacco hornworm) | 226, 326, 370, 407, 501, 534, 567, 568, 591, 626, 627, 661, 662, 696, 697, 734, 735, 771, 772, 805, 806, 841, 842, 874, 876, 877, 884, 934, 935, 936, 967, 968, 969, 1001, 1002, 1032, 1033, 1062, 1063, 1090, 1091, 1123, 1124, 1160, 1161, 1190, 1191, (1199), 1221, 1251, 1252, 1275, 1303, 1321, 1322, 1339, 1356, 1370, 1380, 1412 | | |
| <u>Protupulvinaria pyriformis</u> (pyriform scale) | 65, 209, 284, 322, 402, 436, 493, 528, 566, 799, 1350 | | |
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| <u>Proxenus mindara</u> (a noctuid moth) | 218, 244, 267, 717, 1049, 1212, 1333, 1349 | | |
| <u>Podisus maculiventris</u> (spined soldier bug) | 933 | | |
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 18, 30, 106, 255, 321, 365, 372, 561, 620, 726, 1154, 1184, 1294, 1350

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 75, 688, 1350

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 65, 284, 365, 528, 726, 1335, 1350, 1365, 1396

Pseudococcus boninis (gray sugarcane mealybug)
 971

Pseudococcus citri (citrus mealybug)
 75, 210, 373, 436, 528, 621, 726, 926, 961, 1056, (1197), 1396

Pseudococcus cuspidatae
 726

Pseudococcus importatus
 320, 688

Pseudococcus maritimus (grape mealybug)
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Pseudococcus microciferus
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Pseudococcus nipae (coconut mealybug)
 88, 528

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 1285

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 1285

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Ramosia tipuliformis (currant borer)
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 301, 1377

