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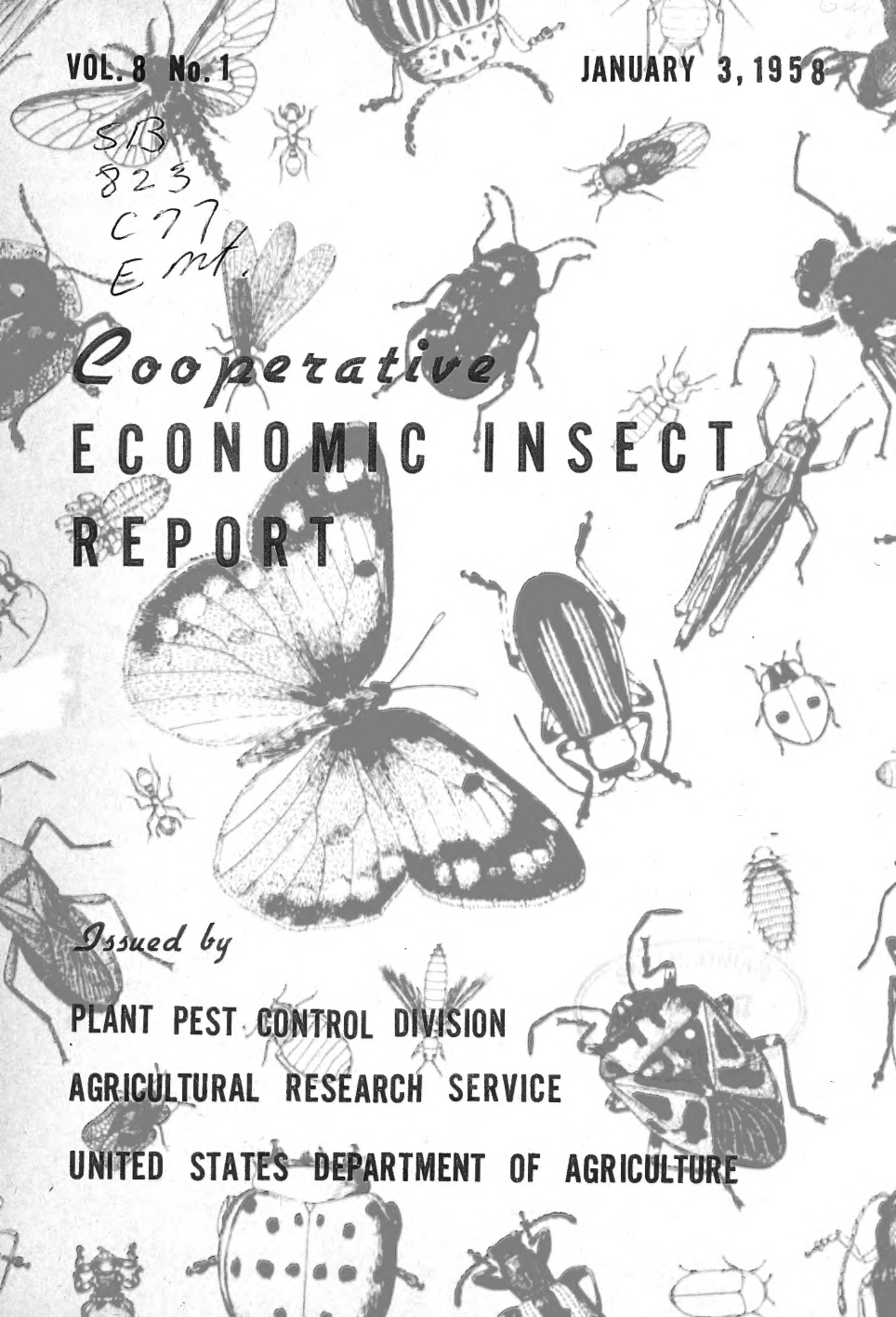
Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE



AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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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United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

SUMMARY OF INSECT CONDITIONS - 1957 in New Jersey (p. 6) and in Maine (p. 9).

Distribution of WESTERN PINE BEETLE. (p. 5).

INSECTS not known to occur in the United States. (p. 11).

WEATHER BUREAU 30-DAY OUTLOOK

JANUARY 1958

The Weather Bureau's 30-day outlook for January calls for temperatures to average below seasonal normals over most areas east of the Continental Divide, except for near to above normal over the Northeast and in the Southern Plains. This marks a wintry change from the mild conditions which have prevailed over the past few weeks. West of the Divide temperatures are expected to average above normal, except near normal over the Southern Plateau.

Precipitation is expected to exceed normal from the Ohio and Lower Mississippi Valleys eastward to the Atlantic Seaboard, with increasing snows in the northern half as the month progresses. Above normal precipitation is also anticipated over California. Subnormal amounts are indicated over the Southern Plains, Western Great Lakes Region, and Upper Mississippi Valley. In unspecified areas about normal is predicted.

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 Superintendent of Documents, Washington 25, D.C. Price \$4.80 a year, \$2.40 a half year.

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Common in volunteer and planted oats in Garvin County. Very light numbers (averaging considerably less than 1 per linear foot of row) from scattered fields of wheat in the south central, central and north central areas. The higher populations found in fields containing volunteer grain or in fields adjacent to volunteer grain. (Coppock, Dec. 21).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Common on volunteer barley in all sections of the State; light numbers (0 to 20 per linear foot of row) on planted barley in all sections. (Coppock, Dec. 21).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - OKLAHOMA - No overwintering larvae found in 200 corn plants examined in 2 fields in Love County. (Coppock, Dec. 21).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Average number of bugs per square foot in hibernation was 2,031 in Love County, 3,110 in Jefferson County and 856 in Garvin County. (Fed.-State Chinch Bug Survey, Dec. 21). ARKANSAS - Surveys conducted in November show a much smaller number in hibernation than same time in 1956. The same 17 northeastern and east central counties were surveyed in 1956 and 1957. Extremely heavy rainfall has occurred in the area surveyed throughout the year. Classification of counties based on average number of bugs in hibernation in 1957 showed 11 counties non-economic, 1 light, 2 moderate, 3 severe and 0 very severe. The same counties in 1956 were classed as 0 non-economic, 1 light, 2 moderate, 7 severe and 7 very severe. (Boyer, Dec. 21).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Check of 252 samples (2 square inches each) of alfalfa in 4 fields in Stillwater area revealed 26 aphids. (Bieberdorf). Populations further reduced statewide. Low to very low numbers in all areas; rare in new plantings. (Coppock, Dec. 21). UTAH - At lower population level than few preceeding weeks in Washington County. (Knowlton, Dec. 9).

TRUCK CROP INSECTS

BET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Populations in canyon areas of western San Joaquin Valley remain scattered. It is expected that concentrations will develop along favorable south slope locations and that winter spraying will commence in about two weeks. Reports of high leafhopper populations on desert weeds to the west of Imperial Valley cultivated areas are to be investigated. (Cal. Coop. Rept.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Nine lint cleaner and 5 gin stands inspected in 10 counties; total of 31 larvae found. (Fed.-State PWB Comm., Dec. 21). ARKANSAS - Only 2 larvae recovered from gin trash samples in State. A total of 19,003 bushels of trash in 51 counties have been run by end of November. Through November 1956, a total of 194 larvae were found in 10,460 bushels of gin trash from sites located in 50 counties. (Boyer, PPC).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

LOCUST BORER (Megacyllene robiniae) - UTAH - Caused numerous trees to be removed in Holladay and Cottonwood areas of Salt Lake County. (Knowlton, Dec. 20).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Infestations building up generally on cattle in many areas of State. Three thousand head recently dipped in Sanpete County. (Knowlton, Dec. 20).

SHEEP BOT FLY (Oestrus ovis) - UTAH - Found in heads of sheep throughout State, particularly where post mortem examinations are made. (Knowlton, Dec. 20).

SHEEP KED (Melophagus ovinus) - UTAH - Numerous on some herds in Sanpete and Millard Counties. (Knowlton, Dec. 20).

LIGHT TRAP COLLECTIONS

	<u>Pseudaletia unipuncta</u>	<u>Agrotis ypsilon</u>	<u>Peridroma margaritosa</u>
ARKANSAS			
Stuttgart 12/12-18	3	1	1
Fayetteville 12/15-21	25	9	
SOUTH CAROLINA (County)			
Oconee 12/21-27		2	

DISTRIBUTION OF WESTERN PINE BEETLE (Dendroctonus brevicomis)
in United States and British Columbia



SUMMARY OF INSECT CONDITIONS - 1957

NEW JERSEY

Prepared by Department of Entomology, Rutgers University

Highlights: Fall populations of EUROPEAN CORN BORER were reduced by 75 percent from 1956. Drought conditions favored unusually large populations of tetranychid mites on many crops. CODLING MOTH, CABBAGE LOOPER, CORN EARWORM and ALFALFA WEEVIL were very damaging. A pest, new to New Jersey, the PEPPER WEEVIL, caused moderate to severe damage to peppers in a restricted area near Vineland, New Jersey. ELM LEAF BEETLES and BAGWORM populations were reduced sharply.

Cereal and Forage Insects: MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) caused less damage than usual to alfalfa and clover plantings. Only in the area of Somerset, northern Hunterdon, southern Warren and Morris Counties was damage of economic importance in unsprayed fields. ALFALFA WEEVIL (*Hypera postica*) caused moderate to severe damage in all areas of the State except in parts of Sussex County which are not yet infested. PEA APHID (*Macrosiphum pisi*) caused less damage than usual. In some areas of southern counties, populations reached 200 to 300 per sweep during May but, in general, populations were much lighter. Soybeans in central and southern New Jersey were heavily attacked by MITES (*Tetranychus* spp.). This is the first year in many years that soybeans have been defoliated and yields reduced by these pests. Overwintered EUROPEAN CORN BORER (*Pyrausta nubilalis*) was present in greatest numbers in several years. However, unfavorable drought conditions and apparently a buildup of parasites caused populations to be generally low and the 1957 fall populations of 95.2 borers per 100 plants is slightly less than one-fourth of 1956 fall population. First generation of borers caused considerable damage in early sweet corn plantings and in vegetable crops. However, damage to field corn by second generation was very slight. ARMYWORM (*Pseudaletia unipuncta*) caused less damage than usual and only a few fields in southern counties were heavily infested. CORN LEAF APHID (*Rhopalosiphum maidis*) was found in large numbers on corn throughout the State but in some southern areas of the State it was present in economic numbers on field corn. CORN FLEA BEETLE (*Chaetocnema pulicaria*) abundance was severely reduced by winter temperatures. However, populations of up to 1 beetle per 3 plants were observed in early sweet corn plantings and instance of bacterial wilt reached nearly 40 percent in a few infested fields. The damage was spotty and not general. POTATO LEAFHOPPER (*Empoasca fabae*) did not appear to be a major pest. Some alfalfa fields in the northwestern counties showed chlorosis from leafhopper damage but economic losses were apparently slight.

Fruit Insects: CODLING MOTH (*Carpocapsa pomonella*) was more numerous than usual. First generation activity and larval activity was noted about May 30 in southern part of State and second generation larvae were present by July 15. A period of heavy entry of apples by larvae about August 18 indicated a partial third generation of this insect. UNSPOTTED TENTIFORM LEAF MINER (*Callisto geminatella*) appeared for the first time in any numbers. Moderate to severe defoliation was found in a few orchards in the southern area. Observations in October indicate that all orchards in this area are moderately infested with as high as 85 percent of the foliage showing up to over 3 mines per leaf in some orchards. PEACH SILVER MITE (*Vasates cornutus*) was generally present in August and September for the first time in some years. Some economic damage may have been produced. APPLE MAGGOT, (*Rhagoletis pomonella*) was present in greater than usual numbers in unsprayed home orchards, in central and northern counties. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) was very apparent in egg stage during bloom on apples. However, second and third generation activity was light and little economic damage reported on this pest. EUROPEAN RED MITE (*Panonychus ulmi*) was normally present. However, drought conditions accentuated this problem and some bronzing and leaf drop was observed in all areas of the state where mites were not controlled.

ORIENTAL FRUIT MOTH (Grapholitha molesta) was present in usual numbers and moderate infestations of TWO-SPOTTED SPIDER MITE (Tetranychus telarius) developed in late season on peach foliage. A MEADOW NEMATODE (Pratylenchus sp.) damaging root systems were implicated in winter kill of young peach trees in many areas of southern New Jersey. Populations of BLUEBERRY MAGGOT (Rhagoletis sp.) were several times higher than 1956. MITES (Tetranychus spp.) were present in large numbers in large numbers in strawberry plantings throughout the State in March. By May, large areas in fields in southern New Jersey had been killed by SPIDER MITES, particularly in sandy soils. Unusually warm conditions in early season caused PLUM CURCULIO (Conotrachelus nenuphar) to be active in peach blocks before petal fall. Considerable feeding on blossoms was apparent. Normal damage by PLUM CURCULIO occurred in peach and apple plantings.

Truck Crop Insects: CABBAGE LOOPER (Trichoplusia ni) was very abundant on all crucifers, lettuce and several other plants. Damage from July until October was severe. This insect is rarely a major pest prior to that time, although some mature looper larvae were found in the southern area in late May. IMPORTED CABBAGEWORM (Pieris rapae) was present in May and June in large numbers causing moderate damage where control measures were not followed. CORN EARWORM (Heliothis zea) caused the most damage in many years. First moths were picked up in late May but moth flights did not become heavy until August and September. Light damage from this insect was also observed in late tomatoes and peppers. FALL ARMYWORM (Laphygma frugiperda) activity was first noted in mid-July and caused damage on late sweet corn plantings. SPINACH LEAF MINER (Pegomya hycoscyami) was present and damaging early in the season on overwintered and spring seeded spinach. A SERPENTINE LEAF MINER (Liriomyza sp.) caused defoliation of tomatoes and eggplant in the central and southern counties during July and August. A LEAF MINER (probably L. brassicae) was very common on crucifers, and much more abundant in 1957 than for many years. PEPPER WEEVIL (Anthonomus eugenii) was reported in the State for the first time, in the Vineland area in southern New Jersey. Several fields involving 40 or 50 acres were essentially destroyed. EUROPEAN CORN BORER caused moderate damage in its first generation and very light damage in second generation to peppers, eggplant, sweet corn, and tomato. ASPARAGUS BEETLES (Crioceris asparagi and C. duodecimpunctata) invaded asparagus fields in great numbers during late April and early May. Normally, emergence of beetles from hibernation is prolonged over a long period of time. MEXICAN BEAN BEETLE (Epilachna varivestis) damage was very slight. CABBAGE MAGGOT (Hylemya brassicae) caused general widespread damage in scattered northern market gardening areas. Damage on the extensive southern acreages was nil. Several FLEA BEETLES (particularly Phyllotreta cruciferae) were less numerous than usual on crucifers. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) caused less damage than usual. Emergence of adults from hibernation and their appearance in the field was concentrated in a short period after potato vines began to emerge from the soil. CABBAGE APHID (Brevicoryne brassicae) was more numerous and damaging than usual on cabbage, broccoli and cauliflower. TOMATO RUSSET MITE (Vasates lycopersici) was more common than in 1955 and 1956 and several fields in southern areas suffered moderate to severe damage.

Forest, Ornamental and Shade Tree Insects: In general these insects were not especially abundant in 1957. Some of the normally important pests, ELM LEAF BEETLE (Galerucella xanthomelaena) and CANKERWORMS (Alsophila pometaria and Palaearctia vernata) were rarely seen and no damage resulted. EASTERN TENT CATERPILLAR (Malacosoma americanum) continued to be fairly abundant on wild cherry and unsprayed fruit trees. Damage to valuable trees was negligible. BAGWORM (Thyridopteryx ephemeraeformis) populations were low, apparently as the result of parasitism. Isolated outbreaks occurred in southern counties. MIMOSA WEBWORM (Homodaula albizziae) activity was less apparent than usual, being confined to southern counties. FALL WEBWORM (Hyphantria cunea) was generally present throughout the summer on many trees, but not seriously destructive. PINE SAWFLIES (Neodiprion spp.) were spotty, not abundant, and were present in early spring only. GYPSY MOTH (Porthetria dispar) caused no serious defoliation injury. NANTUCKET PINE MOTH (Rhyacionia frustrana) and EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) were less common than previous years. A HEMLOCK SCALE

(Florinia externa) is increasing in importance. TULIPTREE SCALE (Toumeyella liriodendri) also seem to be coming back after being less common for a number of years. Usual populations of EUONYMUS SCALE (Unaspis euonymi) were present. AN OAK KERMES SCALE (Kermes pubescens) was more abundant than usual. ELM SCURFY SCALE (Chionaspis americana) and EUROPEAN ELM SCALE (Gossyparia spuria) were not especially troublesome except in isolated locations in southern counties. EASTERN SPRUCE GALL APHID (Chermes abietis) and COOLEY SPRUCE GALL APHID (Chermes cooleyi) were seldom seen. PAINTED MAPLE APHID (Drepanaphis acerifoliae) was fairly severe on nursery and street maples in late August and September. SYCAMORE LACE BUG (Corythucha ciliata) and A LACE BUG (C. bellula) were fairly abundant. SOUTHERN RED MITE (Oligonychus ilicis) overwintering eggs were abundant on holly but populations were low during the growing season. There was no fall buildup in 1957. American holly had few mites. A MAPLE MITE (Oligonychus sp.) was abundant in nurseries. There were heavy but fluctuating populations in late spring and early summer. Many species of OAK GALL INSECTS were abundant. Populations have remained high for several years. BIRCH LEAF MINER (Fenusa pusilla) was severe. The second brood matured near mid-June and was much more destructive than usual. HOLLY LEAF MINERS (Phytomyza spp.) were fairly abundant on American holly. Controls were often successful. JAPANESE WEEVILS (Calomycterus setarius and Pseudocnecorhinus bifasciatus) may be increasing in importance in northern counties. Increased numbers of reports have been received the past several years. JAPANESE BEETLE (Popillia japonica) adults caused more concern than previous years. Infestations were spotty and caused only minor damage. BLACK VINE WEEVIL (Brachyrhinus sulcatus) severely attacked Taxus in northern counties.

