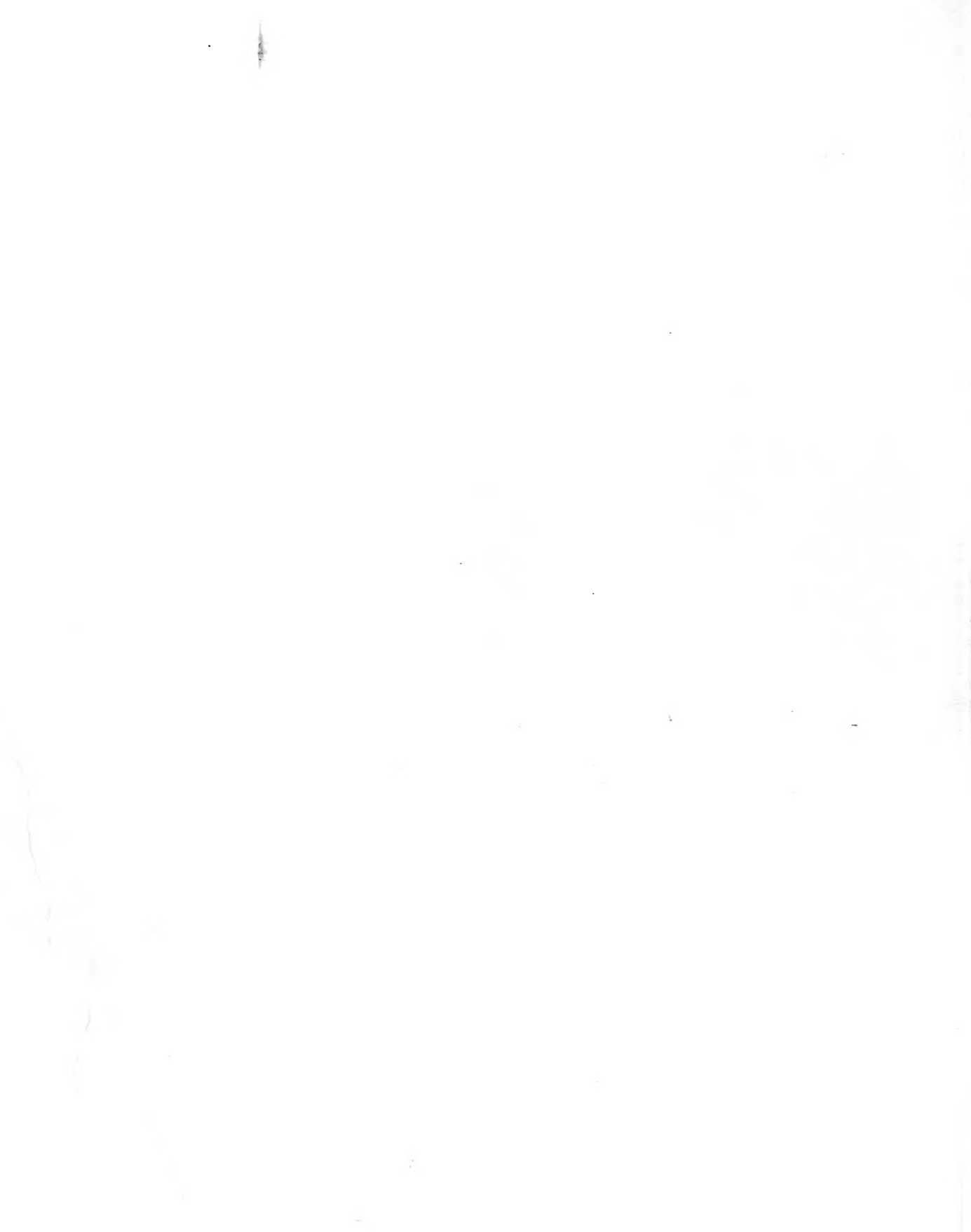


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U. S. DEPARTMENT OF AGRICULTURE



Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY

SURVEY & DETECTION OPERATIONS

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

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Plant Pest Survey

Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
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COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

SPOTTED ALFALFA APHID active as far north as Kansas and Virginia. (p. 85).

STRAWBERRY APHID and TWO-SPOTTED SPIDER MITE damaged strawberries in southern California. (p. 86).

WESTERN PINE BEETLE caused serious damage to pines in a 2,000-acre area in Madera County, California. (p. 86).

CALIFORNIA OAKWORM severe and general in Kenwood area of Sonoma County, California. (p. 86).

A NOCTUID (Melipotis acontioides) collected on Key Largo, Florida. (p. 86).

INSECT DETECTION: Pear psylla collected for first time in San Mateo County, California. (p. 85).

CORRECTION. (p. 87). ADDITIONAL NOTES. (p. 88).

SUMMARY OF INSECT CONDITIONS - 1958 - NEW JERSEY (p. 89), MARYLAND (p. 91), VIRGINIA (p. 95), WEST VIRGINIA (p. 99).

INSECTS not known to occur in the United States. (p. 101).

WEATHER OF THE WEEK ENDING FEBRUARY 9

The prolonged period of abnormally mild temperatures in the Far West was interrupted along the western slopes of the Rockies last week as a surge of cold air to the Mexican Border early in the period pushed the mercury below freezing levels on two mornings at Tucson, Arizona and a cold wave in northern sections during the weekend dropped minima to subzero levels in western Montana. Weekly averages were below normal in Arizona for the first time this year. Temperatures again averaged above normal in most of the remainder of the Far West but by only 3° or less. Abnormally cold weather continued in the mid-continent area, with weekly averages ranging from 9° below normal at Brownsville, Texas to 12° below at points near the Canadian Border, but east of the Appalachians, the week was a few degrees warmer than normal in Florida and northern New England and about seasonal elsewhere. Subzero minima occurred in all extreme northern areas east of the Divide the latter part of the week, when some extreme lows reported were -36° at International Falls, Minnesota on the 6th and -34° in the northern Adirondacks of New York State and at Newport, Vermont on the 9th.

Precipitation for the week exceeded $\frac{1}{2}$ inch along the Atlantic, Gulf and north Pacific coasts, as well as in most southeastern interior areas but was generally less elsewhere. From extreme eastern Texas to the Carolinas, heavy rains fell at the beginning and end of the week; and weekly totals of 1 to 6 inches relieved soil moisture deficiencies that had persisted for several months in some sections. On the 7th and 8th, a storm produced general precipitation over most of the Far West, the first general precipitation in extreme southern areas since last November. Moderate to heavy snows fell in the southern Sierras; Flagstaff, Arizona, measured 17 inches of snow, and some mountain stations in Arizona reported over 2 inches of moisture. As this storm moved across the lower Great Plains on the 9th, glaze, snow, rain and fog occurred from Kansas to the lower Great Lakes region, greatly hampering traffic. Some thunderstorms also occurred, and early on the morning of the 10th a tornado killed many persons, injured hundreds and caused heavy damage in St. Louis, Missouri. This was the third major tornado disaster in the city. The first was on May 27, 1896, when 306 persons were killed and property damage was estimated at about \$13 million, and the second on September 29, 1927, when the death toll was 72 and damage \$22 million. Only light snows occurred east of the Rockies during the week and snow depths in northern areas did not change significantly. (Summary supplied by U. S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

ALFALFA WEEVIL (Hypera postica) VIRGINIA - Larvae not observed in alfalfa fields in Franklin, Pittsylvania or Halifax Counties, week of January 27, but were present December 18, 1958, in Smyth and Pittsylvania Counties. (Bishop).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Populations scattered and light in southwestern small grain fields. Averaged 0-3 per linear foot. (VanCleave, et al.).

PEA APHID (Macrosiphum pisi) - NEW MEXICO - Large populations have been feeding in alfalfa fields in southern Dona Ana County. However, they have been almost completely destroyed by coccinellid larvae and adults. (N. M. Coop. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - VIRGINIA - Present in a Halifax County alfalfa field, January 27. (Bishop). OKLAHOMA - Averaged 10-150 per square foot in alfalfa fields in Tillman and Jackson Counties. (VanCleave, Pennington, Hatfield). Averaged 1.9 per trifoliate leaf in 300 samples from an alfalfa field in Payne County. (Bryan). NEW MEXICO - Generally light in most alfalfa fields in Dona Ana County. Two severe infestations found near Hatch. (N. M. Coop. Rpt.). KANSAS - Counts per 25 plants on January 30-31 were 1 and 18 in 2 fields in Riley County; 103 in Geary County; 25 and 52 in 2 fields in Marion County; 315 in one Butler County field; and 834 and 205 in 2 fields in Cowley County. (Simpson, Burkhardt).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Infestations in southwestern area scattered and light, with 0-3 per linear foot. (VanCleave, et al.). Infestations common but very light in Payne County. Averaged less than one per linear foot in most fields. (Wood).