"Recurvaria" spp.
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"Recurvaria" milleri (lodgpole needle miner)
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"Recurvaria" piceae (a needle miner)
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Reticulitermes hesperus (western subterranean termite)
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Rhagoletis cerasi (European cherry fruit fly)
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Rhagoletis cingulata (cherry fruit fly, cherry maggot)
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Rhagoletis completa (walnut husk fly)
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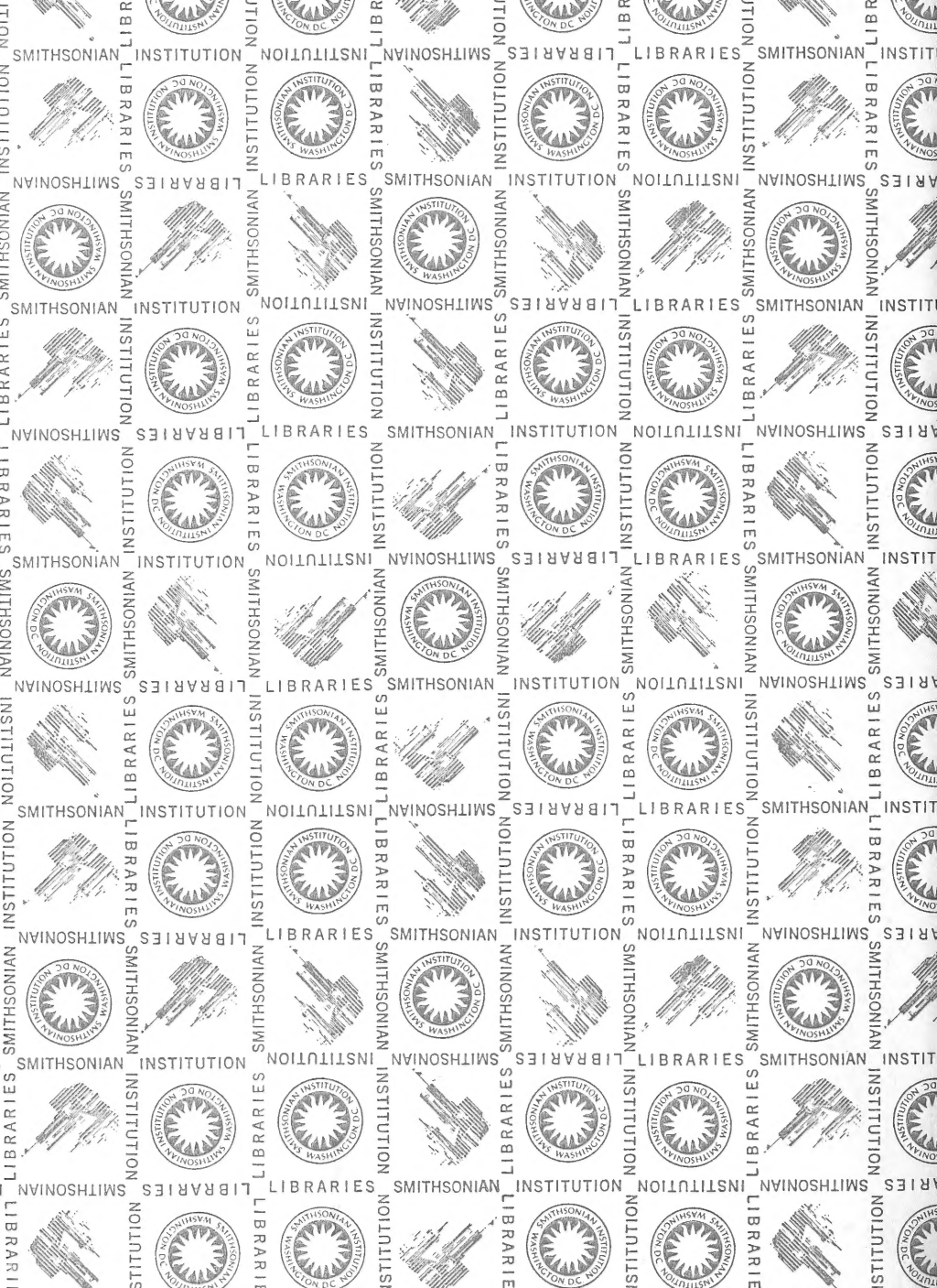
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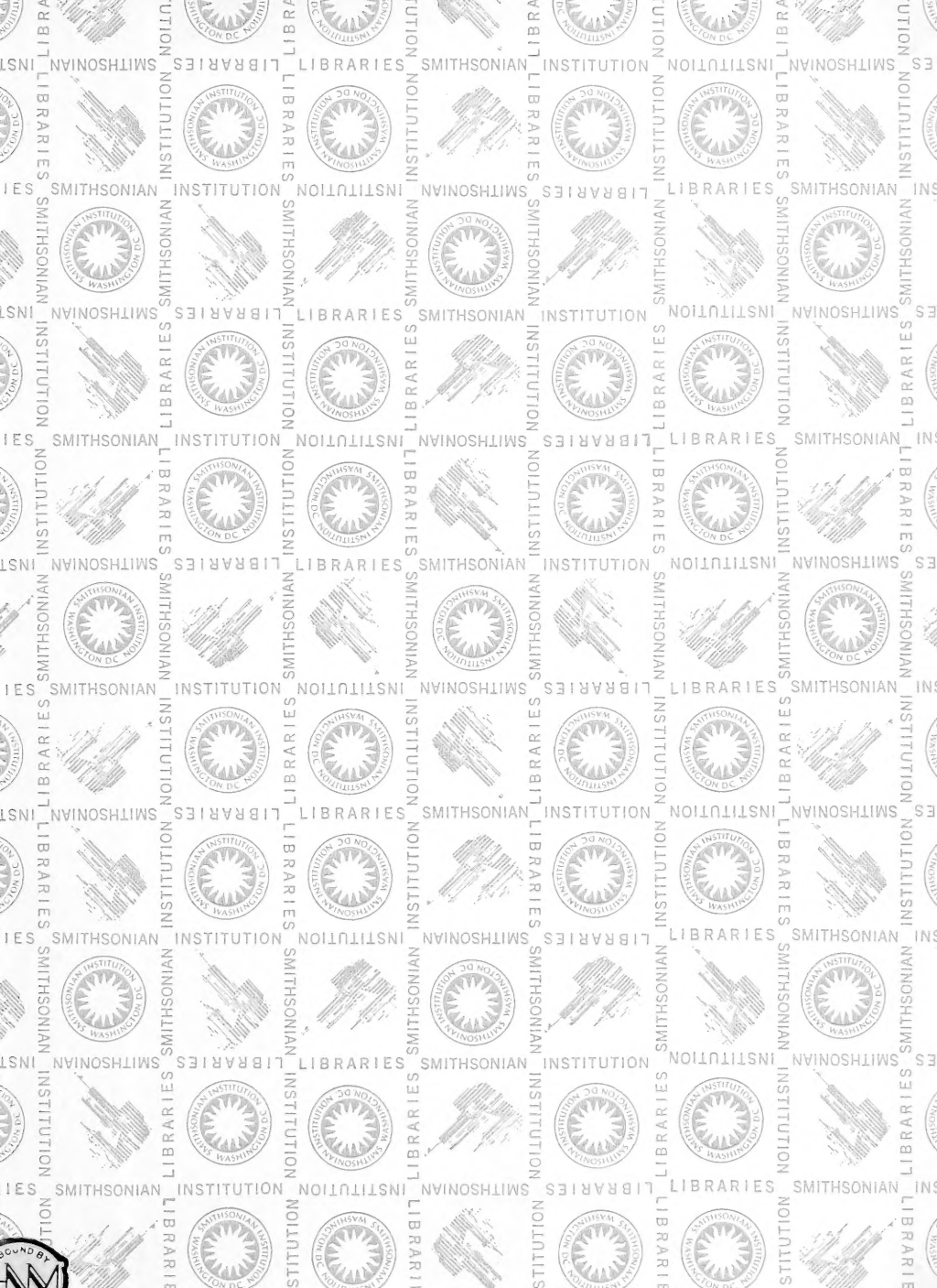
| Page | Correction | Page | Correction |
|------|---|------|---|
| 45 | Coccids in Florida: Line 1: <i>Diaspis boisduvalli</i> should read <i>Diaspis boisduvallii</i> . Line 3: <i>Diaspis echinococcus</i> should read <i>Diaspis echinocacti</i> . | 431 | EUROPEAN RED MITE should read EUROPEAN RED MITE (<i>Panonychus ulmi</i>). |
| 65 | Coccids in Florida: Line 6 from bottom: <i>Diaspis boisduvalli</i> should read <i>Diaspis boisduvallii</i> . | 465 | LEAF ROLLER MOTHS - NEW YORK - <i>Argyrotaenia semipurpurana</i> should read <i>Argyrotoxa semipurpurana</i> . |
| 77 | Other Field Crop Insects: Line 2: A PYRALID (<i>Nephoteryx</i> sp.) should read A <u>PHYCITID</u> (<i>Nephoteryx</i> sp.). | 499 | STRIPED BLISTER BEETLE (<i>Epicauta vittata</i>) should read A BLISTER BEETLE (<i>Epicauta</i> sp.). |
| 77 | Ornamental and Forest Insects: Line 6: A MEMBRACID (<i>Oxyrachis tarandus</i>) should read (<i>Oxyrhachis tarandus</i>). | 528 | LEAF ROLLER MOTHS - LOUISIANA - <i>Archips infumatana</i> should read <i>Archips infumatana</i> . |
| 83 | Line 7: .a PLANT-FEEDING LADY BEETLE (<i>Epilachna fulvognata</i>)... should read (<i>Epilachna fulvostgnata</i>). | 536 | A PYRALID MOTH (<i>Cryptoblabes aliena</i>) should read A <u>PHYCITID</u> MOTH (<i>Cryptoblabes aliena</i>). |
| 97 | PEACH FRUIT MOTH (<i>Carposina nipponensis</i> (Wlsm.)) should read (<i>Carposina nipponensis</i> (Wlsm.)). | 554 | STRAWBERRY LEAF ROLLER (<i>Archips comptana fragariae</i>) should read (<i>Ancyliis comptana fragariae</i>). |