Insects Affecting Man and Animals: The SALT-MARSH MOSQUITO (Aedes sollicitans) was held below major nuisance levels in the seashore resort areas between early July and late August. Favorable tide and rainfall patterns enabled mosquito control agencies to meet the problem adequately in all but localized areas in Cape May County. Mosquito trap sampling in Delaware Bay shore counties showed collections of A. sollicitans, A. vexans and Culex pipiens comparable to the ten year average. Below average summer rainfall confined urban C. pipiens to water areas heavily polluted with industrial and domestic wastes.

Stored-Product Insects: Abundance and damage by stored grain insects was considerably less than in 1956 is undoubtedly correlated with the much lower moisture content of the grain this year. Approximately 46 bins of wheat, rye, and barley were examined monthly, and of this number, 35 had been treated. Probe samples indicated 9 bins of weevily grade and the dominant insects responsible were SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) in 3 bins, RED FLOUR BEETLE (Tribolium castaneum) in 2 bins, INDIAN-MEAL MOTH (Plodia interpunctella) in 2 bins, RUSTY GRAIN BEETLE (Laemophloeus ferrugineus) in 1 bin and FLAT GRAIN BEETLE (L. pusillus) in 1 bin. Abundant surface populations of INDIAN-MEAL MOTH were absent in most of the treated bins and present in most untreated bins. GRANARY WEEVIL (Sitophilus granarius) was present in one wheat bin. Field infestation of wheat, rye, barley, and corn by ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was negligible as was later infestation of these stored grains by this pest. Hymenopterous parasites were very abundant in many infested bins, and in some instances, appeared to successfully deter the buildup of insect populations. SAW-TOOTHED GRAIN BEETLE and INDIAN-MEAL MOTH are the most prevalent pests of stored food products in the home.

Miscellaneous Insects: Adult SOD WEBWORMS (Crambus sp.) were observed in small numbers in Bergen County early in September. HAIRY CHINCH BUG (Blissus leucopterus hirtus) was abundant and destructive although localized in distribution in northern counties. Difficulty was experienced in control in August and September. PAVEMENT ANT (Tetramorium caespitum) continues as the dominant household ant pest. The flight of EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) was heavy but confined to a shorter than usual period in April and May. CLOVER MITE (Bryobia praetiosa) was abundant in April. It has been reported as active during all winter months. Reports of infestations of BROWN-BANDED ROACH (Supella supellectilium) have increased in number. Reports of GERMAN COCKROACH (Blattella germanica) have also increased. The dominant fabric pest continues to be BLACK CARPET BEETLE (Attageus piceus).

SUMMARY OF INSECT CONDITIONS - 1957

MAINE

Reported by R. W. Paulson and L. W. Boulanger

Highlights

Heavy winter-kill of GYPSY MOTH (*Porthetria dispar*) egg masses above snow line, and equally severe mortality of overwintering larvae of the BROWN-TAIL MOTH (*Nygmia phaeorrhoea*). Infestations of these two pests remained at the negligible or light stage through the season. Outbreak of SPRUCE BUDWORM (*Choristoneura fumiferana*) occurred in northeastern Maine. This condition is expected to carry through 1958. First record of EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) in Maine. An infestation was found in Cumberland County. CUTWORM outbreak occurred in Oxford and Somerset Counties. Losses in corn plantings ran as high as 50 percent. Severe CYCLAMEN MITE (*Steneotarsonemus pallidus*) injury occurred in several strawberry plantings. Severe BLACK FLY (*Simulium* sp.) conditions; flies persisted long past normal time of abatement. Appreciable and rapid spread northward of EUROPEAN EARWIG (*Forficula auricularia*).

Cereal and Forage Insects: May 1 to June 30 - SEED-CORN MAGGOT (*Hylemya cilicrura*) caused moderate damage to beans in the Bangor area. CUTWORMS severely damaged corn in Bangor and Hermon. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) infestations were heavier than in 1956; injury to various crops ranged from light in Aroostook County to moderate in southern and western portions. STALK BORER (*Papaipema nebris*) infestations were heavier than usual causing moderate injury to corn, and light injury to various crops in Aroostook County. ARMYWORM (*Pseudaletia unipuncta*) moth flights reached peak June 13-20 as indicated by light traps in Monmouth. July 1-30; EUROPEAN CORN BORER (*Pyrausta nubilalis*) outbreak in Androscoggin County severely injured corn. Localized CUTWORM outbreak in Oxford and Somerset Counties caused severe injury to corn. Heavy infestations appeared limited to fields heavily dressed with chicken manure. One planting suffered about 50 percent loss.

Fruit Insects: May 1 to June 30 - Apples in the Houlton area were severely injured by EYE-SPOTTED BUD MOTH (*Spilonota ocellana*). CODLING MOTH (*Carpocapsa pomonella*) overwintering larvae suffered only light winter-kill. Less than 10 percent of larvae recovered in the spring were killed by the cold temperature of last winter. Parasitism and disease incidence were much higher. BLUEBERRY MAGGOT (*Rhagoletis pomonella*) adults emerged on June 21. This is considerably earlier than what might be termed normal. BUMBLE BEES (*Bombus* sp.) and other wild pollinators appeared to be more numerous than in 1955 or 1956 in most blueberry-producing areas. BLUEBERRY THRIPS (*Frankliniella vaccini*) infestations were heavy in the Knox-Lincoln blueberry areas. Up to three DDT dustings were applied before control was obtained. July 1-30 - Severe local outbreaks of APPLE MEALYBUG (*Phenacoccus aceris*) were found in the Livermore Falls and Turner areas. Fruit on infested trees was heavily smutted from honeydew. APPLE MAGGOT (*Rhagoletis pomonella*) emergence began July 7 in cages in Monmouth area; peak emergence was rapid, taking place on July 23rd. CYCLAMEN MITE (*Steneotarsonemus pallidus*) infestations were found in the Deblois and Gray areas. Damage to about 20 acres of strawberries was especially heavy in Deblois plantings. August 1-30 - EUROPEAN RED MITE (*Panonychus ulmi*) and TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) infestations were moderate over the entire State. Generally, good control was obtained with regular spray practices but a few orchards in the Standish and Vassalboro areas suffered moderate damage. APPLE MAGGOT emergence was nearly 97 percent completed by August 15. Appreciable numbers of flies were caught in bait traps in Monmouth and New Gloucester orchards during the month. BLUEBERRY MAGGOT infestations were almost nonexistent in eastern areas. The crop was regarded by experienced agents as one of the cleanest on record. September 1-30 - APPLE MAGGOT continued to emerge in cages until September 6. Fly activity in orchards continued well into September as indicated by bait trap captures. The gradual appearance of RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) in most apple-producing areas has caused some

concern. Although infestations are still very low, proper conditions could cause a sharp rise in population numbers with ensuing damage.

Truck Crop Insects: May 1-June 30 - A planting of Chinese cabbage was severely damaged by CABBAGE MAGGOT (*Hylemya brassicae*) in the Scarborough area. POTATO FLEA BEETLE (*Epitrix cucumeris*), POTATO APHID (*Macrosiphum solanifolii*), FOXGLOVE APHID (*Myzus solani*) and BUCKTHORN APHID (*Aphis abbreviata*) infestations were light and damage to potatoes was minor. The last three species named had infested up to 9 percent of untreated plants by June 28. July 1-30. - POTATO APHID and POTATO FLEA BEETLE caused moderate damage to potatoes in Aroostook County. SQUASH BUG (*Anasa tristis*) infestations increased in Cumberland County; squash and potatoes suffered moderate injury. CABBAGE APHID (*Brevicoryne brassicae*) damage was moderate on cabbage in the Hartland area. August 1-30 - ROOT APHID (tentatively identified as *Pemphigus balsamiferae*) infestations were moderate in South Portland and Cape Elizabeth. Damage to lettuce was moderate. This aphid is rapidly becoming an important pest of lettuce in Maine.

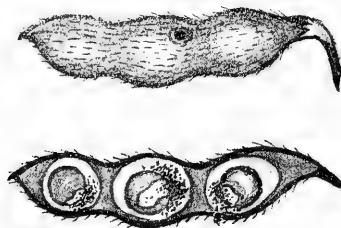
Forest, Ornamental, and Shade Tree Insects: (From R. W. Nash, Maine Forest Service Augusta): May 1-June 30 - EASTERN TENT CATERPILLAR (*Malacosoma americanum*) infestations in eastern Maine were light compared with past years. Heavy winter-kill of GYPSY MOTH (*Porthetria dispar*) egg masses and BROWN-TAIL MOTH (*Nygmia phaeorrhoea*) overwintering larvae resulted in very light infestations of these two pests. SPRUCE BUDWORM (*Choristoneura fumiferana*) infestation and damage on fir was moderate in northern Maine. A statewide outbreak of A PINE LEAF APHID caused moderate injury to white pine. Galls could be found on spruce in mid-May and migrants were present on pine on June 7. Eastern Maine hardwood stands were moderately damaged by FALL CANKERWORM (*Alsophila pometaria*). BIRCH LEAF MINER (*Fenusa pusilla*) underwent a statewide outbreak causing moderate to heavy damage to birches. Eggs were hatching by May 30 while egg deposition was still in progress. July 1-30 - The effectiveness of the winter-kill of GYPSY MOTH eggs was evident in the fact that only one defoliation was observed. This was atop Agamenticus Mountain in York County. Infestations in the State remained at an extremely low level. (E. S. Russell, Dept. of Agr.). SPRUCE BUDWORM reached outbreak proportions in July. Damage to fir and spruce was moderate in north-eastern areas. ELM LEAF BEETLE (*Galerucella xanthomeaena*) infestations were heavy in local areas; severe damage was evident in central Maine. EUROPEAN EARWIG (*Forficula auricularia*) infestations are becoming moderate from New Hampshire border north to Portland. Most insects above, with the exception of FALL CANKERWORM, increased above the 1956 levels. September 1-30 - SPRUCE BUDWORM infestations persisted at outbreak level causing moderate damage to fir and spruce. It is forecasted to remain at outbreak level through 1958. SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) was abundant north to Portland, lower numbers recovered north of Portland to Brunswick.

Insects Affecting Man and Animals: May 1-June 30 - BLACK FLY (*Simulium* sp.) outbreak was statewide. Pests remained active much beyond normal abatement date. The Maine Forest Service reported an infestation of EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) in Cumberland County. This is the first State record of the pest. A MIDGE was annoying to man in Hancock County. MOSQUITOES were moderate to heavy in Cape Elizabeth area.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

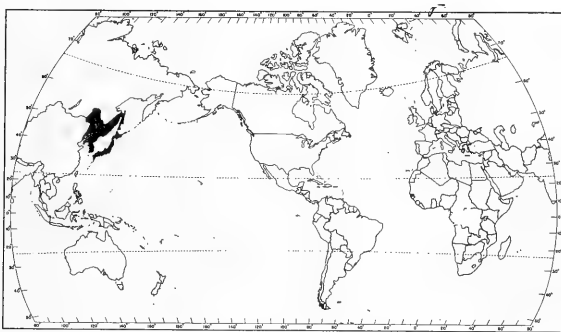
SOYBEAN POD BORER (Grapholitha glycinivorella (Matsumura))

Economic Importance: The soybean pod borer is a well known pest of soybeans in the Far East. It is widely distributed in Japan and causes serious damage every year in Hokkaido where it has attacked up to 94 percent of the beans in some localities. Seed losses up to 20-30 percent have been recorded in some years in the Soviet Far East. Infestations are apparently worse on the "hairy" varieties and those that flower before the end of July in Manchuria and on the late varieties in Korea. Two seeds in each pod are usually attacked. These are ruined for seeding purposes and the oil content is reduced.



Damage to Soybeans and Pods

Distribution: Occurs throughout Japan, Korea, and parts of China (Manchuria) and the Soviet Far East (Maritime Territory, Sakhalin).



General Distribution of Soybean Pod Borer

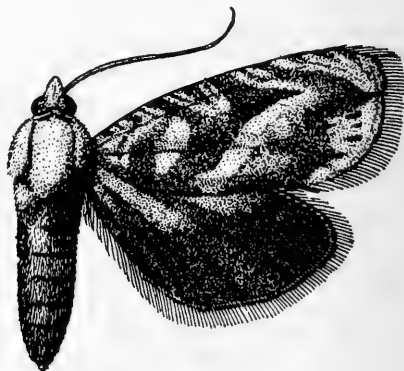
Hosts: Preferred host is soybean. Will also attack cowpeas and sundial lupine (Lupinus perennis).

Life History and Habits: In Manchuria there is but one generation a year; the adults first appearing in August and early September, living for about 10 to 13 days. The females lay eggs singly, 164 to 167 per female, on the pods, and sometimes just before harvest, on the leaves and stems. The larvae hatch in 7 to 8 days and are full-fed in 18 to 21 days. They enter the soil to hibernate in cocoons. Pupation begins late in July the following year and moths emerge in 11 to 13 days. Young larvae feed on the young green seeds. Infested beans are difficult to detect by examinations of the outside hull. Usually a small spot, as though splashed with mud, indicates the entrance hole.

Description: The adult is as follows: "Primaries grayish-black, mottled with dull yellow irregular markings, with indigo luster in a certain light; outer half of the costal margin distinctly crossed alternately by short oblique yellow and dark liturae; a curved dark narrow stripe near at the costal margin towards the inner angle ending at the place of the second dorsal vein, after making an acute angle at the subcostal region; a large wedge shaped dusky patch nearly parallel with the former belt at the interno-outer margin, with the broad base at the hind margin; outer margin dull yellow, and there is a golden patch near at the center furnished with three black spots internally in a transverse row; a blackish oblique stripe at the apical region, bordered exteriorly with grayish-blue; a submarginal line and the fringe dusky gray. Secondaries dusky black, a little paler towards the base, with gray fringe and costal margin. Body dull black; head with a crown-like tuft of an olivaceous-yellow color. Wings below altogether paler and more uniform in color, with no markings except on the costal margin. Body beneath gray; legs, antennae, labial palp, yellowish-gray; compound eyes olivaceous. Wing expanse - 13 to 15 mm.; body length - 7 mm." (from Matsumura, 1898). The eggs are yellowish when laid and the caterpillars are rosy-orange when mature. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies and the U. S. National Museum). CEIR 8(1) 1-3-58



Larva



Adult

Figures (except map): Adult from *Iconographia Insectorum Japonicorum*, 2nd Edit. 1954. 1736 pp., Tokyo. Larva and damage from Engel'gardt, V. and Mishchenko, A. 1931. In *Bolezni i Vrediteli Soevykh Bobov na Dal'nem Vostoke*. *Dal'nevostochnoe Kraevoe Zemel'noe Upravlenie Dal'stazra*. pp. 85-112, Vladivostok.



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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BOLL WEEVIL hibernation counts higher in Florence County, South Carolina, area than last year. Reports from other South Carolina, North Carolina and Virginia areas. (p. 16).

SPRUCE BUDWORM outbreak most important forest insect problem in Minnesota. (p. 16).

Distribution of ALFALFA WEEVIL in United States. (p. 18).

SUMMARY OF INSECT CONDITIONS - 1957 - North Dakota (p. 19), Wyoming (p. 22), Montana (p. 23).

MORMON CRICKET adult survey - fall 1957. (See end of book).

Reports in this issue are for the week ending January 3 unless otherwise designated.

WEATHER OF THE WEEK ENDING JANUARY 7

The week's weather highlights included 3 storms and 1 cold wave. The first storm which developed in the central Mississippi Basin the last day of 1957, and moved northeastward across the Great Lakes on January 1, 1958, produced light to heavy snow and some sleet along its path and also over the Northeast. Snowfall ranged up to 7 inches in a belt from Nebraska to the Great Lakes and in northern New England, but amounts of 1 to 2 feet were reported from local areas along Lakes Erie and Ontario. A storm moving up from Cuba produced 3 to 5 inches of rain in southern Florida on January 2 and 3. This was one of the worst winter storms of record along the southeastern coast where sustained northeasterly winds of 40 to 50 m.p.h., and gusts up to 70 m.p.h., were reported. Wind and rain caused considerable crop and property damage on land and damaged many boats along the shore. A weekend storm in Texas and eastern New Mexico brought flood-producing rains totaling 6 inches or more to the lower Rio Grande and Coastal Bend sections of Texas and up to 7 inches or more of snow to extreme western Texas and eastern New Mexico. First felt in the Far West on December 31, cold air covered the entire country by January 1 and maintained below-normal temperatures east of the Rockies most of the remainder of the week. Subzero minima occurred on several days in extreme northern areas east of the Rockies, and on January 1 were recorded as far south as northeastern Kansas and northern Missouri in the mid-continent area. Freezing occurred as far south as northern Florida, New Orleans, La., and Victoria, Tex. Temperatures for the week were unseasonably low east of the Great Plains, but varied in the Far West from much above normal in Montana east of the Divide to well below in the northern Great Basin. Precipitation generally was very light, with moderate to heavy amounts limited mostly to southern Florida, the extreme lower Great Plains, the central and north Pacific coast, and to local areas from the central Great Plains through the Great Lakes and Northeast. Frozen ground permitted resumption of harvesting operations in parts of the Corn Belt. Ice on lakes in Wisconsin is now 12 to 18 inches thick in the north and 5 to 8 inches in central portions. On January 6, measurable snow covered extreme western Texas and much of eastern New Mexico, much of eastern Nebraska, eastern Iowa, and northern Illinois, areas where the ground was bare at the end of the previous week. Depths increased in the Great Lakes region, and now range up to 24 inches at Houghton, Mich. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Light, scattered populations in volunteer small grains, Osage and Pawnee Counties. Occurring only occasionally in planted grain. (Coppock, Dec. 28). Averaged 2-10 per linear foot of row on volunteer oats and barley in isolated fields, Major and Garfield Counties. (Owens, Jan. 4).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Up to 30 per linear foot of row in oats, Pawnee and Osage Counties. Lighter numbers in other small grains, (Coppock, Dec. 28). Light, scattered populations (less than 10 per linear foot) from barley and wheat, Logan County. (Coppock, Jan. 4).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Light numbers in barley and wheat, Pawnee and Osage Counties. (Coppock, Dec. 28).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light numbers found in barley and wheat, Pawnee and Osage Counties, Dec. 28. From 30-100 per linear foot in one barley field, Logan County, Jan. 4. (Coppock).