A FALSE CHINCH BUG (Nysius sp.) - CALIFORNIA - Heavy on alfalfa in the Blythe area of Riverside County. (Cal. Coop. Rpt.).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Infestations in scattered fields of small grain throughout southwest area. Ranged 4-200 per linear foot. (VanCleave, et al.).

LEAFHOPPERS - OKLAHOMA - Unidentified species averaged 0-2 per linear foot in small grain fields in southwest area. Infestations fairly common. (VanCleave, et al.). CALIFORNIA - Aceratagallia obscura heavy in alfalfa fields in the Blythe area of Riverside County. (Cal. Coop. Rpt.).

FRUIT INSECTS

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - IDAHO - Heavy in a peach orchard of about 2 acres near Parma. Severe in some trees, with 10-12 in a six-inch square area at ground level. Every tree showed some evidence of activity. Very slight borer activity also noticed in 2 prune trees immediately adjacent to peach orchard. (Scott).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - Single male specimen collected from citrus foliage in San Mateo, San Mateo County, is first report from this county. (Cal. Coop. Rpt.).

SCALE INSECTS - NORTH CAROLINA - Aspidiotus uvae severe on 20 acres of grapes in McDowell County. (Scott). CALIFORNIA - Parlatoria oleae medium on peach trees in Willows, Glenn County, and reported from 3 orchards in Littlerock area of the Antelope Valley, Los Angeles County. Aspidiotus perniciosus heavy

on red currants in Watsonville area, Santa Cruz County and on flowering peach trees in Willows, Glenn County. A. hederæ infestations heavy on persimmon trees in Santa Paula, Ventura County, as are populations of Coccus hesperidum on Carob trees in San Diego, San Diego County. (Cal. Coop. Rpt.).

Citrus Insect Situation, Lake Alfred, Florida, Fourth Week in January - PURPLE SCALE activity declined and will remain near current low level through mid-February. FLORIDA RED SCALE activity decreased slightly. Downward trend of past month expected to level off in next 14 days with infestations still well above normal. Present moderate level of CITRUS RED MITE activity will continue until mid-February, after which it is expected to increase. There was a decrease in CITRUS RUST MITE activity. A below average level is predicted for February. (Fla. Coop. Sur.).

TRUCK CROP INSECTS

SEED-CORN MAGGOT (Hylemya cilicrura) - CALIFORNIA - Damaged a number of young fields of spinach in Orange County. Adults numerous in radish fields, but no damage observed to date. (Campbell).

THRIPS - NEW MEXICO - Populations building up on onions in Dona Ana County. Averaged 1-6 per plant, depending on field. (N. M. Coop. Rpt.).

A WHITEFLY (Aleyrodes spiraeoides) - CALIFORNIA - Heavy on pepper plants in Ventura County. (Cal. Coop. Rpt.).

STRAWBERRY APHID (Pentatrichopus fragaefolii) - CALIFORNIA - Damaging numbers have built up on strawberries in the southern part of the State, as a result of warm weather and very little rain. (Campbell).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Damaging numbers have built up on strawberries in the southern part of the State, as a result of warm weather and very little rain. (Campbell).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Causing complete killing of many ponderosa pines in the Bass Lake area of Madera County. Construction of new highway resulting in undisposed slash during a period of prolonged warm weather is responsible for this sudden outbreak. Serious damage to trees in a 2,000-acre area involved. (Whitfield).

A NOCTUID (Melipotis acontioides) - FLORIDA - Adults collected at light on Key Largo, Monroe County, January 30. (Denmark). This species caused considerable damage to poinciana at Key West in June, 1958. See CEIR 8(27):593.

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Severe, general infestation in Kenwood area, Sonoma County. Fall egg hatch, with larvae feeding all winter. Some live oaks already defoliated. This unusual condition is probably due to the warm, open winter. (Hawthorne).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - ALABAMA - Heavy infestation of pupae on 200 acres of 2-year old pines in Clarke County. Also, about 10 percent of a large number of one-year old seedlings show damage. (Ruffin).

SCALE INSECTS - ALABAMA - Spotted infestations of Icerya purchasi on ornamentals in Mobile County. Fiorinia theae and Lepidosaphes camelliae heavy on camellias in the same area. (Grimes). ARIZONA - Antonina graminis and Odonaspis ruthae severe on a Bermuda grass lawn in Phoenix, January 12. Det. H. Morrison. (Bibby). CALIFORNIA - Parlatoria camelliae heavy on camellia plants in Oakdale and medium in Modesto, Stanislaus County. Varying infestations of Aspidiotus perniciosus occurred on roses in Willows, Glenn County. (Cal. Coop. Rpt.).

CITRUS MEALYBUG (Pseudococcus citri) - CALIFORNIA - Heavy on stephanotis in Ventura, Ventura County. (Cal. Coop. Rpt.).

WHITEFLIES - ARIZONA - Tetraleurodes acaciae infested foliage of bird-of-paradise ornamental shrub at Phoenix, November 5, 1958. Det. L. M. Russell. (Bibby). CALIFORNIA - Aleyrodes spiraeoides heavy on iris in Porterville, Tulare County, and on rose in El Cerrito, Contra Costa County. (Cal. Coop. Rpt.).

SPIDER MITES - ALABAMA - Moderate infestations on ornamentals in Mobile County. (Grimes).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - NORTH CAROLINA - Examination of dairy and beef cattle during last half of January showed no grubs in 88 head in Hertford County (Royster); 3 head infested out of 235 in Gaston County (Taylor); 3 head infested of 172 in Mecklenburg County (Costner); 4 animals infested in 5 herds in Rutherford County (Toomey); of 11 animals in Jackson County all were infested (Gibson); and no grubs were found in 26 head in Hoke County (Williford). OKLAHOMA - Averaged 14 per animal on 160 yearling steers and 8 per mature cow of 210 examined in Harper County and 12 per animal on 80 yearling steers examined in Woodward County. (Howell). NEW MEXICO - Averaged 15-20 per head on cattle examined in Union and Harding Counties. (N. M. Coop. Rpt.). UTAH - Appearing in backs of cattle in Wayne, Sanpete and Grand Counties. (Knowlton).

AN ARGASID TICK (Ornithodoros kelleyi) - MARYLAND - Found in a home at Pikesville, January 19. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

PREDATORS - OKLAHOMA - Few isolated adult Hippodamia convergens found in alfalfa and small grain fields in southwest area on warm days. (VanCleave, et al.). Numbers decreased in Payne County alfalfa fields. (Bryan). Few adult Nabis sp. active in small grain fields in southwest area on warm days. (VanCleave, et al.).

CORRECTION

CEIR 8(40) : 846 - A WEBWORM (Nomophila noctuella) should be substituted for ALFALFA WEBWORM (Loxostege commixtalis). Det. H. W. Capps.

LIGHT TRAP COLLECTIONS

	<u>Pseudaletia unipuncta</u>	<u>Agrotis ypsilon</u>	<u>Feltia subterranea</u>
FLORIDA			
Gainesville 1/27,2/4		3	
LOUISIANA			
Baton Rouge 1/30-2/4	12	12	6
Franklin 1/31-2/3	3		3

ADDITIONAL NOTES

TEXAS - CORN LEAF APHID averaged 15-25 per linear foot in 2 small grain fields in Houston County. No other insect infestations found in fields checked in Houston and Madison Counties. (Hawkins). SPOTTED CUCUMBER BEETLE medium to heavy on spinach in Dimmit and Zavala Counties. Adults requiring treatment on spinach ready to harvest. (Harding). IMPORTED FIRE ANT inspections in Houston, Cherokee, Rusk, Panda, Shelby, San Augustine and Sabine Counties were negative. (Hawkins).

SUMMARY OF INSECT CONDITIONS - 1958

NEW JERSEY

Prepared by Department of Entomology,
Rutgers University

Highlights: Ample rainfall and a generally cool season had a great effect on the pest problem. APHIDS of several species were numerous, including GREEN PEACH APHID and APPLE APHID. CABBAGE LOOPER caused usual heavy damage to crucifers in late season. CORN EARWORM caused less damage than usual. CARROT WEEVIL damage was heavier than for many seasons. PEPPER MAGGOT damage was heavy in southern and central counties. APPLE MAGGOT was more active than usual. APHIDS were very abundant in spring on shade trees, particularly maples. MIMOSA WEBWORM increased in importance. BIRCH LEAF MINER was very destructive throughout the State. Flights of EASTERN SUBTERRANEAN TERMITE were heavy.