| 106 | EASTERN TENT CATERPILLAR (<i>Malacosoma americana</i>) should read (<i>Malacosoma americanum</i>). | 619 | APHIDS: Line 3 from bottom: <i>Melanocallis kahawaluokalani</i> should read <u>Myzocallis</u> <i>kahawaluokalani</i> . |
| 135 | Paragraph 1, line 3: .a CECIDOMYID should read a CECIDOMYIID. | 676 | A CRANBERRY FRUITWORM (<i>Epiglaea apiata</i>) should read A CRANBERRY <u>BLOSSOMWORM</u> (<i>Epiglaea apiata</i>). |
| 171 | Paragraph 4, line 1: <i>Amblyseus</i> sp. should read <u>Amblyseius</u> sp. | 688 | COCCIDS - ALABAMA - <i>Neolecanium parvucornum</i> should read <i>Neolecanium cornuparvum</i> . |
| 171 | Paragraph 5: A BUD MITE (<i>Aceria paracalifornicus</i>) should read (<i>Aceria paracalifornica</i>). | 714 | COLORADO POTATO BEETLE: Line 4: (<i>Doryphorophaga dorypharae</i>) should read (<i>Doryphorophaga doryphorae</i>). |
| 186 | Paragraph 5, line 1: ...a large SPIDER (<i>Argiope</i> sp.)... should read (<u>Argiope</u> sp.). | 721 | WHITE-SPOTTED SAWYER (<i>Monochamus scutellarus</i>) should read (<i>Monochamus scutellatus</i>). |
| 242 | Sweetpotato Insects - Highlights: Line 3: <i>Rhyssomatus palmacollis</i> should read <i>Rhyssomatus palmicollis</i> . | 729 | TABANIDS - FLORIDA - <i>Agristrocerus megerlei</i> should read <u>Agkistrocerus</u> <i>megerlei</i> . |
| 280 | SNAILS - OREGON - <i>Oxychilus dreparnaldi</i> should read <i>Oxychilus draparnaldi</i> . | 731 | LADY BEETLES: Line 3: <i>Coccinella sanguinea</i> should read <u>Cycloneda</u> <i>sanguinea</i> . |
| 288 | CORRECTIONS - CEIR 13(11):232 and 240 - <i>Onychirus</i> should read <i>Onychirus</i> . | 762 | CATALPA SPHINX (<i>Cerotoma catalpae</i>) should read (<i>Cerotoma catalpae</i>). |
| 298 | Paragraph 3, line 4: <i>T. fulvulus</i> var. <i>pallidescens</i> should read <i>T. fulvulus</i> var. <i>pallidescens</i> . | 769 | AN ICHNEUMON (<i>Megarhyssa</i> sp.) should read (<i>Megarhyssa</i> sp.). |
| 306 | Paragraph 3, line 1: (<i>Gnaothotrichus materiarus</i>) should read (<u>Gnaothotrichus</u> <i>materiarus</i>). | 804 | SCIARID MIDGES (<i>Sciaria</i> spp.) should read (<i>Sciara</i> spp.). |
| 306 | Last paragraph, last line: (<i>Ceuthophilus</i> spp.) should read (<u>Ceuthophilus</u> spp.). | 868 | COCCIDS - PENNSYLVANIA - <i>Diaspis liquidambaris</i> should read <u>Aspidiotus</u> <i>liquidambaris</i> . |
| 311 | Line 3: <i>Dendrobiella aspara</i> should read <i>Dendrobiella aspera</i> . | 944 | Paragraph 1, line 6: <i>Junonia coenia</i> should read <i>Junonia evarete</i> <i>coenia</i> . |