GRASSHOPPERS - CALIFORNIA - Medium infestation of Esselena vanduzeei nymphs reported from red-stem filaree about 7 miles south of Coalinga, Fresno County. (Cal. Coop. Rept.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - VIRGINIA - A density survey in 20 northern and southwestern counties averaged 117 borers per 100 stalks, with 63 percent of stalks examined being infested. (Morris).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OKLAHOMA - A field of wheat, previously planted to alfalfa, averaged 1-2 larvae per linear foot, Major County. (Owens).

CHINCH BUG (Blissus leucopterus) - MISSOURI - Fall survey of 37 counties showed ratings of very severe in 6 counties, with 2,121-5,248 bugs per square foot; severe in 8 counties, with 1,002-1,875 per square foot; threatening in 5 counties, with 524-648 per square foot; light in 3 counties, with 305-460 per square foot; and non-economic in 15 counties, with 6-246 per square foot. (Thomas). OKLAHOMA - Fall survey shows average of 2,040 bugs in hibernation per square foot in Noble County, 1,989 in Kay County (Dec. 28), 2,814 in Pawnee County and 2,540 in Osage County (Jan. 4). (Coppock).

HESSIAN FLY (Phytophaga destructor) - VIRGINIA - Heavily damaged winter grains sown as cover crops on some farms, Pittsylvania County. (Morris).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Populations remain low in all areas; negative in some fields throughout State. (Coppock, Dec. 28). Populations range 0-50 per square foot of alfalfa crown, Logan County. (Coppock, Jan. 4).

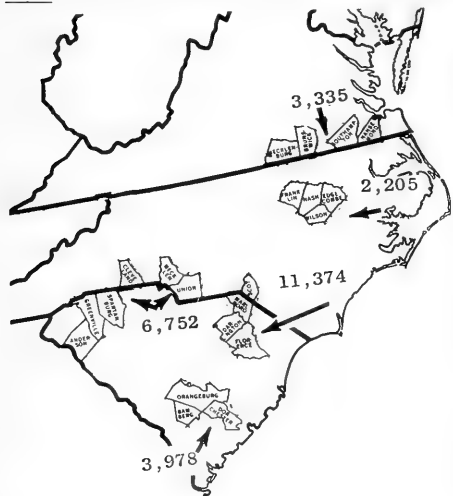
FRUIT INSECTS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - No new finds in State since November 26, 1957. (Bittner, Dec. 20).

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Limited infestation in Sonora, Tuolumne County, reported spreading to neighboring properties. Noticeable but not alarming since only short distances are involved. (Cal. Coop. Rept.).

COTTON INSECTS

Boll Weevil Hibernation Survey in South Carolina, North Carolina and Virginia - 1957. The same five areas in these States were sampled from November 13 to



December 19 as in the fall of 1956, with 3 samples of 2 square yards each being taken at each of 30 locations (farm sites) per area. Area 1 consisted of Orangeburg, Bamberg and Dorchester Counties, South Carolina, and averaged 3,978 live boll weevils per acre, which is 266 more than in 1956. Area 2, consisting of Florence, Darlington and Marlboro Counties, South Carolina, and Scotland County, North Carolina, averaged 11,374 per acre, 2,639 more than in 1956. Area 3, composed of Anderson, Greenville and Spartanburg Counties, South Carolina, and Mecklenburg, Cleveland and Union Counties, North Carolina, averaged 6,752 live boll weevils per acre, as compared with 6,268 for 1956. Area 4, comprised of Edgecombe, Franklin, Nash and Wilson Counties, North Carolina, averaged 2,205 live boll weevils per acre, which is 2,610 less than in 1956. Area 5, composed of Brunswick, Mecklenburg, Nansemond and Southampton Counties, Virginia, averaged 3,335 live boll weevils per acre, 834 less than in 1956. (Walker, Hopkins, Jernigan).

Averages by Area

PINK BOLLWORM (*Pectinophora gossypiella*) - OKLAHOMA - Inspection of 27 lint cleaners and 23 gin stands in 18 counties, Dec. 11-17, gave a total of 100 pink bollworms found. Nine counties were negative. Inspection of 15 lint cleaner and 10 gin stands in 12 counties, Dec. 17-24, found a total of 44 larvae. Eight of the counties were negative. (Fed.-State PBW Comm.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PINE SAWFLY (*Neodiprion exitans*) - FLORIDA - Larvae on 100 trees per acre of 30 acres of loblolly pine near Lake City, Suwannee County. Intermingled slash pine not affected to Oct. 11. All codominant and intermediate size loblolly trees have been completely stripped. (Merkel, Oct. 11).

PUTNAM SCALE (*Aspidiotus ancyclus*) - MARYLAND - Infesting dogwood at Harmans, Anne Arundel County. (U. Md., Ent. Dept.).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - MINNESOTA - Current outbreak is most important forest insect problem in State. Populations have increased alarmingly since 1954. Aerial survey showed moderate to heavy defoliation over approximately 660,000 acres of spruce-fir type in northern areas, an increase of some 240,000 acres over 1956 and 580,000 acres over 1955. A control program of 16,000 acres on the Kabetogama Peninsula is anticipated next year. Prospects are that the population will maintain itself or increase markedly in 1958. (Minn. Ins. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

BROWN DOG TICK (*Rhipicephalus sanguineus*) - MARYLAND - Adults found in home at College Park, Prince Georges County. (U. Md., Ent. Dept.).

CATTLE GRUBS - OKLAHOMA - Grubs averaged 16-20 per animal in calves and yearlings, Canadian County, and 4-7 per animal in old cows, Dec. 28. (Howell). Infestation was 4.5 grubs per animal in 86 mature, fat steers examined in a major packing plant in Oklahoma City, Dec. 30. Many dead grubs were noted. (Coppock). Populations averaged 33 per animal in 300 yearling steers in Harper County and 21 per animal in 200 yearlings in Canadian County. Payne County yearling steers averaged 26 per animal. Populations in mature animals in the three countries were much lower. (Howell).

MITES - UTAH - Severely infesting chicken coops on farm at Salina, Sevier County. (Knowlton).

STORED-PRODUCT INSECTS

A SPIDER BEETLE (*Ptinus gandolphei*) - CALIFORNIA - A medium infestation in a bathroom in Tulare County is apparently third record for State. The first record was in Los Angeles County in 1940, no host recorded. The second record in 1955 from Fresno County an old sacks in a warehouse. (Cal. Coop. Rept.).

MISCELLANEOUS INSECTS

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Causing nuisance by entering homes in Baltimore. (U. Md., Ent. Dept.).

CLOTHES MOTHS - UTAH - Damaged stored woolen clothing and a carpet at Hyrum, Cache County. (Knowlton).

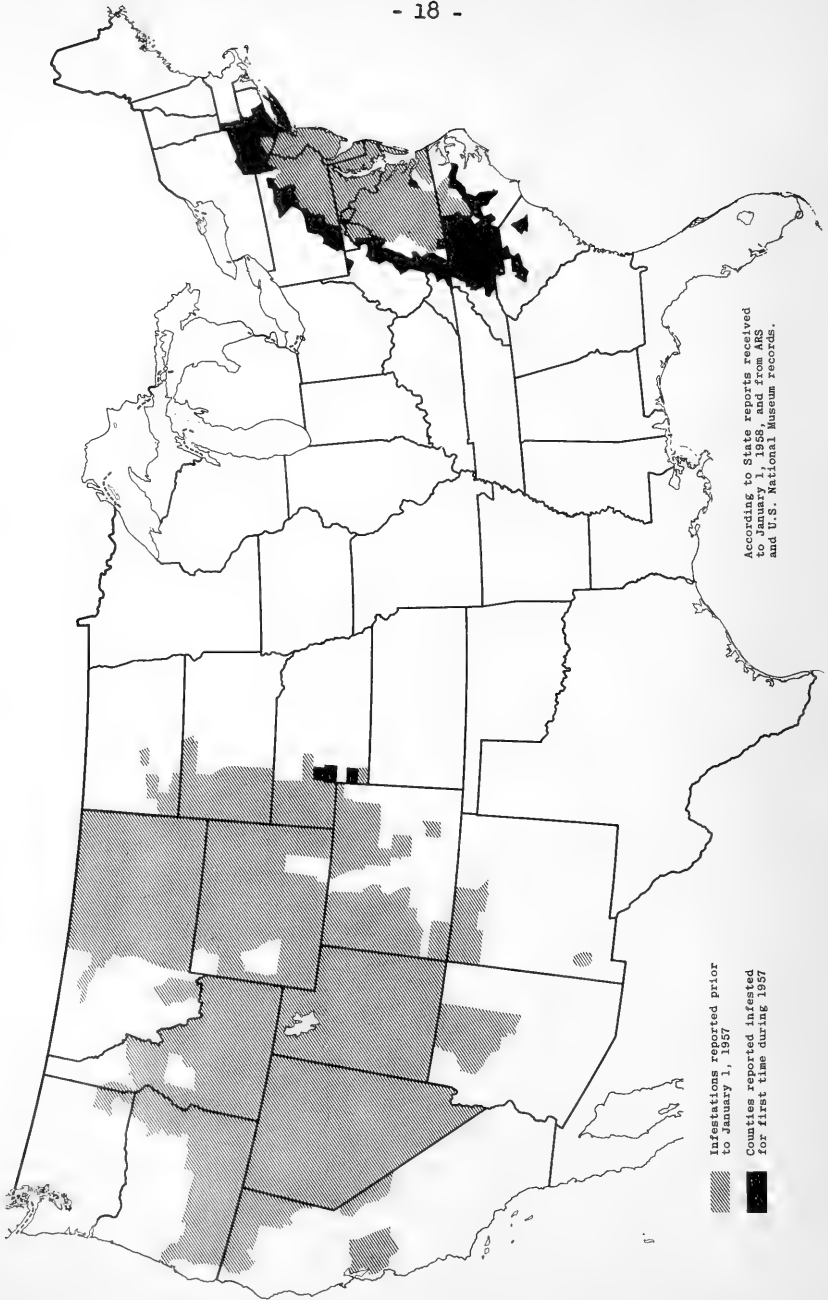
GARDEN SYMPHYLID (*Scutigera immaculata*) - UTAH - Most of the symphylid infestations encountered during recent years have been in Box Elder, Cache, Davis, Salt Lake, Utah and Weber Counties. Infestations have also been observed in Tooele County. (Knowlton).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Collected at Bay Springs, Escambia County. (Youtsey, Nov. 25). Four new infested properties 4.5 to 6.5 miles west of Clarksville along State Highway No. 20, Calhoun County. (Bitner, Dec. 20).

LIGHT TRAP COLLECTIONS

	<i>Agrotis</i> ypsilon	<i>Feltia</i> subterranea	<i>Pseudaletia</i> unipuncta	<i>Trichoplusia</i> ni
SOUTH CAROLINA (County)				
Charleston 12/16-29	32	19	2	5
FLORIDA				
Monticello 12/18-19		3	1	
Quincy 12/16	1			1
Sanford 12/18	6	3		3

DISTRIBUTION OF ALFALFA WEEVIL (*HYPERA POSTICA*)



SUMMARY OF INSECT CONDITIONS - 1957

NORTH DAKOTA

Compiled by Vance V. Goodfellow

Highlights: GRASSHOPPERS, as predicted by 1956 fall surveys, reached outbreak proportions over much of the State in 1957. In general, crop losses were kept at a minimum due to early chemical control of nymphal populations along roadsides, field margins and other places. Insecticidal treatment of rangeland infestations resulted in excellent control. EUROPEAN CORN BORER populations were the highest ever recorded in the State. SIX-SPOTTED LEAFHOPPER population was unusually high during mid-June, and contributed to the first economic incidence in North Dakota of the aster yellows disease in flax. The high incidence of purple top in potatoes was also attributed to this high population. BEET WEBWORM infestations were the first of any consequence since 1950. WHEAT STEM SAWFLY infestations were severe in McLean, Ward, and Mountrail Counties.

Cereal and Forage Insects: The heaviest GRASSHOPPER infestation since the 1930's occurred over most of the State during the 1957 crop season. The egg hatch in western counties was well underway on May 13. First-instar nymphs, 20 to 40 per square yard, of *Melanoplus bivittatus* and *M. bilituratus* were common in stubble fields. Roadside counts were as high as 75 to 100 nymphs per square yard. On May 16 the movement of young grasshoppers from stubble to adjacent fallow-planted grains was observed and damage evident. Control measures were begun immediately in these areas to protect the crops. By June 1, the egg hatch was general over the State. However, because of cool, wet weather and heavy plant growth, the hatch of *M. bivittatus* and *M. bilituratus* was extended over a long period. The first nymphs of *M. femur-rubrum* were observed in alfalfa on June 10. The hatch of this species was also extended over a long period.

The control of grasshopper nymphs in field margins and roadsides was stressed after major hatch was completed. This marginal control was practiced widely and was successful in preventing severe crop damage. Sixty percent of the North Dakota counties initiated local roadside spray programs to control grasshoppers. Field spraying of flax to control adult grasshoppers was necessary in many sections after small grains were harvested.

Rangeland grasshopper infestations developed in Golden Valley, Slope, Ransom, and Richland Counties. Dominant species infesting range were *Ageneotettix deorum*, *Melanoplus bilituratus*, *M. femur-rubrum*, *M. packardii*, and *Amphitornus coloradus*. A Federal-State-County rancher program was conducted on 9,504 acres in Golden Valley and Slope Counties; 62,721 acres of Federal domain (rangeland) were treated in Ransom and Richland Counties. Exceptional grasshopper control was attained by chemical treatments in these areas. The Federal government treated 400 acres of government-owned land along the Garrison Reservoir in Williams County which was heavily infested with *M. bivittatus*.

Adult grasshopper surveys completed in early September indicated that infestations in general had diminished, although they may still threaten 1958 crop production over a wide area.

In summary, grasshopper control was carried out on 266,057 acres of roadsides; 62,721 acres of Federal domain (rangeland); 59,100 acres of private rangeland; 162,477 acres of legumes; 939,537 acres of small grain; and 100,400 acres of other crops for a grand total of 1,590,292 acres sprayed to control grasshoppers. It is estimated that this control spraying protected 5,196,280 acres. The estimate of losses from grasshoppers in 1957 is placed at \$1,682,000. The estimate of savings resulting from timely control is \$17,102,250.

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - Winter survival of borers was estimated at 80 percent in eastern North Dakota counties. Pupation was complete by June 24. Egg-laying reached peak during the week of July 8 with a heavy hatch of first-generation larvae the week of July 15. Cool weather in June slowed both corn and borer development. Heat during early July speeded corn growth and apparently provided optimum conditions for moth flights and egg-laying. First-generation borers infested from 15 to 96 percent of the stalks. From 20 to 30 percent of the fields surveyed had infestations at levels of 75 percent or above. Borer infestations in Cass, Richland, and Traill Counties averaged 210 borers per 100 plants.

On August 19, nearly 50 percent of the first-generation borers had pupated. Cool, wet weather through the remainder of the month hampered moth emergence and flight. This resulted in an extremely light egg deposition and an unimportant second generation.

Fall infestation surveys conducted in Grand Forks, Traill, Cass, Richland, Sargent, and Ransom Counties showed a 20 percent increase in the number of infested plants compared with 1956 data. Infestations in Cass and Richland Counties showed a 50 percent increase in the number of borers per 100 plants. The corn loss due to European corn borer damage is estimated at 5.4 percent in the six southeastern-counties.

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - Scattered infestations requiring control were present in western North Dakota. Infestations ranged from 1 to 6 larvae per square foot. Severe damage to alfalfa and flax was observed in several fields. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - Heavy feeding in old stands was common but injury to new plantings was not severe. SWEETCLOVER APHID (*Myzocallidium riehmii*) was present in old stands on May 31 and could be found in all sweetclover fields in eastern North Dakota thereafter. This insect appeared to be less abundant than in 1956. WIREWORMS - Crop damage reports were the lowest in many years. BLISTER BEETLES - Numerous infestations in scattered alfalfa fields and in a few soybean fields were observed. However, little crop damage was reported. WHEAT STEM SAWFLY (*Cephus cinctus*) - The most severe infestations were observed again this year in McLean, Ward, and Mountrail Counties where an average of 50 percent of the stems were infested. Some fields in Williams, Divide, Burke, Renville, and Bottineau Counties also had heavy infestations. The loss to wheat this year is estimated at 6.5 percent or 1,682,030 bushels. FIELD CRICKETS were unusually abundant in eastern counties. HESSIAN FLY (*Phytophaga destructor*) - Following several reports received during the summer, a fall survey was made in the southwest counties and infestations in volunteer spring wheat were as high as 6 percent. A cool, wet spring could mean a rather severe outbreak in some areas. Hessian fly has not caused damage to wheat in North Dakota since 1945. Scattered infestations of WHEAT MIDGE (*Sitodiplosis mosellana*) in Pembina County were mostly light in nature, although several fields showed 16 percent of the heads infested. Scattered larval infestations of THISTLE BUTTERFLY attacking soybeans and sunflowers required control in the Red River Valley area. Many large thistle patches were completely defoliated throughout eastern North Dakota. Unusually high populations of SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) occurred in flax and small grain fields during June. These heavy populations were responsible for transmitting the virus disease aster yellows to flax over a wide area of the State. The incidence of this disease in flax was the highest ever recorded in North Dakota. The percentage of flax plants infested varied widely from field to field with a range from a trace to 50 percent of the plants showing disease symptoms. Scattered larval infestations of BEET WEBWORM (*Loxostege sticticalis*) in alfalfa, flax, and wheat requiring control occurred in north central North Dakota. First collections of POTATO LEAFHOPPER (*Empoasca fabae*) were made in alfalfa on July 19 in Richland County. This was nearly three weeks later than the average appearance date for this insect in North Dakota.