Cereal and Forage Insects: ALFALFA WEEVIL (Hypera postica) was serious on alfalfa wherever it was grown in the State. Instead of damage to alfalfa appearing at the 10-12 inch stem height, the cool, wet spring delayed weevil development and attack appeared at 18-24 inch stem height. PEA APHID (Macrosiphum pisi) was far less damaging than usual. MEADOW SPITTLEBUG (Philaenus leucophthalmus) and POTATO LEAFHOPPER (Empoasca fabae) caused lighter damage than usual. EUROPEAN CORN BORER (Pyrausta nubilalis) was present in small numbers only during early season but second-generation populations were heavier, particularly in central counties. ARMYWORM (Pseudaletia unipuncta) appeared in northern areas and caused some damage to grasses in mixed hay stands during June. CORN EARWORM (Heliothis zea) was less numerous than usual. First damage was found to early sweet corn in whorl stage, but late season damage was light. CORN FLEA BEETLE (Chaetocnema pulicaria) was not numerous on corn.

Fruit Insects: CODLING MOTH (Carpocapsa pomonella) caused less damage than usual. UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) caused some damage to apple foliage in southern counties. APPLE MAGGOT (Rhagoletis pomonella) was more serious than usual, with some damage appearing in southern parts of the State. ORIENTAL FRUIT MOTH (Grapholitha molesta) caused more than usual damage in some northern areas. EUROPEAN RED MITE (Panonychus ulmi) caused normal amount of damage, being severe in some apple orchards. PLUM CURCULIO (Conotrachelus nenuphar), MITES (Tetranychus spp.) and RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) were not especially damaging. APPLE APHID (Aphis pomi) was more numerous and difficult to control than usual. LESSER PEACH TREE BORER (Synanthedon pictipes) was found to be more damaging than in recent years.

Truck Crop Insects: CABBAGE LOOPER (Trichoplusia ni) was abundant on crucifers until late season when a virus disease killed many of them. FALL ARMYWORM (Laphygma frugiperda) egg masses were found from July on, but extensive predation of egg masses by coccinellids and chrysopids seemed to reduce damage by larvae to a low point. ASPARAGUS BEETLES (Crioceris asparagi and C. duodecimpunctata) were not as numerous as usual. MEXICAN BEAN BEETLE (Epilachna varivestis) became more numerous in late season than for several years. PEPPER WEEVIL (Anthonomus eugenii), which was present in 1957, did not appear in the infested area and presumably did not survive the winter of 1957-1958. CUCUMBER BEETLES (Acalymma vittata and Diabrotica undecimpunctata howardi) were very numerous and damaging on early cucurbits in southern part of the State. A GARDEN SPRINGTAIL (species unknown) was more numerous than usual on many vegetable crops and in alfalfa plantings. GREEN PEACH APHID (Myzus persicae) became very numerous on many crops including potatoes, tomatoes, spinach and lettuce late in the season. BEAN APHID (Aphis fabae) was much more numerous

than usual and caused damage to southern bean plantings. A FLEA BEETLE (Phyllotreta cruciferae) appeared to be the most numerous flea beetle on crucifers. GREEN CLOVERWORM (Plathypena scabra) was numerous on beans, tomatoes and other crops. PEPPER MAGGOT (Zonosemata electa) caused more losses than usual. Fields which were not protected suffered severe damage. Parsley plantings in central and southern counties were severely stunted by activity of CARROT WEEVIL (Listronotus oregonensis). STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) damaged several northern strawberry plantings.

Forest, Ornamental and Shade Tree Insects: Several species of APHIDS were very heavy during the early season, especially on maple. BIRCH LEAF MINER (Fenusa pusilla) was very abundant throughout the State on gray birch. Second-brood injury was almost as severe as that of first-brood. EASTERN TENT CATERPILLAR (Malacosoma americanum) and ELM LEAF BEETLE (Galerucella xanthomelaena) attacks were spotty. BAGWORM (Thyridopteryx ephemeraeformis) injury to arborvitae, willow, sycamore and maple was widespread but no more damaging than usual. MIMOSA WEBWORM (Homadaula albizziae) was of increasing importance on mimosa and honeylocust. Infestations ranged northward to Mercer County. LEAF GALLS on oak were abundant but of minor importance. SYCAMORE LACE BUG (Corythucha ciliata), DOGWOOD BORER (Thamnosphesia scitula) and TULIPTREE SCALE (Toumeyella liriodendri) infestations were widespread but of no greater importance than in previous years. Infestations of JAPANESE BEETLE (Popillia japonica) were heavy in some areas but infestations were spotty. Emergence was from 2-3 weeks later than normal. EUONYMUS SCALE (Unaspis euonymi) continued to be abundant on euonymus and pachysandra with crawlers present the first week of July and mid-August. AZALEA LACE BUG (Stephanitis pyrioides) was moderate with few reports of injury. In several areas, pachysandra was seriously attacked by a LEAF ROLLER (Archips purpurana). A minor brood of the PERIODICAL CICADA (Magicalicada septendecim) was present in Union County but injury was slight.

Insects Affecting Man and Animals: SALT-MARSH MOSQUITO (Aedes sollicitans) was, as usual, the most important pest species. Where rapid resort development is taking place, there are reduced numbers of mosquitoes but increased public reactions. NORTHERN HOUSE MOSQUITO (Culex p. pipiens) is becoming more important with the expansion of homes into suburban areas. Rainfall during 1958 emphasized the Culex spp. problems with greater abundance than in recent years. Aedes vexans and Mansonia perturbans produced severe local annoyance where control measures were not taken. Recent ecological studies show that there are at present 49 distinct mosquito species recognized in the State. No definite problem of insecticide resistance exists at present. Use of pre-season or pre-flood treatment of woodland pool and swamp areas has been particularly successful and is now a widely accepted procedure. Established control procedures based on water management continue as they have in past seasons. All standard methods of chemical control are in use.

Miscellaneous Insects: HAIRY CHINCH BUG (Blissus leucopterus hirtus) was abundant and destructive to lawns primarily in the northern metropolitan counties. PAVEMENT ANT (Tetramorium caespitum) continued to be the dominant household ant pest. The flight of EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) was heavy and extended from late March to early June. CLOVER MITE was abundant in April and early May. Reports of BROWN-BANDED ROACH (Supella supellectilium) infestations are increasing and those of GERMAN COCKROACH (Blattella germanica) are abundant.

SUMMARY OF INSECT CONDITIONS - 1958

MARYLAND

Compiled by W. C. Harding, Jr.*

Highlights: Damage by ALFALFA WEEVIL to unsprayed alfalfa was heavy, even though weevil activity started later than in 1957. CORN EARWORM on corn, beans and soybeans was the lowest in 3 years. EUROPEAN CORN BORER damage to corn, potatoes and peppers was above normal. Fall population in cornstalks was the highest in 3 years. Tobacco, potatoes and cabbage suffered considerably from attacks of FLEA BEETLES. FALL ARMYWORM appeared earlier and caused more than usual damage to corn. PINE SAWFLIES defoliated approximately 327,000 acres of pine in the central part of the State. ROSY APPLE APHID inflicted commercial damage in most western orchards. ANTS, CARPET BEETLES, COCKROACHES, MILLIPEDES and TERMITES were the chief pests that troubled homeowners during 1958. EUROPEAN EARWIG was found for the first time in the State, on a single property. Eradication measures were taken.

Cereal and Forage Insects: ALFALFA CATERPILLAR (Colias philodice eurytheme) caused unusual damage to alfalfa during late August and early September in Montgomery and Washington Counties. ALFALFA WEEVIL (Hypera postica) damage to unsprayed alfalfa was moderate to heavy, although spring activity was delayed by cool weather. In central area, larval populations did not reach their peak until late May. In the west, adults and larvae did moderate damage to second-growth alfalfa. Garrett County remains uninfested. ARMYWORM (Pseudaletia unipuncta) was light during 1958. A few isolated infestations in small grain on the Eastern Shore were reported during June. CLOVER LEAF WEEVIL (Hypera punctata) was about normal on alfalfa and clover during the spring. CLOVER ROOT CURCULIO (Sitona hispidula) adults were moderate during the spring and late fall on clover and alfalfa in central portions of the State. CORN EARWORM (Heliothis zea) infestations were considerably below normal. Winter temperatures were apparently unfavorable for pupae. CORN FLEA BEETLE (Chaetocnema pulicaria) populations were below normal, particularly in the spring. CORN LEAF APHID (Rhopalosiphum maidis) numbers on tassels and in whorls of sweet and field corn in most sections were light to heavy. In August, numbers on popcorn in Caroline County were heavy, requiring treatment. CORN ROOT APHID (Anuraphis maidi-radicis) caused light to moderate injury to young field corn in Kent and Charles Counties. In early June small larvae of CORN ROOT WEBWORM (Crambus caliginosellus) caused serious damage to young field corn plants in Harford County. Replanting of an entire large field was necessary. Other unidentified WEBWORMS on young corn were reported from Talbot and Montgomery Counties. CUTWORMS were about normal, being particularly troublesome in corn planted after sod.