| 338 | Paragraph 6, line 7: ...a FLEA BEETLE (<i>Systema marginella</i>) should read (<i>Systema marginalis</i>). | 987 | TORTOISE BEETLES - <i>Metriona bivittata</i> should read <u>Agroiconota</u> <i>bivittata</i> . |
| 348 | Paragraph 3, line 1: <i>Eucosma sonoma</i> should read <i>Eucosma soumana</i> . | 999 | A TYROGLYPHID MITE (<i>Aleuroglyphus ovatus</i>) should read AN <u>ACARID</u> MITE (<i>Aleuroglyphus ovatus</i>). |
| 365 | COCCIDS - MARYLAND - <i>E. euonymi</i> should read <u>E.</u> <i>euonymi</i> . | 1014 | A SPRINGTAIL (<i>Onychiurus fimentarius</i>) should read (<i>Onychiurus fimentarius</i>). |
| 373 | Paragraph 3, line 1: <i>Planococcus citri</i> should read <u>Pseudococcus</u> <i>citri</i> . | 1025 | A COCKSCOMB GALL (<i>Trishormonyia crataegifolia</i>) should read (<i>Trishormonyia crataegifolia</i>). |
| 380 | ERIOPHYIID MITES: Lines 7 and 8: <i>Paracalcarus podocarpi</i> should read <u>Paracalcarus</u> <i>podocarpi</i> . | 1080 | AN EPHYRID FLY (<i>Psilopa leucostoma</i>) should read AN EPHYRID FLY (<i>Psilopa leucostoma</i>). |
| 416 | Paragraph 2, line 8: (<i>Glarensis knausi</i>) should read (<u>Glarensis</u> <i>knausi</i>). | 1118 | NOTODONTID MOTHS - KANSAS - <i>Schizura ipomeae</i> should read <i>Schizura ipomeae</i> . |
| | | 1151 | A CERAMBYCID BEETLE (<i>Glycobius speciosus</i>) should read <u>SUGAR-MAPLE BORER</u> (<i>Glycobius speciosus</i>). |

| Page | Correction |
|------|---|
| 1152 | First paragraph, line 2: A geometrid moth should read <u>BRUCE SPANWORM</u> . |
| 1154 | A NOTODONTID MOTH (Schizura ipomeae) should read (Schizura ipomeae). |
| 1159 | A BUTTERFLY (Cisseps fulvicollis) should read A <u>SYNTOMID MOTH</u> (Cisseps fulvicollis). |
| 1188 | DARKLING BEETLES - ALABAMA - Letheticus oryzae should read <u>Latheticus</u> oryzae. |
| 1211 | CYCLAMEN MITE (Stenotarsonemus pallidus) should read (Stengotarsonemus pallidus). |

| Page | Correction |
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| 1223 | AN ANTHRIBID BEETLE (Araeocorynus cumingi) should read (Araeocorynus cumingi). |
| 1225 | Line A. . . . red-headed peanutworm should read . . . , red- <u>re</u> cked peanutworm. |
| 1293 | CITRUS FLAT MITE (Brevipalpus citri) should read (Brevipalpus <u>lewis</u> i). |
| 1338 | VESPID WASPS - VIRGINIA - Vespa maculifrons should read <u>Vespula</u> maculifrons |







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