Truck Crop Insects: SIX-SPOTTED LEAFHOPPER infestations appeared 10 to 14 days earlier than usual in potato fields. They were abundant on July 8 when up to 22 leafhoppers were collected per 25 net sweeps. These high leafhopper populations together with their early appearance in potato fields, were responsible for the increase of the purple top virus disease of potatoes over previous years. An estimated 6 percent of the six-spotted leafhoppers were viruliferous compared with an estimated average of less than 1 percent in other years. POTATO LEAFHOPPER migration to potatoes occurred the week of July 22. Infestations of moderate intensity were general and were considered to be near normal in abundance. SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) populations were moderate with little damage reported. Control treatments are holding well. Scattered larval infestations of BEEB WEBWORM occurred in sugar beet fields in eastern North Dakota beginning the week of July 15. Some control work was done in fields where populations were high. Moths were numerous in the area north of Grand Forks; however, potential infestations did not materialize. The infestation was the first of any consequence since 1950. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) populations were the lowest in ten years. Medium populations of POTATO FLEA BEETLE (Epitrix cucumeris) occurred during the season. Migration to potatoes was later than usual.

Ornamental and Shade Tree Insects: APHID infestations on shade trees, ornamental shrubs, and perennial plants were the heaviest in many years. Cool, damp weather during June allowed populations to increase rapidly and held back development of predators. PINE NEEDLE SCALE (Phenacaspis pinifoliae) infestations on spruce appear to be increasing in eastern North Dakota. SPRUCE NEEDLE MINER (Taniva albolineana) infestations on spruce were widespread. Control measures were necessary in several nursery plantings. Three infestations of BAGWORMS on juniper were reported this season, two from Cass County and the other from Emmons County. This pest has not been reported in the State since 1950.

Insects Affecting Man and Animals: MOSQUITOES - Severe populations developed as a result of above normal rainfall in most sections of eastern North Dakota. Early spring (May to June) populations of Aedes spenceri were troublesome in the vicinity of Grafton and St. Thomas. Aedes vexans was the predominant species from mid-June to September, with populations remaining at high levels throughout the season. Culex sp. were about normal in abundance. Culiseta sp. were not as abundant during the fall. AMERICAN DOG TICK (Dermacentor variabilis) populations were high in eastern North Dakota. HORN FLY (Siphona irritans) was probably the most severe cattle pest during 1957. BROWN-BANDED ROACH (Supella supellectilium) - Several infestations were reported again in 1957. This pest has been known to occur in the State since 1954. CAT AND DOG FLEAS - Numerous reports of basement infestations were received. CAVE CRICKET infestations in basements were numerous throughout the summer.

Stored-Product Insects: CARPET BEETLE infestations in the home were numerous. MITES AND PSOCIDS - Numerous infestations were reported in grains with high moisture content.

SUMMARY OF INSECT CONDITIONS - 1957

WYOMING

Reported by Wyoming Association of Entomologists

Highlights: Most significant factor was result of spring weather conditions, which included an abundance of moisture. The heavy moisture prevented the application of normal control measures for many of the field crop insects and several species increased greatly and high numbers were present to go into hibernation.

Cereal and Forage Insects: GRASSHOPPERS of many species infested nearly a million acres of Wyoming rangeland. Cooperative control was applied to 446,813 acres. Winter wheat damage was severe in restricted areas. MORMON CRICKET (*Anabrus simplex*) was controlled on more than 36,000 acres and damage was held to a minimum. CORN LEAF APHID (*Rhopalosiphum maidis*) was much less prevalent than in 1956, small numbers being found only in barley. ALFALFA WEEVIL (*Hypera postica*) was the worst that it has been in several years because of lack of control during the wet spring. High counts gave 72 larvae in 10 sweeps. LYGUS BUGS (*Lygus* spp.) were equal to 1956 but appeared later. First-generation WEBWORMS were heavy in all crop areas. Apparently some factor prevented the second generation from increasing in number and causing damage. CLOVER ROOT CURCULIO (*Sitona hispidula*) was numerous except in fields sprayed for alfalfa weevil. Damage was not thought to be severe. CORN EARWORM (*Heliothis zea*) was not reported as being severe in any area. ARMYWORM (*Pseudaletia unipuncta*) was reported only in one county (Fremont) where 1000 acres were sprayed for control. VARIEGATED CUTWORM (*Peridroma margaritosa*) was reported in Park County. ARMY CUTWORM (*Chorizagrotis auxillaris*) damaged wheat in Platte County. Tortrix pallorana was heavy on seed alfalfa in central part of State. No satisfactory control was found. WHEAT CURL MITE (*Aceria tulipae*) was prevalent near Torrington and Pine Bluffs. One field near Hawk Springs was seriously damaged by wheat streak mosaic. Other fields were little damaged. SPOTTED ALFALFA APHID (*Therioaphis maculata*) has not yet been found in the State.

Truck Crop Insects: POTATO PSYLLID (*Paratrioza cockerelli*) was heavy in all potato-growing areas. Much damage was done in spite of the controls applied. BEET WEBWORM (*Loxostege sticticalis*) required control for first generation. Second generation did not develop. EUROPEAN EARWIG (*Forficula auricularia*) was taken at Laramie, Albany County, during the year. This is a first record for the county. SLUGS were bothersome in a few home gardens.

Forest, Ornamental and Shade Tree Insects: MITES were present and damaging on many ornamental evergreens. EUROPEAN ELM SCALE (*Gossyparia spuria*) was very bad and is increasing in all areas where elms are grown. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) severely damaged golden willow and ash in shelterbelt plantings. Bibio spp. larvae were an annoyance in some lawns. A COCKSCOMB APHID was very heavy in elms. SCURFY SCALE (*Chionaspis furfura*) badly infested several species of shrubs. PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) was very bad in many areas. All scales on ornamentals appear to be increasing. A COTTONWOOD APHID was very heavy on poplars in Laramie.

Man and Animal Pests: MOSQUITOES were worse than for several years in most areas. Several towns and cities sprayed for control. SHEEP KED (*Melophagus ovinus*) was normal on untreated sheep. A WOOL MAGGOT was heavy because of wet weather and the consequent delay in the shearing schedule. CATTLE GRUBS were present in usual large numbers. Losses totaling \$2,000,000 were estimated. CATTLE LICE were present in most herds, making control necessary. ANTS as household pests were quite numerous in several areas.

Beneficial Insects: HONEY BEE (Apis mellifera) production of honey was down. AN ALKALI BEE, which is the most important alfalfa pollinator, was two to three weeks late in emerging. This resulted in poor pollination in seed-producing areas. Collops vitattus was very numerous in alfalfa fields in central part of State.

SUMMARY OF INSECT CONDITIONS - 1957

MONTANA

Reported by George Roemhild

Highlights: GRASSHOPPERS were the number one insect problem in Montana during 1957. Both cropland and rangeland species were present in high numbers over many localized areas in the State. Cropland species, mainly Melanoplus bivittatus and M. bilituratus, were present in the northeastern part of the State and control measures were taken on over 500,000 acres. Rangeland areas infested included spots in the northwestern, southwestern, central, and southeastern areas. Abundant rains during May and June produced an outstanding crop of forage in many areas and consequently the percentage damaged in these areas was not high even though large numbers of grasshoppers were present. Beginning about May 15, PEA APHID (Macrosiphum pisi) started to build up in alfalfa fields in the eastern part of the State. By the 15th of June many alfalfa fields were heavily infested and control measures had to be taken in many places.

Cereal and Forage Insects: ARMY CUTWORM (Chorizagrotis auxiliaris) was present in rather large numbers in the central counties with scattered infestations in northern, southern and eastern areas. The ARMYWORM (Pseudaletia unipuncta) was reported only from one locality, in the eastern part of the State, where it did considerable damage to oats. Damage from the PALE WESTERN CUTWORM (Agrotis orthogonia) was down from 1956 in that infestations were found only in local central areas. Two infestations of WHEAT HEAD ARMYWORM (Faronta diffusa) were reported during 1957; one from the north central part and one from the eastern part of the State. GARDEN WEBWORM (Loxostege similalis) was reported from the southeast and from scattered spots through the central counties on alfalfa. FLEA BEETLES of various species appeared to be down in numbers this year and only scattered reports of forage crop damage were made. A CARRION BEETLE (Silpha bituberosa) severely damaged alfalfa in Big Horn County. BLISTER BEETLES were extremely abundant during the year and scattered damage from all areas was reported on alfalfa and various ornamentals. The species involved were Pyrota mylabrina, Lytta cyanipennis, L. stygica, and Linsleya sphaericollis. A TIPULID (species unknown) was reported damaging alfalfa in Sanders County during August. LYGUS BUGS (Lygus spp.) appeared to be up during 1957 and damage was reported from all areas. ALFALFA WEEVIL (Hypera postica) continues to be Montana's number one alfalfa pest and control measures are taken accordingly each year. A new area of infestation was reported this year from the Gallatin Valley. WIREWORMS (various species) appeared to be up in most of the grain-growing sections of the State this year. A WHEAT APHID (Brachycolus tritici) was present in scattered spots in the north central part of the State. SAY STINK BUG (Chlorochroa sayi) was reported from the northeastern area in August on wheat. The BUMBLE FLOWER BEETLE (Euphoria inda) damaged corn during September in the central and south central areas. CLOVER LEAFHOPPER (Aceratagalla sanguinolenta) damaged barley during June in Chouteau County. A LEPIDOPTEROUS LARVA (Calliarctia sp.) was found damaging spring wheat in Judith Basin County on June 16. MEADOW PLANT BUG (Leptopterna dolabratus) damaged crested wheatgrass fields in Rosebud County on June 6.

Fruit Insects (Reported by D. R. Merkle, Horticultural Branch Station, Corvallis): CODLING MOTH (Carpocapsa pomonella) was present in all apple-growing areas. The EYE-SPOTTED BUD MOTH (Spilota ocellana) was present in greater

numbers in Ravalli County than in previous years. Heavy infestations of PEAR LEAF BLISTER MITE (*Eriophyes pyri*) occurred in orchards where control measures were not applied. The APPLE APHID (*Aphis pomi*) occurred in very severe infestations, seemingly more difficult to control. Several generations of this insect were present. BLACK CHERRY FRUIT FLY (*Rhagoletis fausta*) populations were about normal, although infestations were found in plantings where no control measures were applied. BLACK CHERRY APHID (*Myzus cerasi*) was present in all cherry-growing areas with severe damage where no control measures were made. A PLUM NURSERY MITE (*Vasates foeculi*) populations were down from previous years. PEAR-SLUG (*Caliroa cerasi*) did severe damage to trees which were not sprayed. Complaints concerning CURRANT FRUIT FLY (*Epochra canadensis*) came in from scattered areas. RASPBERRY ROOT BORER (*Bembecia marginata*) did considerable damage to plantings in Ravalli and Missoula Counties. STRAWBERRY LEAF ROLLER (*Ancylics comptana fragariae*) caused severe damage to one small planting in one area of Ravalli County.

Truck and Garden Insects: CORN EARWORM (*Heliothis zea*) was abundant in most gardens and commercial plantings in the southern, eastern, and western parts of the State. EUROPEAN EARWIG (*Forficula auricularia*) is spreading gradually throughout southern and western portions and is important in home gardens and commercial plantings throughout this area. BEET WEBWORM (*Loxostege sticticalis*) was present in the south central area in scattered local infestations. Only a few POTATO PSYLLIDS (*Paratrioza cockerelli*) were found during 1957. WHITE GRUBS (*Phyllophaga* sp.) apparently are becoming more important in gardens and vegetable plantings.

Insects of Ornamentals: SPRUCE NEEDLE MINER (*Taniva albolineana*) was not as abundant in 1957 as in previous years. SPRUCE BUDWORM (*Choristoneura fumiferana*) attacked ornamental spruce plantings in many parts of the State. These attacks were probably the result of heavy spruce budworm infestations in surrounding forest land areas. A PINE WEEVIL (*Pissodes schwarzi*) caused considerable damage to terminal growth of pines in the western part of the State. A PINE TIP MOTH (species unknown) attacked pines in Yellowstone County. PINE NEEDLE SCALE (*Phenacaspis piniifoliae*) was not as abundant but did show up in localized infestations, especially in the central area. A JUNIPER BORER (*Phloeosinus dentatus*) continued to attack juniper for the second year in Powder River County. COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) is becoming more abundant and inquiries have been received from all parts of the State. A WILLOW LEAF GALL, caused by *Pontania* sp. was prevalent in the northern and western areas. POPLAR VAGABOND GALL (*Mordwilkoja vagabunda*) was common on cottonwoods, especially in the north and east. The larvae of the MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) caused severe defoliation of poplars and elm in the north central and eastern parts of the State. LILAC LEAF MINER (*Gracilaria syringella*) was in outbreak proportions and did damage locally to lilacs in southern, central and western areas. ELM LEAF APHID (*Myzocallis ulmifolii*) continues to be a pest wherever elms are planted. A COTTONWOOD STEM GALL MITE (*Eriophyes* sp.) has done considerable damage to many cottonwood plantings in north central and eastern sections. POPLAR PETIOLE GALL APHID (*Pemphigus populi-transversus*) was very abundant and caused trouble in the central, eastern, and in localized western areas. A COTTONWOOD LEAF MINER was noted in the north central area in local severe infestations. COTTONWOOD LEAF BEETLE (*Chrysomela scripta*) was in its second year of abundance in the eastern and north central counties. Many of the shelter belt areas which included ash, cottonwood, and boxelder, were very heavily damaged during the past year by carpenterworms. BOXELDER APHID (*Periphyllus negundinis*) was very abundant over most of the state wherever boxelders are growing. ASH PLANT BUG (*Neoborus amoenus*) was apparently down in number and only scattered local infestations were noted in the north central part of the State. ROSE GALLS caused by *Diplolepis* sp. have been very common the last two years. A LECANIUM SCALE (*Lecanium corni* or close to this species) was very abundant this year on caragana and rose in northern and eastern areas. A GREENHOUSE FLATWORM (*Bipalium* sp.) was reported for the first time from a greenhouse in Helena. A GLADIOLA THRIPS was more abundant than usual during this season. Two other pests, which were numerous this year were COTTONY-CUSHION SCALE (*Icerya purchasi*) found in the Kalispell area and at Corvallis and COTTONY-MAPLE SCALE (*Pulvinaria innumerabilis*) found in

abundance on several hosts in the Missoula area.

Insects of Stored Food and Household: BOOK LICE (Psocidae) have been very abundant during the last two years in grain bins, especially during the early part of the storage season. In general, insects attacking stored grain have not been too troublesome although scattered infestations of the following have been reported: GRANARY WEEVIL (Sitophilus granarius), INDIAN-MEAL MOTH (Plodia interpunctella), MEALWORM (Tenebrio molitor), CONFUSED flour beetle (Tribolium confusum), RED FLOUR BEETLE (T. castaneum), MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella), A GRAIN BEETLE (Laemophloeus sp.) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis). TERMITES (Reticulitermes sp.) appeared to be building up in many areas of the State and inquiries during the last two years have been many times those previously experienced. ANTS of various species have caused a good deal of concern in many areas around the State. BED BUGS (Cimex lectularius) are very scarce and only two occurrences were reported. BLACK WIDOW SPIDER (Latrodectus mactans) appears to be about the same as several localities have reported its presence. BOXELDER BUG (Leptocoris trivittatus) was very abundant and caused concern, especially in north central and eastern sections. CAMEL CRICKETS and JERUSALEM CRICKET (Stenopelmatus fuscus) have resulted in many inquiries concerning identification and control. CLOVER MITE (Bryobia praetiosa) does not appear to be as abundant as in previous years although a few cases from the central and eastern areas were reported. CLUSTER FLY (Pollenia rudis) has caused considerable concern among housewives, especially in the southern and western areas. DERMESTIDS of various species continue to be the number one household pest and each year bring scores of inquiries from areas all over the State. SOLDIER BEETLE LARVAE (Cantharidae) have been reported from several houses throughout the State. These occurrences appear late in the year and are probably the result of these insects taking up winter quarters.