On the Eastern Shore, first-generation damage by EUROPEAN CORN BORER (Pyrausta nubilalis) to early corn was moderate to heavy; light in other sections. Damage to mid-season and late corn on the lower Eastern Shore was above normal. The fall population as determined by the annual survey of standing cornstalks showed the State average to be 95 borers per 100 plants, the highest in 3 years. The greatest number of borers was on the Eastern Shore. Damage to wheat was generally light. FALL ARMYWORM (Laphygma frugiperda) appeared somewhat earlier than usual and damage to late sweet and field corn was above normal. Economic infestations were reported from all sections. GREENBUG (Toxoptera graminum) damaged orchard grass seedlings in Howard County in early November. Controls were applied. GREEN CLOVERWORM (Plathypena scabra) infestations on soybeans were generally lighter than in 1956 and 1957. MEADOW SPITTLEBUG (Philaenus leucophthalmus) nymphal populations on alfalfa and clover were generally light to moderate, except in western counties, where some heavy infestations were

*Cooperators were: W. E. Bickley, T. L. Bissell, L. P. Ditman, J. E. Foster, C. Graham, E. R. Krestensen and C. W. McComb.

noted. PALE-STRIPED FLEA BEETLE (Systema blanda) caused unusual feeding damage on alfalfa leaves in several Frederick County areas during June. PEA APHID (Macrosiphum pisi) appeared later on alfalfa than usual, resulting in less damage to the first crop than in previous years. Some second-growth alfalfa was injured in western counties. POTATO LEAFHOPPER (Empoasca fabae) was generally light on alfalfa throughout the summer. SAP BEETLES, particularly DUSKY SAP BEETLE (Carpophilus lugubris), were troublesome in ears of sweet and field corn throughout the season. In the early spring SEED-CORN MAGGOT (Hylemya cilicrura) caused more than normal damage to sprouting sweet and field corn. SOUTHERN CORNSTALK BORER (Diatraea crambidoides) was light to moderate in tassels and whorls of sweet and field corn on the Eastern Shore, during July and August. SPIDER MITE infestations on soybeans were the lowest in years. THRIPS caused light to moderate streaking of young corn and soybeans on the Eastern Shore during June.

Fruit Insects: APPLE MAGGOT (Rhagoletis pomonella) damaged apples at three localities in central and western Maryland. In one orchard serious damage occurred. Emergence of first-brood CODLING MOTH (Carpocapsa pomonella) began later than usual and extended to mid-July. Control proved more effective than in 1957, although moderate damage was caused by second and third-brood larvae. EUROPEAN RED MITE (Panonychus ulmi) populations on apple were higher than in 1957 and a more strenuous control program was required. During July, prunes in Washington County were damaged. ORIENTAL FRUIT MOTH (Grapholitha molesta) caused light to moderate damage to peaches in Montgomery County. PLUM CURCULIO (Conotrachelus nenuphar) was extremely light on apples and peaches. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) was normal on apple. ROSY APPLE APHID (Anuraphis roseus) was probably the most serious apple pest during 1958. Commercial damage to apples occurred in most orchards in the west and in some instances occurred before the petal-fall stage. In March, some growers reported infestations of SAN JOSE SCALE (Aspidiotus perniciosus) and FORBES SCALE (A. forbesi). TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was less abundant than in 1957, damage being confined to localized areas. UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) infestations were very light generally.

Truck Crop Insects: ASPARAGUS BEETLE (Crioceris asparagi) was heavier than usual in most sections. BEAN LEAF BEETLE (Cerotoma trifurcata) was below normal. CABBAGE APHID (Brevicoryne brassicae) was heavy on cabbage and broccoli, particularly late in the season. CABBAGE LOOPER (Trichoplusia ni) gave considerable trouble on cabbage, broccoli, tomatoes and spinach. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) numbers on potatoes and tomatoes were about normal. CORN EARWORM (Heliothis zea) was not as destructive to pods of late snap and lima beans as in 1956 and 1957. EUROPEAN CORN BORER (Pyrausta nubilalis) damage to peppers on the Eastern Shore was the heaviest on record. Well over one-third of the peppers grown for processing were lost. Damage to potatoes was also heavy. Among the FLEA BEETLES that caused damage were POTATO FLEA BEETLE (Epitrix cucumeris) on potatoes, TOBACCO FLEA BEETLE (Epitrix hirtipennis) on young tomato plants and Phyllotreta spp. on cabbage and other crucifers. GREEN CLOVERWORM (Plathypena scabra) was fairly common on lima beans on the Eastern Shore during the summer. GREEN PEACH APHID (Myzus persicae) was moderate to heavy on peppers late in the season. Some serious infestations on peppers were noted in northern Worcester County. HORNWORMS (Protoperce spp.) were about normal on tomatoes and peppers on the Eastern Shore. A few heavy infestations were reported. IMPORTED CABBAGEWORM (Pieris rapae) infestations on crucifers were general. MEXICAN BEAN BEETLE (Epilachna varivestis) was about normal on commercial acreages of lima and snap beans. As usual, home gardeners experienced considerable trouble. In the fall, MORNING-GLORY LEAF MINER (Bedellia somnulentella) seriously infested the foliage of a sweetpotato field at Salisbury. Populations of PEA APHID (Macrosiphum pisi) were not as injurious to peas as in 1956 and 1957, due primarily to its late occurrence. POTATO APHID (Macrosiphum solanifolii) was light to moderate on potatoes and tomatoes on

the Eastern Shore. Some heavy infestations were noted on tomatoes in Dorchester and Caroline Counties in June. POTATO LEAFHOPPER (Empoasca fabae) numbers on beans and potatoes decreased from previous years. SPIDER MITES on beans, cucurbits and tomatoes were less of a problem than in 1957. STRIPED CUCUMBER BEETLE (Acalymma vittata) was common and damaged young squash, cucumber and cantaloup plants in most sections. TOMATO FRUITWORM (Heliothis zea) caused some injury locally to tomatoes on the Eastern Shore. VINEGAR FLIES were again abundant at tomato canneries late in the season. YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) caused light injury to tomato foliage late in the summer.

Tobacco Insects: BLACK CUTWORM (Agrotis ypsilon) caused serious damage to 12 acres of newly-set tobacco plants in St. Marys County. GREEN PEACH APHID (Myzus persicae) infestations were generally light to moderate. A few fields required treatment. Populations of both broods of HORNWORMS (Protoparce spp.) were about normal. MIDGE LARVAE were abundant in tobacco beds near Waldorf, causing light to moderate damage by uprooting young plants. TOBACCO BUDWORM (Heliothis virescens) infestations increased for the third straight year. TOBACCO FLEA BEETLE (Epitrix hirtipennis) was heavy on newly-set plants in most areas. In some fields of newly transplanted tobacco, counts of 20 beetles per plant were common. During the summer, populations were moderate to heavy and in some fields the middle, choice leaves showed heavy feeding. VEGETABLE WEEVIL (Listroderes costirostris obliquus) damage reports were fewer than in 1957, although the insect did extend its range somewhat in the tobacco-growing area. A few heavy infestations were noted in Calvert County.