Forest Tree Insects (Reported by P. C. Johnson, Forest Insect Laboratory, Missoula) SPRUCE BUDWORM (Choristoneura fumiferana) caused from light to moderately heavy defoliation on 2,846,000 acres of Douglas-fir forests, exclusive 785,000 acres of budworm-infested forests aerielly sprayed with DDT in July. Tree mortality was heavy in spots in reproduction and sapling size trees. Spruce budworm larval feeding in conjunction with that of the black-headed budworm caused significant defoliation of western hemlock trees in northwestern counties. BLACK-HEADED BUDWORM (Acleris variana) larval feeding caused severe defoliation and some tree mortality on 32,000 acres of western hemlock forests. Control measures employing aerial DDT spraying were applied to 6,500 acres of infestation in Glacier National Park. Natural control appeared effective in the remaining infested acres during late summer. The first Montana infestation of the DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) reported in 1956 was completely controlled by natural factors and caused no damage in 1957. A BUD MOTH (Zeiraphera griseana) caused extensive defoliation of western larch forests for the second year. Approximately 125,000 acres of mature larch stands are infested in western Montana. Bud moth feeding caused at least a 50 percent reduction in usable leaf surface of infested trees in 1957. Bud moth damage of this magnitude has not previously occurred in the State. A LOOPER (Semiothisa sexmaculata) continues to cause defoliation in western larch forests since its initial outbreak discovery in 1955. Injury to foliage was negligible except in a few heavily infested areas. LARCH SAWFLIES (Anoplonyx occidens and A. laricivorus) were observed in association with those of the larch looper throughout the range of western larch, the host tree in Montana. The amount of visible damage to the foliage as a result of their feeding appeared slight. A FOLIAGE MOTH (Diorycetria spp.) has caused extensive defoliation of Douglas-fir through central Montana in conjunction with feeding of the spruce budworm on the same trees. HEMLOCK SAWFLY (Neodiprion tsugae) infestations have been intermingled with those of the black-headed budworm to cause considerable defoliation of western hemlock forest trees in northwestern Montana. A SAWFLY (Xyela sp.) was reported feeding on ponderosa pine flowers near Kalispell. COOLEY SPRUCE GALL APHID (Chermes cooleyi) - High endemic infestations were reported in Douglas-fir Christmas tree stands in the northwest. The infestations are associated with severe infections of the

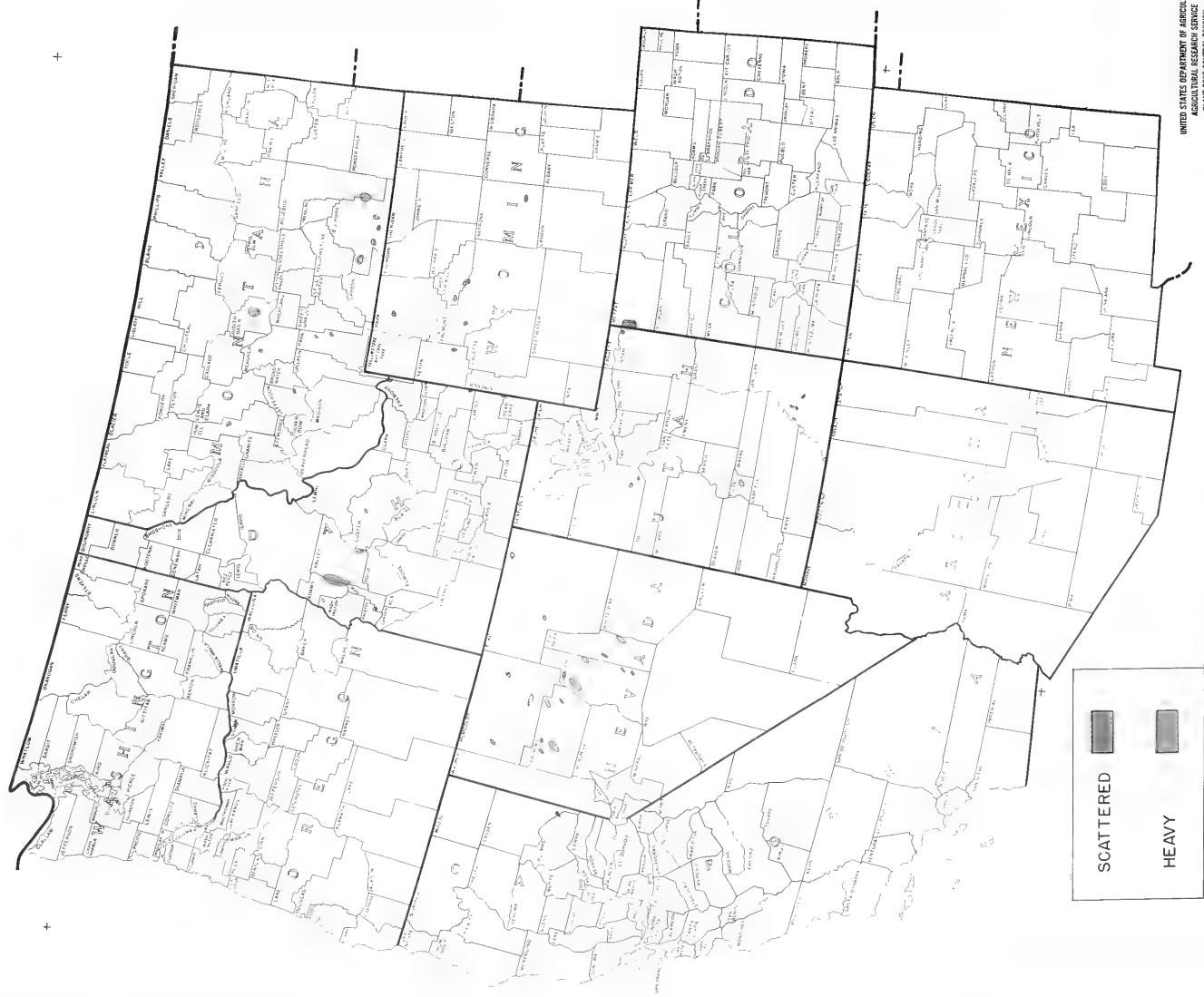
Douglas-fir needle blight (*Rhabdocline pseudotsugae*). SPRUCE SPIDER MITE (*Oligonychus ununguis*) was very severe and widespread infestations appeared in 1957 on 800,000 acres of Douglas-fir forests. The infestations are believed to be related to the use of aerial DDT insecticides used in these same areas in 1956 to control epidemic infestations of spruce budworm. The infestations were also favored by hot dry weather during the early summer. A MITE (*Pentamerismus erythreus*) caused serious browning of native juniper trees in central Montana. A FIR ENGRAVER (*Scolytus subscaber*) caused visible twig injury to several hundred acres of alpine fir near Lincoln. WESTERN PINE BEETLE (*Dendroctonus brevicomis*) mortality of ponderosa pine trees remained at a low endemic level; infested trees occurred widely scattered throughout mature pine stands. MOUNTAIN PINE BEETLE (*D. monticolae*) - An active infestation in lodgepole pine stands in Glacier National Park caused the death of 1,608 trees on 300 acres in 1957. The infestation has continued at a high level in this area for the past 4 years. Only scattered single mature trees have been killed by the beetle in ponderosa pine forests immediately west of the Continental Divide. DOUGLAS-FIR BEETLE (*D. pseudotsugae*) - Approximately 25 percent of the mature overstory trees on 1,000 acres in Yellowstone National Park was killed during the past three years. The beetle-infested trees were previously heavily defoliated by the spruce budworm in 1953-55. The area was treated with a DDT aerial spray for budworm control in 1955. ENGELMANN SPRUCE BEETLE (*D. engelmanni*) - Remnants of the 1952-56 epidemic outbreak continue in northwestern Montana. The infestation is gradually killing the remaining mature spruce in the drainage bottoms despite logging measures to remove the infested trees as a control device. Approximately 100 million board feet of mature spruce timber was killed in 1957. IPS ENGRAVER BEETLES (*Ips* spp.) - Scattered small infestations in ponderosa and western white pine stands were noted but damage was insignificant. WESTERN PINE TIP MOTH (*Rhyacionia frustrana bushnelli*) caused flagging of ponderosa pine foliage near Ekalaka, and PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) was frequently reported during the year on ponderosa plantings.

MORMON CRICKET ADULT SURVEY - FALL 1957





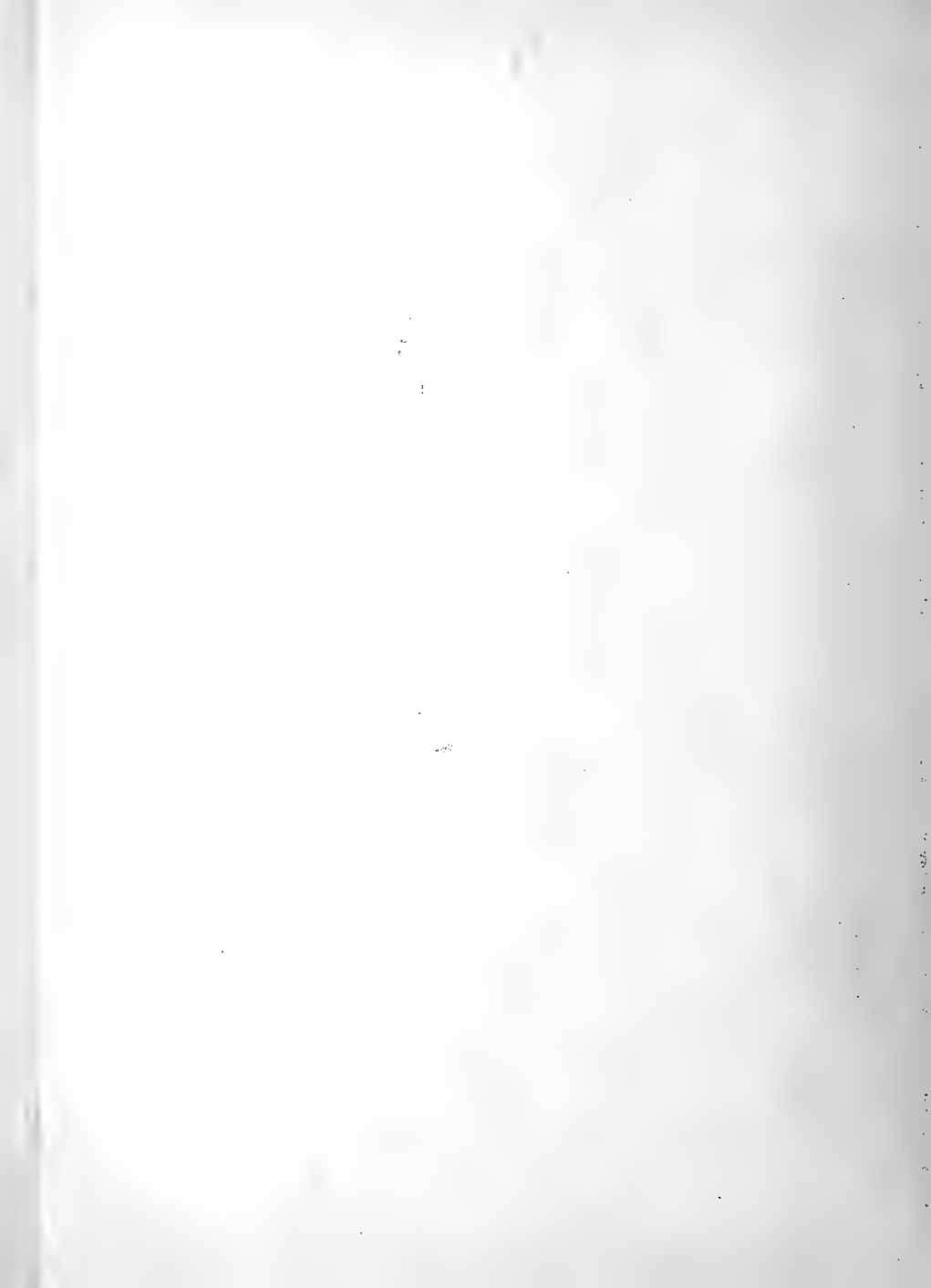
MORMON CRICKET ADULT SURVEY - FALL 1957



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AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION







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Cooperative
**ECONOMIC INSECT
REPORT**

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PLANT PEST SURVEY SECTION

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 of Insect Conditions

BOLL WEEVIL hibernation counts higher in Madison County, Louisiana, than any time on record except those of 1955. More weevils found in trash in McNairy County, Tennessee, than any time since 1952. (p. 29).

Status of the EUROPEAN CORN BORER in 1957. (p. 33).

SUMMARY OF INSECT CONDITIONS - 1957 - Louisiana. (p. 43).

INSECTS not known to occur in the United States. (p. 47).

WEATHER OF THE WEEK ENDING JANUARY 13, 1958

More cold weather in Florida, unseasonably high temperatures in the northern Great Plains, and a severe storm along the North Atlantic Coast were the week's main weather highlights, as continued mild, dry weather in the Western Great Plains further depleted topsoil moisture and cold, wet weather in the Southeast continued the unfavorable development of fall-planted crops.

The latest of a series of cold snaps in Florida this winter resulted in average temperatures for the week of 10° to 13° below normal. Snowfall was observed at numerous Northern and central locations on the 8th, and although most of it was limited to a few flakes which melted as they fell, several points in Hillsborough and Polk Counties reported accumulations sufficient for snowballs. Citrus further suffered as minima on the 9th ranged mostly in the low 20's in north, the middle 20's in central portions, and the low 30's in the south, and frost occurred in inland areas along the lower east coast. Minima were not quite as low on the 10th, but frost was reported in nearly all districts. Daytime temperatures on the 8th remained near or below 40° in north and central portions. It is interesting to note that in contrast, maximum temperatures in North Dakota on the 8th were in the middle 40's and low 50's.

The week was more than 20° warmer than normal at many points in the Northern Great Plains. A high of 70° was recorded at Wood, South Dakota on the 8th, and on the same date Lead, South Dakota, had 62°, a new high for January. A storm in the northern Gulf of Mexico produced moderate to heavy rains in all Gulf coastal areas on the 6th, and along the Atlantic Coast on the 7th as it moved northward about 150 miles offshore after crossing the Florida Peninsula. Centered near Cape Cod, Mass., at 1 a.m., on the 8th, winds over a small area reached hurricane force, and a low barometer reading of 28.35 inches set a new January record at Nantucket, Mass. Several hundred dwellings were damaged in Cape Cod and south shore areas of Massachusetts, and trees and wires were downed. Damage of \$200 thousand was preliminarily estimated for these areas, and an equal amount for the remainder of New England. Precipitation was mostly in the form of snow from Virginia northward. During the storm over 12 inches of snow fell on the lower Delmar Peninsula of Maryland, 8 to 15 inches along the New Jersey Coast and 2 to 4 inches in the west and central portions of the State. Falls ranged from 4 to 12 inches over most of New England, but much heavier falls of up to 20 inches were reported in central and eastern Connecticut and northwestern Rhode Island.

Temperatures for the week averaged below normal east and south of lines joining Dallas, Texas, with Sault Ste. Marie, Mich., and El Paso, Texas, respectively, except in Maine where they were slightly above. Elsewhere weekly averages were above normal except normal or slightly below in the Central Valley of California. Greatest average departures for the week ranged from 14° below normal at Charleston, S. C., to 22° above at Devils Lake, North Dakota. Precipitation exceeding an inch generally was limited to the Atlantic, Gulf, and central and northern Pacific coastal areas and a few locations in the southeastern Great Plains. Elsewhere falls were very light with most of the Great Plains recording none. Much of the heavy snow in the Northeast had melted by the end of the week, with a 1-inch cover extending only as far south as northern New Jersey. The ground was bare in the Ohio and middle Mississippi Valleys and throughout the Great Plains. In the Far West, accumulations in the Cascades continued to increase and depths were above average for this time of the year. (Summary Supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Occasional specimen on barley in Major County (Coppock); averaging less than one per linear foot of wheat in Logan County (Henderson, Wood) and approximately 10 per linear foot in volunteer oats in Kingfisher County (Owens).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Counts averaged 10 per 10 sweeps in 2 fields in Washita County (Hudson), and 10 per 10 sweeps from one field in Garfield County (Owens).

ALFALFA WEEVIL (Hypera postica) - CONNECTICUT - Found in all counties of State surveyed summer of 1957. The only county not surveyed was Middlesex, and this county was assumed infested. The additional records should be added to map on page 18, CEIR 8(2), January 10. (Turner).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Average number in hibernation per square foot of bunch grass was 1,450 in Garfield County, 188 in Grant County, 4.3 in Alfalfa County, 23 in Major County and 29 in Woods County. Highest counts were 6,941 per square foot of grass in Garfield County. (Coppock, Fed.-State Chinch Bug Survey).

GRAIN APHIDS - OKLAHOMA - Light scattered numbers of Macrosiphum granarium and Rhopalosiphum fitchii occur on small grains in most northwestern counties. Light populations of R. maidis (0-20 per linear foot) found in barley in same area. (Coppock).

A PYEMOTID MITE (Siteroptes graminum) - OREGON - Recovered in small numbers in Springwater, from Chewing's fescue, January 2. This species has been tentatively implicated in the transmission of silvertop disease of grasses. (Krantz, Jan. 6).

FRUIT INSECTS

AN ERIOPHYID MITE (Vasates fockeui) - CALIFORNIA - Heavy infestation on cherry 3 miles east of Linden, San Joaquin County. This is first infestation of cherry in central California. This species has not been a pest of much importance to date, although the mite was found in damaging numbers about ten years ago near Elk Grove involving prunes. (Kiefer, Dec. Taxonomy Report).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Light locally on olive in Sacramento County. (Cal. Coop. Rept.).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Light infestations within 10 city blocks of Sacramento. Survey continuing. (Cal. Coop. Rept.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - OREGON - Root-inhabiting forms caused considerable damage to young apple stock in a Salem nursery. (Capizzi).

TRUCK CROP INSECTS

MELONWORM (Diaphania hyalinata) - FLORIDA - Adult collected at window at Mandarin, Duval County, December 12, 1957. (Dempsey).

CELERY LEAF TIER (Udea rubigalis) - CALIFORNIA - Light locally on artichokes in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

COTTON INSECTS

Boll Weevil Hibernation Survey in Fall - 1957. LOUISIANA - Collections of surface

woods trash samples were made from November 4 through December 10 in northeastern Louisiana area comprised of East Carroll, Madison and Tensas Parishes. The number of weevils per acre found was 10,330 in East Carroll Parish; 6,940 in Tensas Parish; and 6,860 in Madison Parish. The average for the area was 8,043. Similar records have been made in Madison Parish for 22 years, beginning in the fall of 1936. In only one year, 1955, has a larger number of weevils been found in the fall surface woods trash survey, than the 6,860 per acre found in the fall of 1957. Following continuous rains in September there was an abundant supply of squares, blooms and young bolls in all cotton fields which afforded food and breeding material for boll weevil. Even though defoliation was very general before the hard freeze on October 28 occurred, it is apparent that there was a heavy population present. (Smith, Cleveland, Read, Williams). TENNESSEE - The results of the survey in McNairy County an show an average of 2,365 live weevils per acre. More weevils were found in hibernation in the fall of 1957 than any time since the fall of 1952, when the average was 2,259 per acre. The counts in McNairy County represent the heaviest weevil-infested area in the State, however the remainder of the southern counties should run only slightly lower in their averages. (Locke).

PINK BOLLWORM (*Pectinophora gossypiella*) - OKLAHOMA - Twenty-one lint cleaner and 18 gin stands were inspected in 12 counties; total of 54 larvae were found. Six counties were negative. (Fed.-State PBW Com., Dec. 30). MISSOURI - A survey was conducted in 5 southeastern counties by personnel of the Missouri State Department of Agriculture, University of Missouri, Southeastern Experiment Station and Plant Pest Control Division of ARS. Of 204.5 bushels of trash inspected, no pink bollworm was found. (Hare).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A SAND LILY APHID (*Myzus leucocrini*) - FLORIDA - Heavy infestations on daylily at Gainesville (Hetrick), December 22, 1957. Det. A. N. Tissot. Also reported heavy on daylily at Jacksonville, December 30, 1957. (King). First record for the State. (H. Denmark).

AN ASIATIC RED SCALE (*Aonidiella taxus*) - FLORIDA - Found on podocarpus at Groveland, Lake County. It is believed that movement of nursery stock is disseminating pest. Infested nurseries are quarantined and an attempt to control the scale is being made. (H. Denmark).

LOCUST TWIG BORER (*Ecdytolopha insiticiiana*) - PENNSYLVANIA - Moderate on black locust in Susquehanna County. (Gesell).

AN APHID (*Schizolachnus pini-radiatae*) - PENNSYLVANIA - Heavy infestation on Scotch and red pine in Monroe County during October, 1957. Det. L. M. Russell. (Drooz).

Uncommon Aphid Records for Utah. *Aphis nerii* infesting oleander at St. George in September; *Chaitophorus utahensis* on willows at Salt Lake and Oasis during June; *Cinara tanneri* abundant on piñon pine twigs near Duchesne in late May; *Drepanosiphum platanoides* on maple in Logan Canyon; *Lipaphis erysimi* (= *Rhopalosiphum pseudobrassicae*) on mustards at Santa Clara in April; *Macrosiphum rudbeckiarum* on *Rudbeckia* in Logan Canyon; *Myzocallis maureri* on oak at Camp Williams; *Pemphigus junctisensoriata* on *Populus angustifolia* at Heber in July; *Pentatrachopus thomasi* in rose sweeps at Garden City in June; *Phyllaphis iagi* infesting beech at Logan during June; *Pterocomma beulahensis* on poplar in Allen Canyon in July; *Thelaxes californicus* on oak at Farmington in spring; *Thripsaphis utahensis* in meadows at Provo, July 7; *Tilja scariolae* (= *Macrosiphum barri*) at Hurricane in fall. Det. Hille Ris Lambers. (Knowlton).

CHAFF SCALE (Parlatoria pergandii) - SOUTH CAROLINA - Infesting palmetto palm in Richland County. Det. by J. A. Berly. (Nettles)

EUONYMUS SCALE (Unaspis euonymi) - OKLAHOMA - Severe infestation on euonymus hedge in Tulsa. (Stiles). NORTH CAROLINA - On camellias and other shrubs in Orange County. (Harris, Farrier).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - CALIFORNIA - Medium on Coulter pine in Capitol Park, Sacramento. (Cal. Coop. Rept.).

A TREEHOPPER (Platycotis vittata) - SOUTH CAROLINA - Caused considerable damage to leaves and twigs of oak in Pickens, October 22. Det. by L. M. Russell. (Nettles, Wood).

INSECTS AFFECTING MAN AND ANIMALS

SHAFT LOUSE (Menopon gallinae) - FLORIDA - Adult collected on chicken at Dade City, Pasco County, December 12, 1957. Det. K. C. Emerson. (Jaquette).

BED BUG (Cimex lectularius) - MARYLAND - Troublesome in homes at Hyattsville and Rockville. (U. Md., Ent. Dept.).

CATTLE GRUBS (Hypoderma spp.) - NORTH CAROLINA - None found in 73 cattle examined in Wake County, 9 head in Alamance County and 105 head in Davidson County. (Jones, Farrier, Gantt). Only one grub found in over 20 head in Orange County. (Greene). Average of 0.92 larvae per head in 24 dairy cows in Alamance County. None found on 35 treated animals in North Carolina State College herd in Wake County. (Jones, Farrier).

CHICKEN HEAD LOUSE (Cuclotogaster heterographus) - NORTH CAROLINA - Found on chickens in Iredell County, October 29, 1957. (Scott, Johnson).

STORED-PRODUCT INSECTS

BULB MITE (Rhyzoglyphus echinopus) - PENNSYLVANIA - Hyacinth bulbs very heavily infested in Lancaster County, December 30, 1957. (Pepper).

A DERMESTID (Perimegatomia vespulae) - CALIFORNIA - Light in sacks in Kern County and heavy in barrel of mixed corn and beans in Riverside County. These finds constitute the fourth and fifth records in State as far as known. (Cal. Coop. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Found in two new townships in Gadsden County. (H. Denmark).

AN EARWIG (Doru aculeatum aculeatum) - NORTH CAROLINA - Found in garden, flower plants in basement and in home in Caldwell County, November 6, 1957. (Cartner, Gurney).

COLLEMBOLA - NORTH CAROLINA - Adults of Achorutes armatus abundant in yard in Onslow County, November 18, 1957. Few adults of Sminthurinus elegans and Isotoma cinerea also found. (Scott, Wray).

AMERICAN COCKROACH (Periplaneta americana) - VIRGINIA - Heavy in a home in Vienna. (Rowell).

BLACK WIDOW SPIDER (Latrodectus mactans) - VIRGINIA - Found in basement of home in Radford. (Morris).

CLOVER MITE (Bryobia praetiosa) - VIRGINIA - Very heavy around windows of home in Bedford County. (Boone, Morris).

AN EARTHWORM MITE (Fuscuropoda agitans) - NORTH CAROLINA - An earthworm bed heavily infested in Wake County, December 31, 1957. (Wray, Farrier).

OLD HOUSE BORER (Hylotrupes bajulus) - NORTH CAROLINA - Large numbers emerging through pine paneling and pine subflooring into a home in Wake County. (Flake, Wright).

STATUS OF THE EUROPEAN CORN BORER IN 1957

Survey Data Provided by State Agricultural Agencies
Compiled and Summarized by
Leo G. K. Iverson
Plant Pest Control Division, United
States Department of Agriculture

Agricultural agencies in 24 States reported on surveys conducted in their States to determine the abundance and distribution of the European corn borer (*Pyrausta nubilalis*) in 1957. All survey data, summaries or records of field observations were submitted to Central Plant Pest Control Regional office for processing. This report is a compilation of all information submitted by the State agencies.

Distribution

The spread of the European corn borer continued to be to the south in 1957, particularly in Miss., Arkansas, Alabama and Louisiana. The most notable spread involved seven northeast parishes of Louisiana. Although the pest was reported from this State in 1948, surveys failed to disclose additional specimens until 1957.

Counties reported as infested for the first time in 1956 are as follows:

Alabama

Fayette
Lamar
Marion
Tuscaloosa
Walker

Arkansas

Baxter
Clark
Cleburne
Fulton
Izard
Madison
Marion
Newton
Searcy
Van Buren

Louisiana

Morehouse
Concordia
Tensas
Madison
East Carroll
West Carroll
Richland

Mississippi

Holmes
Webster
Humphreys
Yazoo
Issaquena
Warren

South Carolina

Oconee

Abundance

The 1957 corn borer abundance survey began in late August and continued through November. The survey is designed to measure the fall population of corn borer larvae. The participating States were encouraged to time the surveys to include a high percentage of mature larvae whenever possible. In all cases except of minor differences in compiling data, the accepted survey methods were used.

The survey was continued on a district basis this year. A district is usually a group of counties within a State; however, some of the smaller states have been considered as a single district. A comparison of population levels for 1956 and 1957 is shown in Table 1.

Population levels of the European corn borer dropped quite drastically in the Eastern United States except for several counties in Rhode Island and Suffolk County, New York, where economic populations are still present. The average for this group of states fell from 186 borers per hundred stalks in 1956 to 104 in 1957.

The general decline in population trends shown in the Eastern States was also shown in several of the North Central States group. Illinois, Indiana, Michigan and Ohio recorded lower population levels in 1957 than in 1956. The most outstanding feature shown by the 1957 survey was the ability of this pest to rebound from comparatively low population levels to relatively high levels in one season. Notable examples occurred in Iowa, Missouri, South Dakota, Nebraska and northeastern Kansas. The overall average for this group of States rose from 102 borers per 100 stalks in 1956 to 178 in 1957.

Populations of the European corn borer reached the level where organized surveys became practical in Arkansas and Alabama. Thirty counties surveyed in Arkansas having an average of 28 borers per 100 stalks. In Alabama, 4 counties were surveyed showing 141 borers per 100 stalks.

For the entire United States, based on comparable districts surveyed, the average number of borers per 100 plants rose from 112 in 1956 to 170 in 1957.

A summary of the 1956 and 1957 surveys is shown in Table 1 by States and Districts. State summaries are shown in Table 2. Accompanying maps show districts surveyed, approximate population levels, and counties infested for the first time in 1957.

Table 1. Summary by States of European corn borer abundance in corn, fall of 1957, compared with data for 1956.

State	1956				1957				
	: Number of Districts Surveyed	: Number of Borer per 100 Plants	: Average of Districts	: Number of Counties Surveyed	: Number of Districts Surveyed	: Number of Borer per 100 Plants	: Average of Districts	: Number of Counties Surveyed	: Comparable Districts or Counties Surveyed Both Years
<u>Eastern United States</u>									
Delaware	1	243	1	3	1	90	1	243	90
Maryland	1	80	1	23	3	60	1	80	60
New Hampshire	1	22	1	9	9	8	1	22	8
New Jersey	1	365	1	12	12	89	1	365	89
New York	2	201	1	6	7	92	1	286	147
Pennsylvania	9	106	42	9	34	40	-	-	-
Rhode Island	1	335	1	5	5	312	1	335	312
Vermont	1	5	1	14	1	2	1	5	2
Virginia	2	171	2	32	2	116	2	171	116
West Virginia	4	38	1	12	1	40	2	-	-
Total	23	164	19	154	154	154	9	186	104
Average 1/									
<u>North Central States</u>									
Illinois	9	127	80	9	9	62	7	162	76
Indiana	11	97	92	12	12	32	11	97	35
Iowa	12	220	99	12	12	419	99	220	419
Kansas	3	31	27	4	4	119	29	31	153
Michigan	3	34	28	3	3	9	3	34	9
Minnesota	6	59	64	6	6	83	6	59	83
Missouri	4	90	49	7	7	346	4	90	410
Nebraska	5	147	64	7	7	230	64	136	272
North Dakota	4	44	14	3	3	93	6	50	93
Ohio	5	51	32	5	5	35	4	51	35
South Dakota	6	52	42	6	6	313	6	52	363
Wisconsin	8	23	61	7	7	36	55	25	36
Total	76	652	652	81	81	617	70	102	178
Average 1/									
<u>United States</u>									
Total	99	816	100	771	771	771	79	112	170
Average 1/									
States Surveyed but not Included in U.S. Average									
Alabama			1	4	1	141	1	-	141
Arkansas			1	30	1	28	1	-	28

1/ Weighted averages based on districts surveyed.

Table 2--European corn borer abundance in corn, fall of 1957 compared with data for 1956

State	Average number: of borers per 100 plants		State	Average number of borers per 100 plants	
	1956	1957		1956	1957
<u>Arkansas</u> (Ex. Sta., Ex. Ser.)			<u>Indiana (cont'd)</u>		
(Survey represents 30 counties. Range of borers per 100 stalks 0-149. Average for 30 counties 28 borers per 100 stalks).			-	SC	11
			Southeast Central	SE 117	27
			Southwest	SSW 24	3
			South Central	SSC 41	65
			Southeast	SSE 70	62
			State mean	97	32
			State mean comp. districts (11)	97	35
<u>Alabama</u> (Ex. Ser.)			<u>Iowa</u>		
Lauderdale	-	43	(State Dept. of Ag., Ex. Ser., Exp. Station, Ent. Research USDA)		
Colbert	-	122	District I	296	904
Marshall	-	276	District II	252	306
De Kalb	-	123	District III	68	118
Average		141	District IV	236	944
			District V	314	387
			District VI	173	81
			District VII	162	552
			District VIII	248	430
			District IX	332	195
			District X	185	383
			District XI	193	358
			District XII	175	367
			State mean	220	419
<u>Delaware</u> (Agr. Exp. Sta.)			<u>Kansas</u> (Ins. Sur.)		
Kent	187	39	North Central	2	20
New Castle	219	44	Northeast	69	267
Sussex	323	186	East Central	22	172
State mean	243	90	Central	-	18
			State mean	31	119
			State mean comparable districts (3)	31	153
<u>Illinois</u> (Natural History Survey, Ext. Ser.)			<u>Maryland</u> (Agr. Exp. Sta., Ins. Sur.)		
Northwest	208	80	Allegany	13	31
Northeast	141	70	Anne Arundel	24	32
West	184	143	Baltimore	71	39
Central	228	66	Calvert	37	27
East	147	36	Caroline	151	49
West Southwest	132	129	Carroll	123	84
East Southeast	80	12			
Southwest	26	22			
Southeast	1	1			
State mean	127	62			
<u>Indiana</u> (Ex. Sta., Ex. Ser.)					
1956	1957				
Northwest	NNW 149	95			
North Central	NNC 100	41			
Northeast	NNE 71	41			
Northwest Central	NW 130	8			
Northeast Central	NC 178	10			
Central	NE 114	18			
Southwest Central	SW 72	10			

Table 2 -- (Cont'd)

		:Average number :		:Average number	
		:of borers per :		:of borers per	
		:100 plants :		:100 plants	
		:1956 1957 :		:1956 1957	
<u>Maryland (cont'd)</u>				<u>Nebraska</u>	
				(Ag. Exp. Sta., Ex. Ser., Ins. Sur.)	
Cecil	49	30		Northeast	255 475
Charles	50	10		East Central	158 319
Dorchester	166	105		Central	187 -
Frederick	43	77		Southeast	50 135
Garrett	11	4		South Central	83 159
Harford	64	45		Platte Valley	- 208
Howard	51	21		Loup Valley	- 277
Kent	41	43		Panhandle	- 37
Montgomery	40	34		State mean	147 230
Price Georges	31	11		Average comp. dist.	136 272
Queen Annes	72	20		(4)	
St. Marys	95	94		<u>New Hampshire</u>	
Somerset	94	150		(State Dept. of Agr.)	
Talbot	59	95		Belknap	16 4
Washington	106	43		Carroll	59 8
Wicomico	155	90		Cheshire	6 7
Worcester	302	243		Grafton	13 7
State mean	80	60		Hillsboro	7 9
				Merrimack	39 6
<u>Michigan</u>				Rockingham	15 16
(Ex. Ser.)				Strafford	32 7
Southwest	51	8		Sullivan	15 6
Northeast	18	9		State mean	22 8
Southeast	32	9		<u>New Jersey</u>	
State mean	34	9		(Dept. of Ag. & College of Ag.)	
<u>Minnesota</u>				Burlington	609 81
(State Dept. of Agr.)				Camden	226 94
West Central	49	69		Cumberland	154 36
Central	33	48		Gloucester	374 53
East Central	30	19		Hunterdon	204 10
Southwest	95	208		Mercer	690 117
South Central	121	123		Middlesex	567 63
Southeast	26	40		Monmouth	597 408
State mean	59	83		Salem	127 41
				Somerset	695 151
<u>Missouri *</u>				Sussex	74 4
(Ext. Ser., Ins. Sur.)				Warren	67 8
1956 1957				State mean	365 89
NW Dist. 1	67	685		<u>New York</u>	
NE Dist. 2	46	580		(Ex. Ser.)	
WC Dist. 3	20	318		Dutchess	- 5
SE Dist. 4	226	372		Erie	- 20
Dist. 5		331		Monroe	12 33
Dist. 6		40			
Dist. 9		95			
State mean	90	346			

* Crop Reporting districts
1956 survey included Dist. 1,2,3,4,9

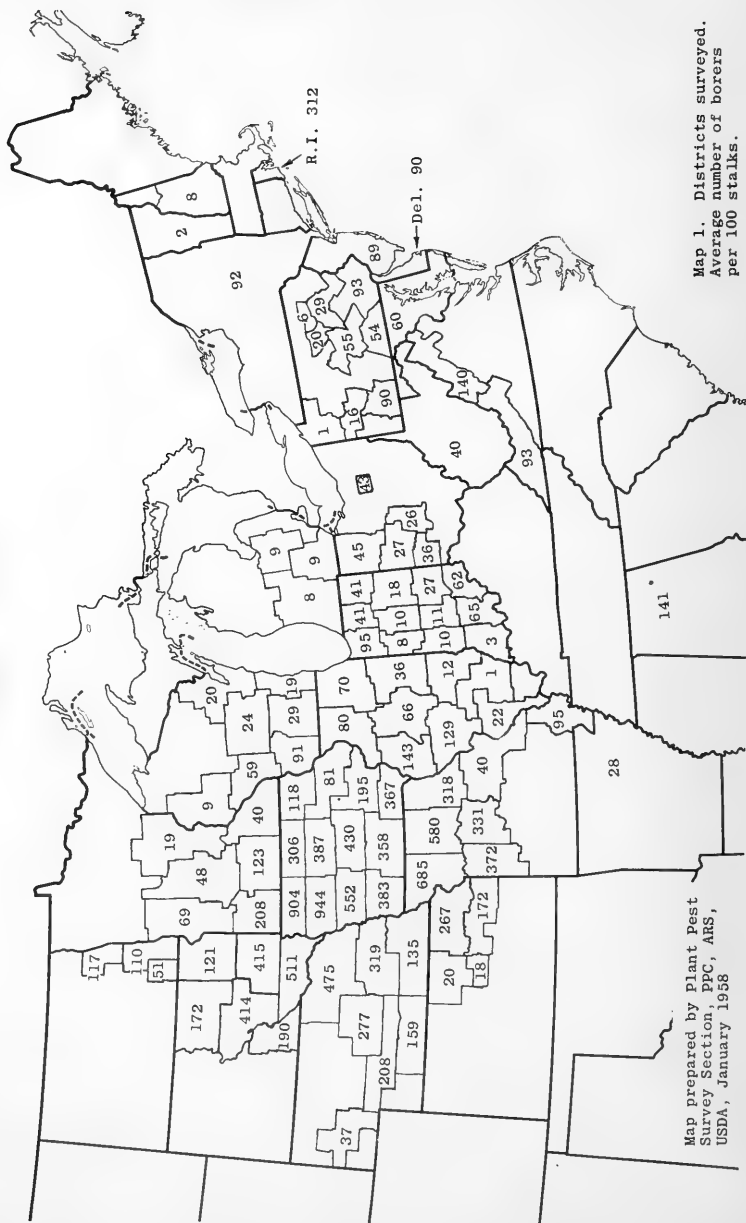
Table 2 -- (Cont'd)