Forest, Ornamental, and Shade Tree Insects: Various species of APHIDS gave the usual amount of trouble on rose, tulip poplar, Norway maple, oaks and pine. ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) adults caused light to moderate damage to the foliage of seedling oaks in the central counties. BAGWORM (Thridopteryx ephemeraeformis) seriously damaged arborvitae, cedar and occasionally other evergreens and deciduous trees in most sections. In early spring, tents of EASTERN TENT CATERPILLAR (Malacosoma americanum) were abundant in most sections. EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) damaged red pine in Garrett County. A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) occasionally damaged azalea, privet and other ornamentals in Montgomery and Prince Georges Counties. LACE BUGS caused considerable injury on azaleas, rhododendrons, oaks and sycamore. LOCUST LEAF MINER (Chalepus dorsalis) again seriously damaged black locust foliage over most of the State. NANTUCKET PINE MOTH (Rhyacionia frustrana) caused serious damage to natural and planted pines in eastern Maryland. PINE SAWFLIES - The first larvae of Neodiprion pratti pratti appeared on April 21 in central Maryland, and feeding continued until late May. Aerial surveys showed about 327,000 acres of pine defoliated, with over 12,000 acres classed as seriously defoliated. Another species (probably N. taedae) was present in large numbers on loblolly pine in St. Marys County in late July. Among the many species of SCALE INSECTS causing concern during 1958 were AZALEA BARK SCALE (Eriococcus azaleae) on azalea and rhododendron, EUONYMUS SCALE (Unaspis euonymi) on euonymus, OBSCURE SCALE (Chrysomphalus obscurus) on oak, OYSTERSHELL SCALE (Lepidosaphes ulmi) on lilac, birch, chestnut and maple, PINE NEEDLE SCALE (Phenacaspis pinifoliae) on various pines, PUTNAM SCALE (Aspidiotus ancylus) on dogwood, SAN JOSE SCALE (A. perniciosus) on Japanese quince and others, WHITE PEACH SCALE (Pseudaulacaspis pentagona) on flowering cherry and privet. SPIDER MITES were generally below normal on most trees and ornamentals. In July and August VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) seriously defoliated oaks in southeastern Cecil County. Other pests of trees and shrubs were ASIATIC GARDEN BEETLE (Autoserica castanea), AZALEA LEAF MINER (Gracilaria azaleella), BOXWOOD LEAF MINER (Monarthropalpus buxi), BOXWOOD PSYLLID (Psylla buxi), ELM LEAF BEETLE (Galerucella xanthomelaena), FOREST TENT CATERPILLAR (Malacosoma disstria) on mixed hardwoods at Town Hill Mountain, HOLLY LEAF MINER (Phytomyza ilicis), MIMOSA WEBWORM (Homadula albizziae) on mimosa and honeylocust, ORANGE-STRIPED OAKWORM (Anisota senatoria) on hardwoods and PALES

WEEVIL (Hylobius pales) on white pine in a Christmas tree planting in Harford County. During August and September, grubs of JAPANESE BEETLE (Popillia japonica) and NORTHERN MASKED CHAFER (Cyclocephala borealis) were destructive to turf in suburban areas.

Man and Animal Insects: AMERICAN DOG TICK (Dermacentor variabilis) was abundant in most sections in early summer. During most of the season BLACK FLIES (particularly Simulium jenningsi) annoyed humans throughout the Maryland metropolitan area of Washington and at various western localities. BLACK WIDOW SPIDER (Latrodectus mactans) again caused considerable concern to homeowners in suburban sections. BROWN DOG TICK (Rhipicephalus sanguineus) infestations in homes were numerous, being about the same as in 1957. CATTLE LICE were more abundant than usual. FLEAS were troublesome on humans, dogs and cats, in most sections. HORN FLY (Siphona irritans) was serious on dairy cattle in most sections. As usual, HOUSE FLY (Musca domestica) was prevalent about homes and barns, particularly where sanitation was lacking. MOSQUITOES - Aedes spp. were not as numerous as in 1957; however, increases in Culex spp. and Psorophora spp., due to the extensive wet season, were noted. Decreases in populations were recorded in areas where permanent control work had been carried out. In September, one horse died of encephalitis at Cambridge. Homeowners in Carroll and Washington Counties were bitten by TROPICAL RAT MITE (Ornithonyssus bacoti).

Stored-product Insects: ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was moderate to heavy in farm stored corn and small grains in all sections during the fall. It appears to be the number one pest of stored corn and small grains in Maryland. Other stored-product pests reported were CADELLE (Tenebroides mauritanicus) in wheat and barley, CIGARETTE BEETLE (Lasioderma serricornis) in cereals and spices, GRANARY WEEVIL (Sitophilus granarius) in wheat, barley and oats, INDIAN-MEAL MOTH (Plodia interpunctella) in wheat and meal, MEAL MOTH (Pyralis farinalis) on ground cattle feed, RICE WEEVIL (Sitophilus oryza) in wheat, SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) in small grains and cereals and a FLOUR BEETLE (Gnathocerus maxillosus) in refuse oats.

Household Insects: ANTS, particularly PAVEMENT ANT (Tetramorium caespitum), caused homeowners in most sections considerable concern during the spring and summer. CARPET BEETLES, principally Attagenus piceus and Anthrenus flavipes, seemed to be more abundant than usual. GERMAN COCKROACH (Blattella germanica) infestations in homes and apartments were common, particularly in Baltimore City. Reports of MILLIPEDES entering homes during the summer were more numerous than usual. Other household pests of importance during 1958 were BOXELDER BUG (Leptocoris trivittatus), BROWN-BANDED ROACH (Supella supellectilium), CENTIPEDES, CLOVER MITE, CRICKETS, EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes), GROUND BEETLES, OLD-HOUSE BORER (Hylotrupes bajulus), SILVERFISH (Lepisma saccharina) and SPRINGTAILS.

Miscellaneous Insects: EUROPEAN EARWIG (Forficula auricularia) adults were found for the first time on a single property at Silver Spring in September. They were brought in by a homeowner moving plants and furniture from an infested area outside the State. Eradication measures were undertaken. COWPEA CURCULIO (Chalcoedermus aeneus) infested blackeyed peas at Lexington Park. Large numbers of JAPANESE WEEVIL (Calomycterus setarius) were found in and about a home at Cockeysville during July. MITES were abundant in the litter of a poultry house at Salisbury. During early May, WHARF BORER (Naccerdes melanura) larvae damaged a wood boat at Cambridge.

SUMMARY OF INSECT CONDITIONS - 1958

VIRGINIA

Compiled by A. P. Morris

Cereal and Forage Insects: EUROPEAN CORN BORER (Pyrausta nubilalis) infestation, in general, was one of the highest on record in the State. Larvae heavily damaged sweet corn and were heavy in field corn in all parts of the State. Heavy damage to corn occurred from mid-June through October. A fall abundance survey in 10 southwestern and 10 northern counties showed the average number of borers per 100 plants in the 2 areas to be 252 compared with 117 in 1957, and 80 percent of the stalks infested in the fields compared with 63 percent in 1957. Wheat was damaged to some extent in Southampton and Richmond Counties and sorghum was very heavily damaged in Westmoreland County. There were 3 generations during 1958. ALFALFA WEEVIL (Hypera postica) is estimated to infest approximately 245,000 of the total 280,000 acres of alfalfa in the State and controls were applied to approximately 195,000 acres during 1958. The net value of control was estimated to be \$2,652,000. On the 50,000 acres infested, but not treated, the species was too light to justify control, but a part of this acreage will require control in 1959. Infestations were found in 4 additional counties during 1958, leaving only 6 extreme southwestern counties uninfested. Two of these, Buchanan and Dickenson Counties, have very little alfalfa. CORN EARWORM (Heliothis zea) caused heavy damage to field and sweet corn in all parts of the State during 1958 but damage to soybeans, peanuts and sorghum were much less than during the preceding 3 years. SOYBEAN CYST NEMATODE (Heterodera glycines) was found for the first time in the State in Nansemond County during September.

ARMYWORM (Pseudaletia unipuncta) damage to field and sweet corn, small grains, grasses, alfalfa and sorghum was light to severe during 1958. Infestations were not general, but were most common in eastern and southwestern counties with some scattered damage in other areas. FALL ARMYWORM (Laphygma frugiperda) damaged late corn, sorghum, soybeans, peanuts, rye, alfalfa and winter pastures in scattered localities. Late corn and sorghum suffered heaviest damage from this species. MEADOW SPITTLEBUG (Philaenus leucophthalmus) was heavy in pastures throughout the State and was especially heavy in alfalfa and clover in southwestern counties. Controls were justified in these counties, although practically none were used, and will be needed in most alfalfa fields in this area in the spring of 1959. SAP BEETLES were extremely heavy on sweet and field corn in all parts of the State during 1958 and caused considerable loss in some areas as controls were not always completely successful. Sweet corn in many eastern areas was especially heavily damaged. JAPANESE BEETLE (Popillia japonica) larvae damaged roots of lawn grasses and ornamentals and adults damaged corn, soybeans, roses, chestnut tree foliage, shrubs, flowering plants and other host plants in several parts of the State. Adults on weeds in fields of small grains passed through thrashing machines and into the grain in some eastern areas and in Shenandoah County, creating a quarantine problem. Populations were approximately the same as in 1957 although probably smaller in 2 or 3 areas. GREEN JUNE BEETLE (Cotinis nitida) larvae damaged lawns in most of the State but not to the extent experienced in 1957. POTATO LEAFHOPPER (Empoasca fabae) was a problem on peanuts in southeastern Virginia and on alfalfa in some scattered fields during 1958. PEA APHID (Macrosiphum pisi) populations increased until they posed a threat in many fields during the middle of May, but natural enemies built up and helped keep infestations down. VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) was a minor problem on soybeans in 1958. GREEN CLOVERWORM (Plathypena scabra), along with other species of caterpillars, was a problem by August but infestations practically disappeared and were not a problem the remainder of the year. YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) and SALT-MARSH CATERPILLAR (Estigmene acrea) became numerous and general on soybeans in eastern and southeastern Virginia counties about mid-August, but damage

was light. SPOTTED ALFALFA APHID (Therioaphis maculata) infestations were building up in southwestern counties during early October and two fields of heavily damaged fall-seeded alfalfa were observed in Franklin County in late November. BEAN LEAF BEETLE (Cerotoma trifurcata) was present in large numbers on soybeans in eastern and southeastern Virginia during August but did little economic damage. APHIDS were heavy on small grains, sorghum and alfalfa in a few instances during 1958. HESSIAN FLY (Phytophaga destructor) damaged wheat in Pittsylvania, Wythe and Montgomery Counties during June. Damage by this species may be more widespread than suspected during recent years.