State	:Average number: :of borers per :100 plants		:State	:Average number :of borers per :100 plants	
	:1956	:1957:		:1956	:1957
New York (cont'd)			Rhode Island (cont'd)		
Onondaga	34	3	Newport	335	
Ontario	1	-	Providence	100	
Orleans	11	2	Washington	355	
Steuben	60	-	State mean	335	312
Suffolk	1,089	550			
Ulster	-	30			
State mean	201	92	South Dakota		
State mean comparable counties (4)	286	147	(Ag. Ex. Sta., Ext. Ser.)		
North Dakota			North Central	48	172
(State Dept. of Agr.)			Northeast	44	121
District I	38	117	Central	12	414
District II	52	110	East Central	88	415
District III	60	51	South Central	36	190
District IV	-	-	Southeast	84	571
District V	29	-	State mean	52	313
State mean	44	93	Vermont		
Comp. dist. (3)	50	93	(State Dept. of Agr.)		
Ohio			Addison	2	2
(Ag. Ex. Sta., Ex. Ser.)			Bennington	34	5
Northwest	63	45	Caledonia	4	1
West Central	48	27	Chittenden	1	2
Central	50	26	Essex	3	0
Southwest	48	36	Franklin	7	0
Northeast	44	43	Grand Isle	2	4
State mean	51	35	Lamoille	6	0
Pennsylvania			Orange	3	2
(Dept. of Ag.)			Orleans	3	0
Northwest	41	1	Rutland	1	4
North	10	20	Washington	3	1
Northeast	2	6	Windham	4	0
West	31	16	Windsor	3	2
Central	41	55	State mean	5	2
East	150	29	Virginia		
Southwest	41	90	(Ins. Sur.)		
South	245	54	Northern Va.	197	140
Southeast	398	93	Southwestern Va.	146	93
State mean	106	40	State mean	171	116
Rhode Island			West Virginia		
(Agr. Exp. Sta.)			(Ex. Sta.)		
Bristol	267		Berkeley	District	15
Kent	622	State-	Braxton	Survey	27
		wide	Brooke		70
			Clay		8
			Greenbrier		38
			Hampshire		13

Table 2 -- (cont'd)

State	:Average number:		:State	:Average number	
	:of borers per :			:of borers per	
	:100 plants :			:100 plants	
	:1956	1957:		:1956	1957
<u>West Virginia (cont'd)</u>			<u>Wisconsin</u>		
			(State Dept. of Agr.)		
Hancock	District	23	Northwest	12	9
Hardy		24	North Central	2	-
Lewis	Survey	39	Northeast	15	20
Monongalia		36	West Central	25	59
Monroe		101	Central	17	24
Ohio		23	Southwest	56	91
Pleasants		4	South Central	31	29
Wirt		7	Southeast	20	19
Wood		8			
State mean	38	40	State mean	23	36
			Comparable districts		
			(7)	25	36

EUROPEAN CORN BORER ABUNDANCE FALL 1957

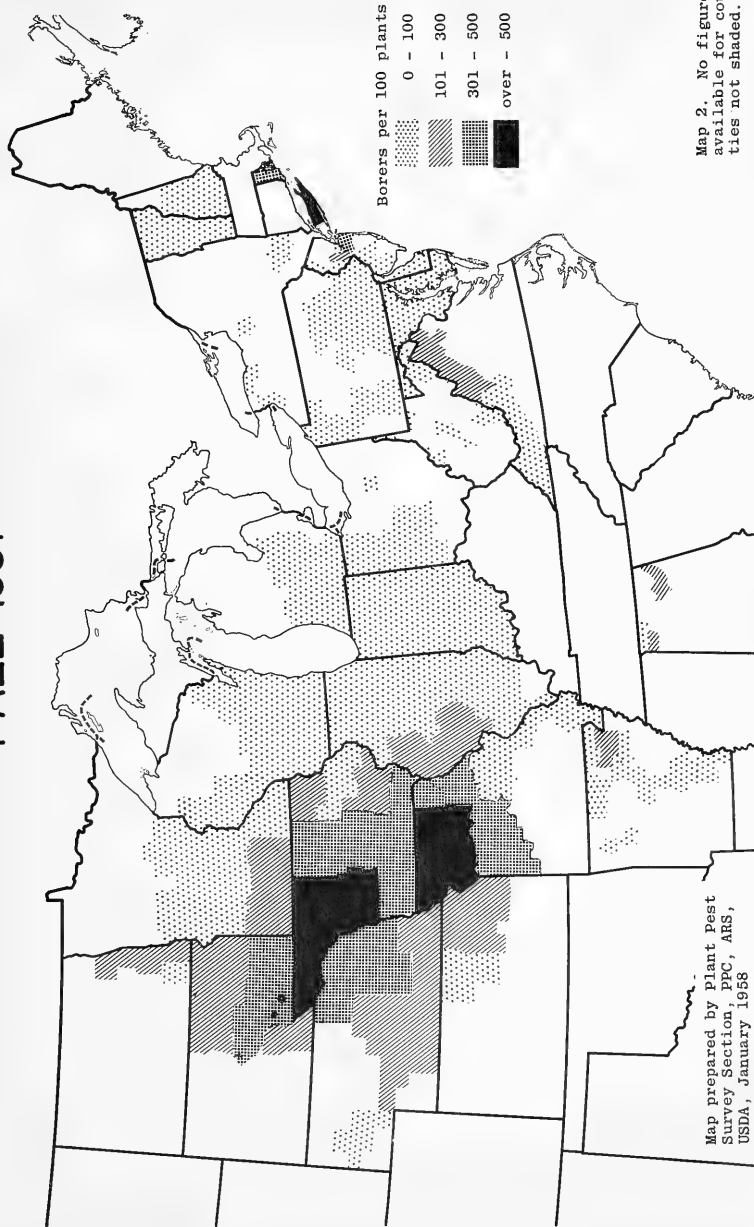


Map 1. Districts surveyed.
Average number of borers
per 100 stalks.

Map prepared by Plant Pest
Survey Section, PPC, ARS,
USDA, January 1958

EUROPEAN CORN BORER ABUNDANCE

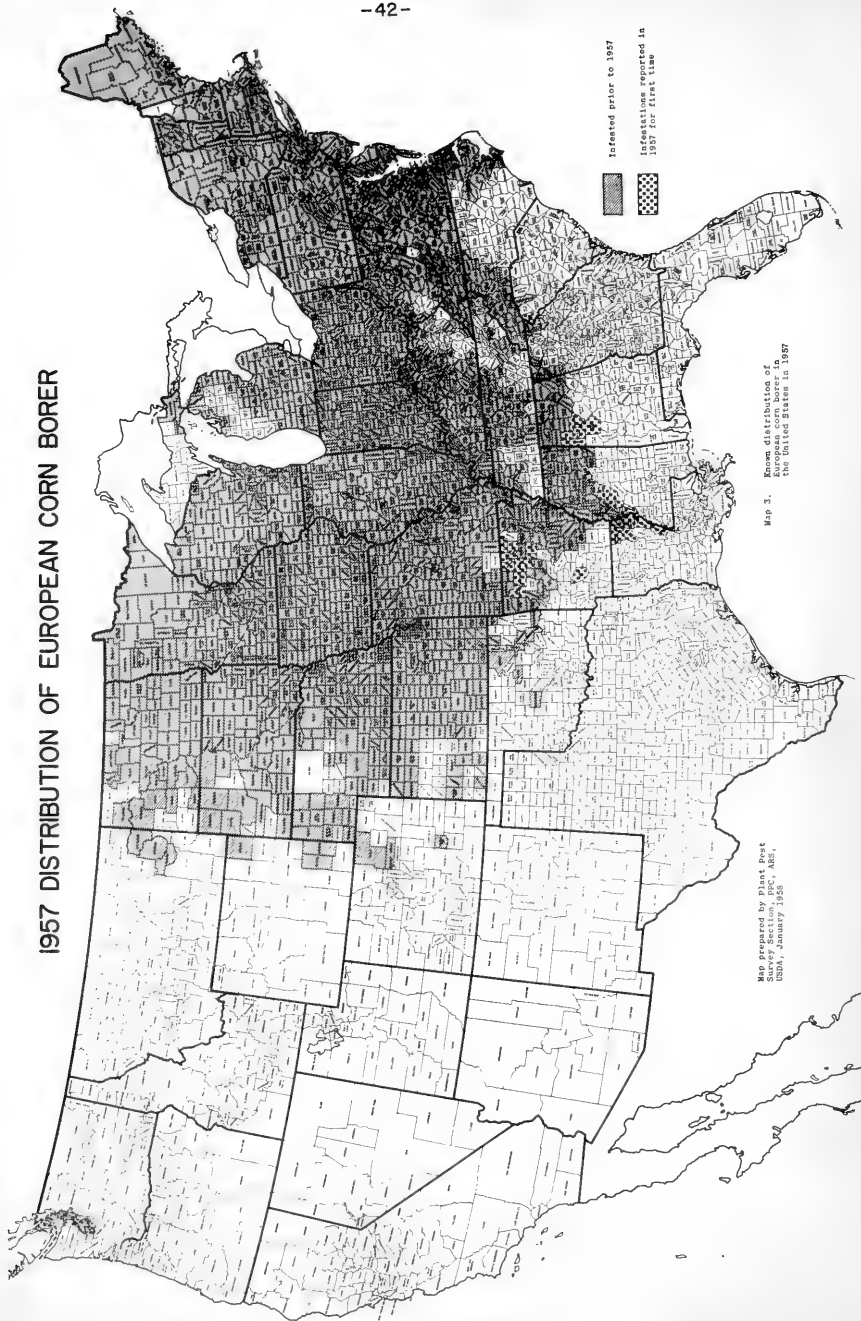
FALL 1957



Map 2. No figures available for counties not shaded.

Map prepared by Plant Pest Survey Section, PPC, ARS, USDA, January 1958

1957 DISTRIBUTION OF EUROPEAN CORN BORER



Infested prior to 1957
Infestations reported in
1957 for first time

Map 3. Known distribution of
the European Corn Borer in
the United States in 1957

Map prepared by Plant Pest
Survey Section, PPIC, ARS,
USDA, January 1958

SUMMARY OF INSECT CONDITIONS - 1957

LOUISIANA

Reported by A. D. Oliver

Highlights: The year was outstanding as far as establishment of economic insect infestations is concerned in Louisiana. The invasion of seven northeast parishes by EUROPEAN CORN BORER, the occurrence of A WHITE-FRINGED BEETLE (*Graphognathus perigrinus*) in one parish about 120 miles west of the Mississippi River, complete destruction of some corn fields by SOUTHERN GREEN STINK BUG, further eastward movement of the SOUTHWESTERN CORN BORER, serious damage to heading rice by A CONE-HEADED GRASSHOPPER (*Neoconocephala* sp.) in many fields in southwest Louisiana, severe infestations of the SOUTHERN ARMYWORM in sweetpotato and tomato fields and a serious outbreak of A SOD WEBWORM (*Pachyzancla phaeopteralis*) in the southeastern area of the State mark a few of the ever-increasing problems that occurred in Louisiana in 1957 and which will require more attention in the future.

Cereal and Forage Insects: ARMYWORM (*Pseudaletia unipuncta*) was a threat to small grains in the upper Mississippi delta, the Ouachita Valley and the Red River Valley in April and May. The earliest infestations were found in the Baton Rouge area during the week of February 15. Light populations (non-damaging) were observed in several southeastern parishes during the week of February 21. These light infestations remained throughout April, but never built up to damaging numbers. During the first week of April, light infestations were found in small grains in 12 parishes. During the last week of April heavy populations were found in oats in several areas. These infestations, from 1 to 15 per square foot, were present primarily in very dense and wind blown stands. About May 3, populations were threatening oats, wheat and rye grasses in several parishes in the Red River, Ouachita and Mississippi Valleys. By May 10 heavy populations of A PARASITE (*Apanteles* sp.) had built up and it is believed that these parasites and a disease were the principal controlling factors of armyworm last season. Few if any controls were needed. By late May, most grains were near maturity and armyworm threats had been reduced or suppressed. The greatest infestations in the State were about 30 larvae per square foot in northeast Louisiana. FALL ARMYWORM (*Laphygma frugiperda*) populations were statewide and heavy on several crops during late spring, summer and early fall. Late corn was damaged most severely with a large percent of the fields being heavily infested. The first infestations observed were in corn in St. Mary Parish during the first week of June. By June 21 damaging infestations were found on corn and grasses in wide areas. By July 4 infestations were statewide on corn, rice, alfalfa and other forage crops. This was the second major brood. These infestations remained throughout the State until late August. At this time late corn and alfalfa were the principal hosts. Infestations were reduced markedly by October 1. SOUTHERN GREEN STINK BUG (*Nezara viridula*) infestations were very troublesome in several corn fields, particularly in the Ouachita Valley, during late spring and early summer. A few fields were completely destroyed and required replanting. EUROPEAN CORN BORER (*Pyrausta nubilalis*) was found in seven northeastern parishes this year during late summer. Infestations observed were generally very light and in old corn. Larvae were found in corn at Ferriday, Concordia Parish; St. Joseph, Tensas Parish; Mound, Madison Parish; Lake Providence, East Carroll Parish; Rayville, Richland Parish; Oak Grove, West Carroll Parish and Mer Rouge, Morehouse Parish. Extensive surveys were made in Catahoula, Franklin, Ouachita and Lincoln Parishes but no larvae were found. This insect presents, potentially, a very serious problem. A WHITE-FRINGED BEETLE (*Graphognathus perigrinus*) was found infesting white clover at Crowley, Louisiana in Acadia Parish during early summer. This is the first infestation known to occur west of the Mississippi River in Louisiana. SPOTTED ALFALFA APHID (*Therioaphis maculata*) infestations were generally light in alfalfa. There was no instance where infestations were as severe as in 1956. CORN EARWORM (*Heliothis zea*) infestations were general and

widespread in corn, many fields having up to 75 percent of the ears infested. During September and October, infestations were widespread on alfalfa. TARNISHED PLANT BUG (Lygus lineolaris) infestations were very heavy on crimson clover in the hill section of north Louisiana in the spring and early summer with 10 per sweep being very common during the bloom stages. Populations of 100-600 per 100 sweeps of alfalfa was common throughout the Red River Valley also. THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) infestations were sporadic in alfalfa with the most severe infestations in alfalfa grown for seed. Tremendous populations of PEA APHID (Macrosiphum pisi) were present in vetch, burclover and alfalfa over the State; but damage was barely noticeable. GARDEN WEBWORM (Loxostege similalis) infestations were very heavy in alfalfa during the summer in the Red River Valley and northeastern sections where alfalfa is grown. Some alfalfa grown for seed received control. BEEET ARMYWORM (Laphygma exigua) populations were moderately heavy in alfalfa, some fields receiving control. Several unidentified species of LOOPERS (Noctuidae) were very numerous in alfalfa throughout the greater part of the summer. Partial defoliation was very noticeable in many fields, especially in the Red River Valley. SWEETCLOVER APHID (Myzocallidium riehmii) were taken from sweetclover in East Baton Rouge and St. John the Baptist Parishes in early spring. This is the first record in the State. Only light populations of GREENBUG (Toxoptera graminum) were found on small grains in early spring. A very heavy mixed population of GREENBUG and APPLE GRAIN APHID (Rhopalosiphum fitchii) infested several fields of small grain in East Carroll Parish during April. Parasitic control eliminated these buildups. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) infestations occurred in Washington Parish and some sections of northeast Louisiana, but were of little importance. SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) infestations in corn were severe particularly in upper Caddo Parish in the summer. Some fields had 80-90 percent infestations. Infestations occurred eastward from the Texas line through Caddo, Bossier, Webster and Claiborne Parishes and southward to U.S. Highway no. 79. SORGHUM WEBWORM (Celama sorghiella) infestations were present in all fields of grain sorghum examined in Tensas, Franklin and Caldwell Parishes. SORGHUM MIDGE (Contarinia sorghicola) damage to grain sorghum was very apparent in most fields. CLOVER SEED CHALCID (Bruchophagus gibbus) was very plentiful in alfalfa seed fields in Bossier Parish. Some fields received control. SUGARCANE BORER (Diatraea saccharalis) heavily infested several fields of rice in Avoyelles Parish. Some fields had 75-90 percent of the heads deformed. Many light infestations were observed in Acadia, St. Landry, Lafayette and Jefferson Davis Parishes. Growing corn in the Crowley - Jennings area is almost impossible due to the attacks by sugarcane borer. RICE STINK BUG (Oebalus pugnax) populations were about average with 40-60 per 100 sweeps being the highest encountered. A CONE-HEADED GRASSHOPPER (Neoconocephala sp.) caused considerable damage to young rice heads in several fields in southwest Louisiana. A MITE (Petrobia apicalis) was generally heavy and widespread over the southern two-thirds of the state in vetch, white and crimson clover in early spring. Damage was very noticeable but went without remedy. VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) populations reached damaging numbers as far north as Waterproof, Tensas Parish, on soybeans. Some fields received control where complete defoliation would have occurred. GRAPE COLASPIS (Colaspis sp.), and BANDED CUCUMBER BEETLE (Diabrotica balteata) caused considerable defoliation of soybeans in Ascension, Assumption, Iberville and Lafourche Parishes in June and July. A SOD WEBWORM (Pachyzancla phaeopteralis) was a severe problem on lawns and sods in southeastern areas. Many sods were completely defoliated. VARIEGATED CUTWORM (Peridroma margaritosa) was numerous during spring in vetch, clover, alfalfa and oats in several parishes. CORN LEAF APHID (Rhopalosiphum maidis) was plentiful on sorghum and late corn during August and September but did very little, if any, damage. SUGARCANE BORER (Diatraea saccharalis) was the most severe pest of sugarcane, the first generation alone killing about 432 stalks per acre, as an average, over the Cane Belt. A few localized infestations of SUGARCANE BEETLE (Euethola rugiceps) occurred with some damage to stands in the spring.

Truck Crop Insects: CABBAGE LOOPER (*Trichoplusia ni*) remains the most damaging pest of cole crops in Louisiana. CROSS-STRIPED CABBAGEWORM (*Evergestis rimosalis*), DIAMONDBACK MOTH (*Plutella maculipennis*), and IMPORTED CABBAGEWORM (*Pieris rapae*) also infested cole crops in the southern part of the State to the extent of reducing yield and quality. A STINK BUG (*Euschistus bifibulus*) was a problem on tomatoes in late spring and early summer over most of the southeastern one-quarter of the State. SOUTHERN ARMYWORM was numerous and injurious on tomato plants in June; the infestations covering several southeastern parishes. Southern armyworm infested sweetpotato fields to the extent that control was necessary as far north as Waterproof, Tensas Parish. Many fields without treatment were completely defoliated. VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) was a problem on seedling transplants of tomatoes and peppers in Tangipahoa Parish. Some fields were replanted three and four times before a stand could be obtained. YELLOW-MARGINED LEAF BEETLE (*Microtheba ochroloma*) was found infesting mustard and turnip greens in St. John the Baptist Parish in May, this being the second known infestation in Louisiana, which covered several acres. A NITIDULID BEETLE (*Lobiopa insularis*) attacked strawberries in Tangipahoa Parish in the spring. Growers had terminated harvest when it became numerous enough to cause concern to the cold packing industry. The loss was not as great as in 1956. BLACK CUTWORM (*Agrotis ypsilon*) was damaging to strawberry plants in most fields in Tangipahoa Parish in April and May. No measurable damage could be determined. SPIDER MITES (*Tetranychus* spp.) and STRAWBERRY ROOT APHID (*Aphis forbesi*) were numerous throughout the strawberry-growing region of Louisiana. Damage to strawberry foliage was light and generally insignificant. STRAWBERRY LEAFROLLER (*Ancyliis comptana fragariae*) was numerous in plant beds in June and July and causing some concern. Some infestations were heavy enough to defoliate 25 percent of the plants.