Fruit Insects: The third brood of CODLING MOTH (Carpocapsa pomonella) larvae was the largest in several years in central orchards but no instances of heavy economic losses were reported. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) was expected to be severe in northern and central area apple orchards during 1958. However, only 5 percent of the apples in northern orchards had been damaged by third-brood larvae when the season was over. Damage was severe in scattered orchards where controls were not properly applied. ROSY APPLE APHID (Anuraphis roseus) was quite heavy in northern area orchards during June and required more than usual efforts to keep it below the injury level. This species accounted for one-third of the crop loss in some orchards where controls were not applied. JAPANESE BEETLE (Popillia japonica) did considerable damage to small plantings in home gardens and orchards. Grapevines were probably the heaviest damaged of the cultivated fruits. APPLE APHID (Aphis pomi), WOOLLY APPLE APHID (Eriosoma lanigerum) and APPLE GRAIN APHID (Rhopalosiphum fitchii) were of minor importance to apples during 1958. PLUM CURCULIO (Conotrachelus nenuphar) was only a minor problem in peach and apple orchards during 1958. However, one extra spray application was used in many peach orchards because of this pest. WALNUT CATERPILLAR (Datana integerrima) was heavy and partially defoliated walnut and pecan trees in southern Charlotte County and in Accomack, Northampton and Amherst Counties.

Truck Crop Insects: EUROPEAN CORN BORER (Pyrausta nubilalis) damaged potatoes, peppers and occasionally snap beans in the eastern area. Larvae heavily damaged potato vines in some fields in Westmoreland, Stafford, Hanover, Northampton, Accomack and Caroline Counties during late May and July. CABBAGE LOOPER (Trichoplusia ni) was responsible for extensive damage to some crops crops of kale, collards, cabbage, broccoli and tomatoes in eastern, southeastern and Eastern Shore counties. Regular controls failed to give adequate protection. Peppers, cucumbers and horseradish were damaged to a lesser extent. IMPORTED CABBAGEWORM (Pieris rapae) and DIAMONDBACK MOTH (Plutella maculipennis) larvae were responsible for losses to growers in some instances because of damage to cabbage, broccoli, kale, collards and several other cole crops in the truck-crop areas of the State. CORN EARWORM (Heliothis zea) damaged tomatoes and snap beans in truck areas of the State. Infestations heavily damaged tomatoes and sweet corn in eastern Virginia and on the Eastern Shore, where controls were not adequate. Various species of FLEA BEETLES damaged truck crops during 1958. POTATO FLEA BEETLE (Epitrix cucumeris) and SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) damaged potato and sweetpotato plants, PALE-STRIPED FLEA BEETLE (Systema blanda) was heavy on beans in some gardens and TOBACCO FLEA BEETLE (Epitrix hirtipennis) heavily damaged fall potatoes during September. Unidentified species also did heavy damage to young corn, cucumber plants, late cole crops, peppers and cabbage until late in September. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) damage was not extensive in 1958 because controls were effective. CUTWORMS damaged young tomato plants, cabbage, bean plants, sweetpotatoes, peppers, cole crops and almost mature tomato fruits in the truck-crop areas and in gardens. Rigid control schedules were necessary to protect young cole crops and peppers during August. Only two species were identified and reported, BLACK CUTWORM (Agrotis ypsilon) and VARIEGATED CUTWORM (Peridroma margaritosa). Black cutworm is believed to be the species mainly responsible for the damage during 1958. YELLOW-STRIPED

ARMYWORM (Prodenia ornithogalli) damaged tomatoes, some cole crops and peppers in the eastern area during July. Growers had to follow rigid control schedules to prevent heavy losses. FALL ARMYWORM (Laphygma frugiperda) damage occurred to some cole crops, almost mature tomatoes and sweet corn in eastern areas. MEXICAN BEAN BEETLE (Epilachna varivestis) was relatively light on snap beans in 1958. Various species of APHIDS were of minor importance to truck crops during 1958. POTATO LEAFHOPPER (Empoasca fabae) was a very minor problem on potatoes in eastern Virginia. CABBAGE CURCULIO (Ceutorhynchus rapae) adults were present in all of the cabbage fields examined in southern Northampton County during May, damage ranged from 2 to 100 percent.

Tobacco Insects: HORNWORMS (Protoparce spp.), TOBACCO FLEA BEETLE (Epitrix hirtipennis), BUDWORMS (Heliothis spp.), CUTWORMS and GREEN PEACH APHID (Myzus persicae) were of minor importance on tobacco during 1958, primarily because of the effectiveness of controls that were used in time to prevent damaging infestations.

Cotton Insects: BOLL WEEVIL (Anthonomus grandis) rate of survival in March for overwintering adults was 1.6 percent for 4 southern counties. The mean for the 4 county areas was 53.8 weevils per acre. Some fields had sufficient punctured squares to justify treatments during the first week of August. A fall survey in 4 counties during December revealed a mean of 511 weevils per acre in hibernation. COTTON APHID (Aphis gossypii) was generally light in cotton fields during 1958 and BOLLWORMS (Heliothis spp.) were also generally light in most fields.

Forest, Ornamental and Shade Tree Insects: IPS BEETLES (Ips grandicollis, I. pini, I. avulsus and I. calligraphus) damaged red, white, pitch, Virginia, shorleaf, loblolly and Scotch pines in scattered localities, but no serious infestations were reported. Damage was frequently in association with other insects. SOUTHERN PINE BEETLE (Dendroctonus frontalis) damage was light and scattered during 1958, no serious infestations being reported. Most frequent damage was to loblolly and shortleaf pines. TURPENTINE BEETLES (Dendroctonus terebrans and D. valens) killed pine forest and shade trees in widely scattered localities, but no serious outbreaks were reported and damage was less than in 1957. PINE MOTH (mostly Rhyacionia frustrana) infestations were widespread and heavy in some plantations, light to medium in others in eastern and southeastern areas. Defoliation caused by SAWFLY (Neodiprion spp.) larvae occurred twice during 1958. Mostly Virginia and shortleaf pines were defoliated in the Piedmont Plateau area and in some eastern counties during April, May and June, while loblolly, Virginia and shortleaf pines were defoliated in northern, central, south central, eastern and other scattered areas from July through October. At least two species were responsible for damage during the two periods. WHITE-PINE WEEVIL (Pissodes strobi) damaged terminals of pine seedlings, young pines and plantations of pines in various areas. The greatest part of the trees damaged were white pines in the western area of the State. PALES WEEVIL (Hylobius pales) damaged about 50 percent of 100 acres of loblolly pines in Sussex County and pines in Nelson, Giles and Chesterfield Counties. Several species of SCALE INSECTS were of importance on forest and shade trees and ornamental plants during 1958. Infestations were usually scattered and affected individual or small groups of plants. Various species of APHIDS attack trees and ornamental plants in Virginia every year, but they are rarely the direct cause of the death of the host plants. Various species of SPIDER MITES, predominately Tetranychus telarius, damaged ornamental plants in most areas of the State to a varying degree. BAGWORM (Thyridopteryx ephemeraeformis) damaged cedars, arborvitae and evergreen shrubs and trees in all parts of the State from May into September. Reports of heavy infestations were received from several counties and cities. MIMOSA WEBWORM (Homadaula albizziae) damaged mimosa trees and in some instances locust trees in all areas of the State.

EASTERN TENT CATERPILLAR (Malacosoma americanum) was obvious on plum, cherry, apple and other host trees during late April and May. They were widespread and general in some areas in northern, eastern, southeastern and southwestern Virginia. FALL WEBWORM (Hyphantria cunea) fed on the leaves of hardwoods in general in Frederick, Clarke, Warren and Shenandoah Counties, on pecans in southeastern and Eastern Shore counties and were conspicuous on pecan, sourwood and persimmon trees in Pittsylvania County. ELM LEAF BEETLE (Galerucella xanthomelaena) larvae fed to a varying degree upon leaves of elm trees in all parts of the State. GIANT HORNET (Vespa crabro germana) damage to lilac bushes was heavy during September and part of October in Lunenburg and Montgomery Counties. PINE SPITTLEBUG (Aphrophora parallela) was not as prevalent as in the past two years but was obvious on loblolly pines during May in several counties and heavy on approximately 100 pines in Montgomery County during early June. SYCAMORE LACE BUG (Corythucha ciliata) was heavy on some sycamore trees in King William and Southampton Counties.

Insects Affecting Man and Animals: CATTLE GRUBS (Hypoderma spp.) were a problem throughout the State again during 1958. From data collected, H. lineatum apparently emerges first in the State and H. bovis later, and H. bovis is the more common species in the mountainous area of the State. HOUSE FLY (Musca domestica) infestations remained lighter than usual in southeastern area during 1958. MOSQUITOES were a problem in some eastern and southeastern parts of the State. Different species of SAND FLIES caused discomfort and annoyance to man and animals in many areas, especially for short periods of time. TABANIDS were more numerous than usual this year and were troublesome on cattle and livestock in Goochland, Lunenburg and Cumberland Counties during late July and early August. STABLE FLY (Stomoxys calcitrans) did not become a serious problem in any area of the State. FLEAS were a problem in homes, some places. CATTLE LICE were a problem on animals in some herds during the winter, spring and fall of the year. SHEEP SCAB MITE (Psoroptes equi ovis) infestations occurred on 2,413 of 9,258 sheep inspected during 1958. Infested animals were treated under the supervision of personnel from the office of the State Veterinarian. TICKS were a problem in woods and along roadways in some eastern and southeastern areas where they bothered workers and animals. BROWN DOG TICK (Rhipicephalus sanguineus) was heavy in several homes and on dogs in some instances.

Stored-product Insects: HIDE BEETLE (Dermestes maculatus) larvae and adults damaged home cured meat in Sussex and Brunswick Counties. LARDER BEETLE (D. lardarius) damaged meat stored on a farm in Culpeper County. RED-LEGGED HAM BEETLE (Necrobia rufipes) larvae and adults damaged meat stored on a farm in Sussex County and at a home in Lunenburg County. TOBACCO MOTH (Ephestia elutella) larvae were heavy on tobacco in a pack house in Lunenburg County during October. KHAPRA BEETLE (Trogoderma granarium) survey of 67 business establishments during January, February and March revealed no infestations.

Beneficial Insects: LADY BEETLES were responsible for reducing or bringing under control infestations of aphids on alfalfa, corn, tobacco and various trees during 1958. SYRPHID larvae were present in large numbers and helped reduce populations of aphids during the spring, summer and fall.

Miscellaneous Insects: TERMITES were the most important of the structural wood insects during 1958 and POWDER POST BEETLES were second to them. Several additional termite infestations were found. OLD-HOUSE BORER (Hylotrupes bajulus) were the most prevalent of the powder-post beetles. COCKROACHES were the number one household insect pest during 1958 and infestations of ORIENTAL COCKROACH (Blatta orientalis) appeared to be the most prevalent of the several species. Infestations of GERMAN COCKROACH (Blattella germanica), BROWN-BANDED ROACH (Supella supellectilium) and AMERICAN COCKROACH (Periplaneta americana) were also reported from various localities. ANTS of various species emerged into and around many homes and buildings, causing concern to the owners.

SUMMARY OF INSECT CONDITIONS - 1958

WEST VIRGINIA

Compiled by C. K. Dorsey

Highlights: JAPANESE BEETLE populations were lighter for the State in general. EUROPEAN CORN BORER was less numerous in most counties. EASTERN TENT CATERPILLAR defoliation was heavy in many areas. POTATO FLEA BEETLE was prevalent in many counties and caused appreciable damage.

Cereal and Forage Insects: MEADOW SPITTLEBUG (Philaenus leucophthalmus) was not as numerous as in 1957, but in localized areas populations were heavy and damage was apparent. SPOTTED ALFALFA APHID (Theriophis maculata) summer and fall surveys were negative. ALFALFA WEEVIL (Hypera postica) continued its spread into five new counties; damage to the first cutting was heavy in untreated fields. PEA APHID (Macrosiphum pisi) infestations were light. CORN EARWORM (Heliothis zea) damage was general, but light; about 5 percent of the ears were infested in the principal sweet corn producing region. EUROPEAN CORN BORER (Pyrausta nubilalis) populations were lighter this year; in 109 fields surveyed in 14 counties the average was 24.86 borers per 100 stalks.

Fruit Insects: CODLING MOTH (Carpocapsa pomonella) damage was evident in some orchards; harvest damage estimate is about 5 percent. Infestations of SPIDER MITES (Panonychus ulmi and Tetranychus spp.) were lower than the anticipated levels. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) caused appreciable damage in some orchards.

Truck Crop and Garden Insects: POTATO FLEA BEETLE (Epitrix cucumeris) infestations were widespread and heavy in many sections of the State. STRIPED FLEA BEETLE (Phyllotreta striolata) caused considerable damage to cabbage in several areas. There were reports from some counties of damage by COLORADO POTATO BEETLE (Leptinotarsa decemlineata). Populations of both the STRIPED CUCUMBER BEETLE (Acalymma vittata) and SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) were below the usual level though cucurbits in at least 3 counties suffered rather heavy damage. CORN LEAF APHID (Rhopalosiphum maidis) infestations were severe in the northern panhandle.

Tree Insects: EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) and NANTUCKET PINE MOTH (R. frustrana) infestations were prevalent statewide and caused considerable damage particularly in Christmas tree plantations. EASTERN TENT CATERPILLAR (Malacosoma americanum) caused extensive and heavy damage statewide; a SARCOPHAGID (Sarcophaga aldrichi) was especially numerous this year in regions heavily infested with tent caterpillars. FOREST TENT CATERPILLAR (Malacosoma disstria) was numerous in several localized areas; in one of these they were the principal defoliators in about 300 acres of forest. A GEOMETRID (Phigalia titea) was the main defoliator in several forest areas; one of these included about 2,000 acres which was from 80 to 100 percent defoliated. A PSYLLID (Trioza tripunctata) was present in moderate to heavy infestations in many areas and caused damage to red, Scotch and white pine. A PISSODES WEEVIL caused damage to young pines in a number of counties. BARK BEETLES (Ips sp. and Dendroctonus spp.) caused severe damage to pines in widespread areas of the State. PALES WEEVIL (Hylobius pales) was damaging in several pine nurseries. PINE BARK APHID (Pineus strobi) infestations were common in pine nurseries and plantations. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) was heavy in one county where it was attacking living trees. ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) infestations were more widespread this year and in some southern areas of the State they were quite numerous. JAPANESE BEETLE (Popillia japonica) populations were lighter this year than last; in some areas, however, they were heavy and extensive damage was suffered by their host plants.

There was some spread into new areas of infested counties. MIMOSA WEBWORM (Homadaula albizziae) caused some damage in several localized sections. LOCUST LEAF MINER (Chalepus dorsalis) infestations were moderate to heavy in the northern half of the State. There were reports and observations of the following insects from various counties: rose chafer, bagworm, boxwood leaf miner, sycamore lace bug, rose leaf beetle, birch leaf miner, European fruit lecanium, woolly elm aphid, scurfy scale and euonymus scale. GYPSY MOTH (Porthetria dispar) trapping results and the EUROPEAN CHAFER (Amphimallon majalis) survey results for the State were negative this season.

Insects Affecting Man and Animals: HOUSE FLY (Musca domestica) populations were below the usual level in most areas of the State. DOG and CAT FLEAS were numerous this year. CATTLE GRUB (Hypoderma spp.) infestations in general were moderate. TICKS were moderate to heavy. SHEEP KED (Melophagus ovinus) infestations were moderate. Most CATTLE LICE infestations were reported as being of moderate intensity. In general, HORN FLY (Siphona irritans) populations were prevalent, but moderate. LICE were troublesome in localized areas on dogs and hogs where they were reported in medium to heavy infestations. Some of the other pests causing trouble in various counties were: ear mites on dogs, sheep bot fly, warbles in dogs and cats, horse biting lice, chicken lice and chiggers.

Stored-product Insects: The 1958 stored-product insect surveys revealed the usual common pests; no new species were observed. SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) and the FLAT GRAIN BEETLE (Laemophloeus pusillus) were particularly numerous.

New Insect Records: A WEEVIL (Brachyrhinus rugosostriatus) was collected for the first time in West Virginia in the Charleston area.

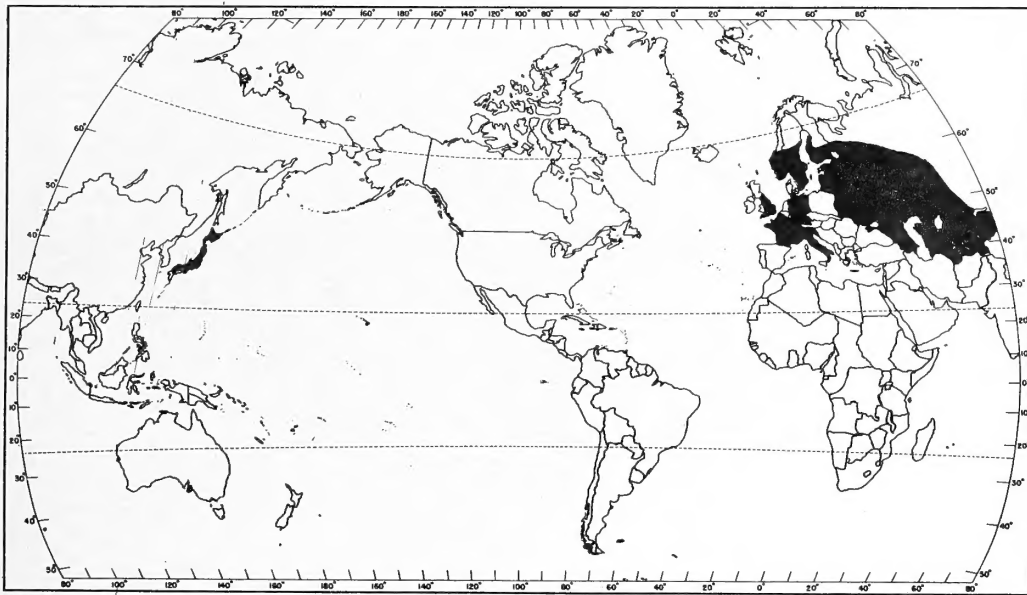
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

PLUM BORER (Rhynchites cupreus L.)

Economic Importance: This weevil causes damage to pome and stone fruits in many European countries and some areas of Asia. The overwintered adults feed on new growth, flowers and young fruit, but the greatest damage occurs from female oviposition punctures in young fruit and subsequent larval development. There seems to be a difference in host preference in different countries. In Germany, plums and cherries are the main hosts while in Finland the insect is mainly a pest of apple causing the greatest injury to the terminal shoots of young trees. It is also an important pest of apple in Norway and Sweden, injuring fruit as well as the young growth. Destruction of the shoots causes retardation and malformation in tree development.

Distribution: Most of Europe, USSR and Japan.

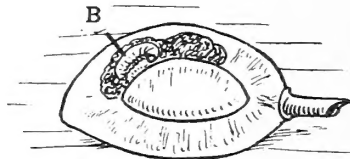
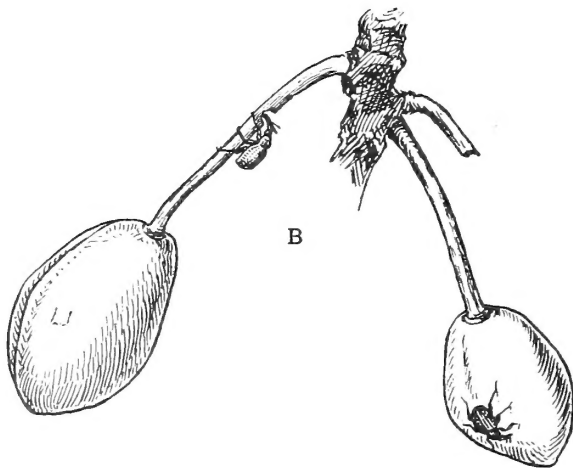
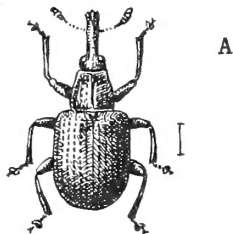
Hosts: Pome and stone fruits. Also reported from Sorbus spp., hazel, birch, hawthorn and grape.



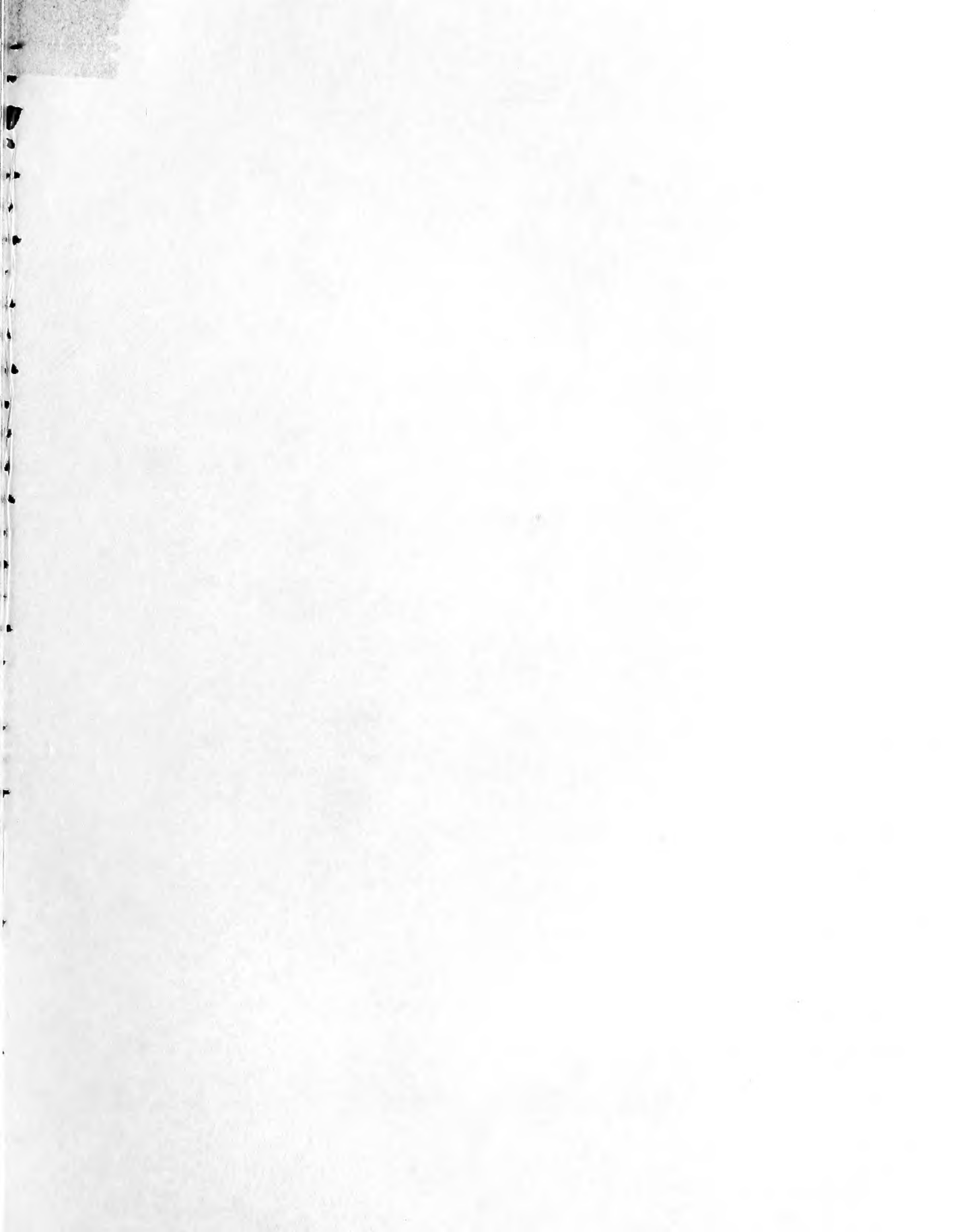
General Distribution of Rhynchites cupreus

Life History and Habits: Adults emerge from hibernation in early June and feed on new growth and young fruit. Females begin ovipositing by mid-June in first-year shoots and the young fruit. Oviposition takes place in cuts and punctures in the pedicels of the young fruit or in the tender shoots. One egg is deposited in each puncture and the female covers the cut with plant tissue. Hatching occurs in 4-11 days and the larva feeds in the tissues for 20-30 days. The infested fruit drops. Pupation takes place in the soil and lasts about 45 days. The young adults feed on the leaves of hosts before entering hibernation.

Description: Adult 3.5 to 4.5 mm., copper-brown in color. Larva white, curved, legless. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies.) CEIR 9 (7) 2-13-59



A - Adult of Rhynchites cupreus
B - Adult and Larval Damage



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