Cotton Insects: BOLL WEEVIL (*Anthonomus grandis*) was the most important cotton pest in Louisiana again in 1957. Infestations were erratic. Some areas got by with little control, particularly in the upper Red River Valley. In the Mississippi and Ouachita Valleys, the Macon Ridge and lower Red River Valley, infestations generally required control. Good control was obtained where the practices were conducted according to recommendations. BOLLWORM (*Heliothis zea*) infestations were about normal over the State. There were some complaints concerning poor control. Control was obtained where recommended treatments were initiated properly. COTTON LEAFWORM (*Alabama argillacea*) infestations began early, particularly in southwest Louisiana. The first moths were seen about June 20 in the Baton Rouge area. Many fields in the path of Hurricane Audrey were completely defoliated early because farmers did not control cotton leafworm. SPIDER MITES (*Tetranychus* sp.) and COTTON APHID (*Aphis gossypii*) were of little importance. A few isolated infestations occurred but were not serious. THRIPS (*Frankliniella fusca* et al.) were numerous on seedling cotton but damage was not serious. CABBAGE LOOPER infestations were heavier than at any time in past years in several southwestern parishes. Control practices were not satisfactory.

Forest, Ornamental and Shade Tree Insects: An infestation of SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) became established in an area of pine timber near Pride, East Baton Rouge Parish, in the spring. Damage was considerable in the small area infested. NANTUCKET PINE MOTH (*Rhyacionia frustrana*) infestations were many and widespread. There were heavy infestations in Claiborne, Acadia, Webster, Lincoln, Tangipahoa and Livingston Parishes. PINE NEEDLE MINER (*Exoteleia pinifoliella*) infested many pine trees in areas of southwest and west central Louisiana in June and July, causing severe needle discoloration. PALES WEEVIL (*Hylobius pales*) infested and damaged some pine seedling in areas of Claiborne Parish. One severe infestation of A WHITE GRUB (*Phyllophaga* sp.) became established in a pine seedling nursery at Homer, Claiborne Parish, in July. Control was obtained after the loss of many seedlings. WALNUT CATERPILLAR (*Datana integerrima*) infestations caused severe defoliation of pecan over a large portion of south Louisiana. Complete defoliation of some trees was common in many areas during the summer. FALL WEBWORM (*Hyphantria cunea*) infestations were statewide on pecan, persimmon, willow, and wild cherry throughout most of

the summer and early fall. They were not as severe as in 1956. PINE COLASPIS (Colaspis pini) was a problem in many pines in Livingston and East Baton Rouge parishes during the summer. Shade tree pines were apparently infested worst.

Beneficial Insects: A HYMENOPTEROUS PARASITE (Apanteles militaris) was very numerous in small grain fields infested by armyworms in May and early June. It is believed that these parasites are responsible for the rapid reduction and suppression of many armyworm infestations in Ouachita, East Carroll, West Carroll, Tensas, Madison and Richland Parishes. A DAMSEL BUG (Nabis sp.) was the most numerous predator in alfalfa fields in the Red River Valley. Other species of predators very common in alfalfa fields were SYRPHID FLY larvae, CONVERGENT LADY BEETLE (Hippodamia convergens), LACEWINGS (Chrysopa spp.), A BIG-EYED BUG (Georcoris sp.), A BEETLE (Collops balteata) and GROUND BEETLES (Calosoma spp.). A GREGARIOUS PARASITE (Apanteles sp.) was a very efficient factor in reducing cabbage looper populations in cotton fields in several southwestern parishes during the summer. GROUND BEETLES were helpful in destroying larvae and pupae of the southern armyworm and armyworm.

Stored-Grain Insects: RICE WEEVIL (Sitophilus oryza) was the most important pest of stored corn in the State. Corn in all areas was infested, the greatest damage occurring in north central, southeastern and southwestern areas. Some corn was heavily infested when harvested. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was abundant in many corn cribs over the State. Several species of bran beetles were also numerous. Very little control was attempted in any area.

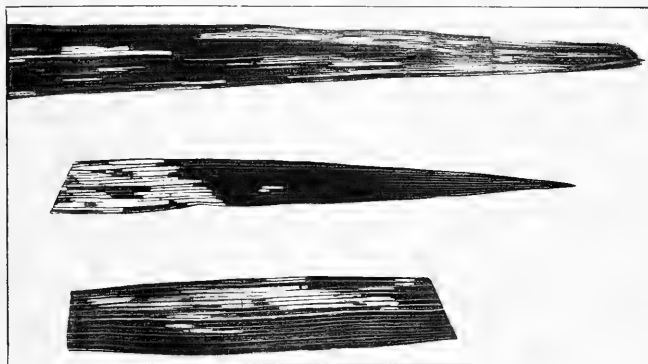
Insects Affecting Man and Animals: MOSQUITOES (Aedes spp., Psorophora spp., Culex spp. et al.) were very abundant in most sections of Louisiana throughout the warm season. In one section of Ouachita Parish, Psorophora sp. were so severe in June that field workers could hardly work. In Plaquemine Parish SALT-MARSH MOSQUITO (Aedes sollicitans) was a very serious handicap to field workers throughout the summer. This species was also abundant and troublesome to workers over the remainder of southern Louisiana. HORN FLY (Siphona irritans) was numerous on cattle over most of the State throughout the summer and early fall. HORSE FLIES (Tabanus spp. et al.) were also numerous about cattle in the summer and early fall. Woods cattle, particularly, suffered severely from horse fly attacks. HOUSE FLY (Musca domestica) continues to be a problem around chicken houses, dog pens, barns and milk sheds. A few SCREW-WORM (Callitroga hominivorax) infestations occurred in Bossier, Acadia and Rapides Parishes.

Miscellaneous Insects: A DAMP-WOOD TERMITE (Zootermopsis sp.) was found infesting the frame work of a house in Livingston Parish in September. This termite was imported with western red cedar from the Pacific Northwest. Eradication was attempted, the outcome is pending. IMPORTED FIRE ANT (Solenopsis saevissima richteri) infestations are present in about 40 parishes. The initial eradication program has begun.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

A LEAF BEETLE (Lema melanopa L.)

Economic Importance: This leaf beetle has been a serious pest of cereal crops in certain areas of Europe for many years. Damage is caused by both the adult and the larva. In Russia losses from infestations have been estimated to range from 25 to 50 percent of the crop. Serious damage occurred in Hungary in 1891 with losses estimated at between 1,000,000 and 1,250,000 pounds sterling. Attacks were so severe in the spring of 1931 in some localities in Rumania that the crop had to be plowed under. In 1938, the wheat crop in a district in Galicia, Spain, was almost totally destroyed. Losses on cereals in Spain in 1939 were estimated at 600,000 pesetas and at intervals the crop is almost totally destroyed in some areas of that country. Late varieties of wheat suffer most.



Oat Leaves Showing Typical
Injury by Larvae of Lema melanopa

Distribution: Occurs throughout most of Europe, including England and Wales in Britain, and extending into Siberia in USSR. Also recorded in Morocco in North Africa.

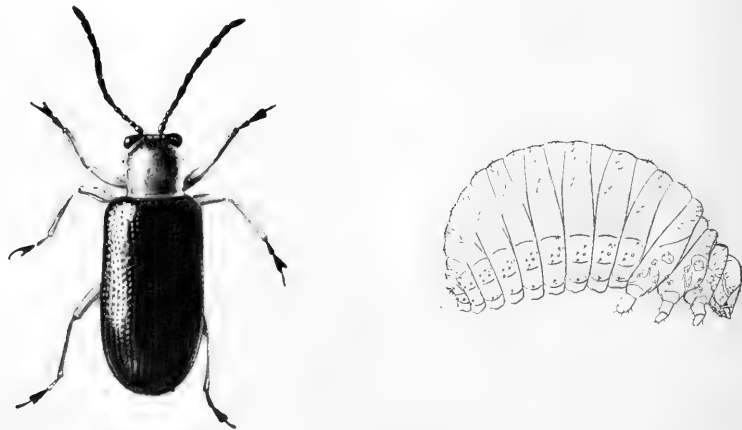


General Distribution of Lema melanopa

Hosts: Feeds on leaves of all cereals and grasses with barley, oats and wheat being the most important cultivated crops.

Life History and Habits: There is one generation a year in Italy. Life history is as follows: The overwintered adults mate in spring and oviposit for about 45 to 60 days on leaves of cereals. The females lay from 100 to 150 eggs each with up to 4 on a single leaf. The larvae hatch in from 7 to 15 days and feed on the leaves, migrating from one to another. They pass through 4 instars and become full-fed in 12 to 20 days and are present generally from late April to mid-June. Pupation occurs in earthen cells at depths of $\frac{1}{2}$ to 2 inches with adults emerging 20 to 25 days later. Adults feed on grasses from July to autumn, then hibernate under trash or in crevices, rarely in soil, until mid-March. In England the life cycle occupies about 46 days and of approximately the same duration in USSR. Both adults and larvae feed on cereals, the chief damage being done by the adults in the spring when food is scarce. Larval feeding on the leaves further increases the damage already caused by the adults, however.

Description: The adult is approximately 4 to 4.5 mm. in length, males being slightly smaller and narrower than the females. The head black; first two antennal segments rather globular. Thorax light reddish-brown, glossy; elytra metallic-blue with parallel perpendicular lines of punctures. Legs yellow, with tarsi and tips of tibiae black. The egg is cylindrical, rounded, 1 mm. in length, darkening to almost black before hatching. The larva is of form of Colorado potato beetle; head, spiracles and legs somewhat heavily chitinized, dark brown to black; remainder soft, more or less wrinkled, dirty to bright yellow, bearing numbers of stiff curved hairs which in the dorsal regions point forwards and on the sides upwards; nine spiracles; anus dorsal and directed forwards. Color usually obscured by a covering of excrement. Length 5 to 6 mm. The pupa is enveloped in thin transparent membrane, bright yellow, darkening rapidly until adult color is attained. Length 4 to 4.5 mm.



Adult and Larva of Lema melanopa (greatly enlarged)

Figures (except map): Larva from Venturi, F. 1942. Redia 28:11-88. Adult and damage from Hodson, W. E. H. 1929. Bul. Ent. Res. 20(1):5-14.



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JANUARY 24, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

MEADOW SPITTLEBUG potential for 1958 low in New Jersey. (p. 53).

CITRUS INSECT and MITE outlook at Lake Alfred, Florida. (p. 53).

Some highlights of IMPORTED FIRE ANT eradication. (p. 56).

New infestations of KHAPRA BEETLE in Arizona, California and Mexico. (p. 55).

SUMMARY OF INSECT CONDITIONS - 1957 - Pennsylvania (p. 57), West Virginia. (p. 59).

Review of ARMYWORM conditions 1955-57. (p. 62).

Extent of SCREW-WORM infestation in Southeast, 1957. (p. 69).

Reports in this issue are for the week ending January 17 unless otherwise designated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-JANUARY TO MID-FEBRUARY 1958

The Weather Bureau's 30-day outlook for the period mid-January to mid-February calls for temperatures to average below seasonal normals over the eastern half of the nation, except for near normal in New England. Greatest departures are indicated in states bordering the Gulf of Mexico. Over the western half of the country near to above normal temperatures are expected to prevail. Precipitation is predicted to exceed normal in Gulf Coast States and along the Atlantic seaboard with considerable snow from Virginia northward. Subnormal amounts are indicated over the northern half of the country from the Great Lakes westward to the Pacific Northwest. 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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING JANUARY 20

A storm in the East the first part of the week and another which moved across the western two-thirds of the country during the weekend accounted for most of the week's precipitation as unusually cold weather persisted in Florida for the third straight week and unseasonably mild temperatures continued in the northern Great Plains for a period of more than 2 months. The storm, over Louisiana and Mississippi at the end of the previous week moved northeastward and combined with another center of low pressure over the Carolinas on the 14th. The new storm continued northeastward to the lower coast of New England where it lingered, while controlling the weather over the Northeast, through the 19th. This storm activity was responsible for moderate to heavy precipitation in the Ohio and lower Mississippi Valleys and Seaboard States, except in southern Florida where totals were less than 0.25 inch. Elsewhere in the area, totals generally exceeded an inch. Snow fell over the Appalachians and along their western slopes as far south as Kentucky and from New Jersey northward. The second storm brought light to moderate precipitation to the Pacific Northwest on the 17th and the Great Plains on the 18th and 19th. One to 5 inches of snow furnished beneficial moisture in the western portions of the central and lower Great Plains where some sections had received no measurable precipitation since the middle of November. Heavy rains up to 3 inches or more fell in the lower Ohio and Mississippi Valleys on the 20th and rain or snow was still falling over the central Mississippi Drainage system on the 21st. A snow cover of 1 to 5 inches now extends from eastern Colorado, northeastern New Mexico and the panhandle sections of Texas and Oklahoma northeastward to the Great Lakes, but only traces cover most of the northern Great Plains where prolonged unseasonably mild temperatures have resulted in the thinnest ice cover on lakes and streams in many years--only 7 inches were measured in the Missouri River in North Dakota.

Subfreezing temperatures which extended into Florida on the 19th caused little or no damage to citrus but did damage some tender crops in the Everglades, and the cold retarded growth of other crops, and cold, wet soil was rotting seeds in the ground. Temperatures fell to subzero levels over much of interior New York State and northern New England on the 20th. Burlington, Vt., recorded -13° and several points in the Adirondacks reported -15° to -20°. In north central areas, subzero minima were limited to northern Minnesota and Upper Michigan. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*) - KANSAS - None found in any of the wheat fields examined, Riley, Geary, Morris and Dickinson Counties. (Matthew).

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - NEW JERSEY - The potential for damage to clover and alfalfa in 1958 is low on a statewide basis, averaging 1.1 egg masses per 15 red clover plants per field. However, egg populations in Hunterdon County were higher than in 1956, with an average of 5.6 egg masses per 15 red clover plants per field. (Ins.-Dis. Newsltr., Jan. 7).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - KANSAS - None found nor evidence of feeding observed in any fields examined, Riley, Geary, Morris and Dickinson Counties. (Matthew).

CHINCH BUG (*Blissus leucopterus*) - KANSAS - The fall survey in 44 counties showed 6 counties to be non-economic, with 0-238 bugs per square foot; 6 counties light, 282-483 bugs per square foot; 12 counties moderate, with 523-972 per square foot; 9 counties severe, ranging from 1,028 to 1,651 bugs per square foot; and 11 counties very severe, with 2,066-5,345 per square foot. (Matthew). OKLAHOMA - Completion of the survey in 3 additional northwestern counties showed the average number of bugs in hibernation per square foot of bunch grass to be 254 in Blaine County, 4.8 in Woodward County and 0 in Harper County. (Fed.-State Chinch Bug Survey).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Grubs found for first time west side of Canandaigua. Complete survey of area will be made in the spring. (PPC, East. Reg., Dec. Rept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - KANSAS - None found in any alfalfa field examined, Riley, Geary, Morris and Dickinson Counties. (Matthew). OKLAHOMA - Rare to occasional in alfalfa in the panhandle counties; occasional to light in other northwestern counties. One field in Ellis County showed a definite increase in numbers since last fall. (Coppock). Population static in the Stillwater area. (Bieberdorf).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - The Division recently released a map which shows that survey was conducted on over 740,000 acres of soybean lands in 31 States during the past year. As of December 31, the pest had been found on 371 properties involving 15,626 acres in 14 counties in 6 States. (PPC). ARKANSAS - Infestations were found on 6 farms involving 116 acres in Mississippi County. These fields were immediately adjoining a previously known infested farm and were found as a result of delimiting inspections. (So. Reg., Dec. Rept.).

PEA LEAF WEEVIL (*Sitona lineata*) - OREGON - On red clover, 1 adult per 5 sweeps, Forest Grove, Washington County, Jan. 2. Feeding-notches and mating pairs on Austrian winter peas at Sheridan, Yamhill County, Jan. 13. Feeding damage evident and numerous adults, including mating pairs, observed in pea fields at Sheridan, Jan. 15., noon temperature was 50°F. This activity conflicts with previous records which indicate winter hibernation and genuine dormant state. (Prescott, Gray).

FRUIT INSECTS

QUARTERLY CITRUS INSECT AND MITE OUTLOOK, LAKE ALFRED, FLORIDA: Infestations of PURPLE SCALE will increase and be above average this spring. FLORIDA RED SCALE will remain low during the coming quarter. The present outlook is that PURPLE SCALE infestations will be high this winter and spring, but lower than indicated if rainfall is abundant. CITRUS RUST MITE infestations will decline, but will be considerably above average through the quarter. TEXAS CITRUS MITE will be more abundant than in previous years, for the same period, and

SIX-SPOTTED MITES will be abundant and cause serious injury to new growth in many groves. (Pratt).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - A very limited number of inspections were made during December. Inspection of 33 trees on 4 previously known infested properties in Laredo, Webb County, Texas, showed no evidence of the presence of this pest. (So. Reg., Dec. Rept.). MEXICO - Light to medium infestations were found on 566 trees on 25 properties in Tamaulipas and Nuevo Leon in December. Newly infested groves were immediately sprayed. Infestations in the biological control zone of northeastern area continue to be generally controlled by parasites. (Mex. Reg., Dec. Rept.).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Continuing survey in Sacramento shows 7 new infested blocks, representing first established live find since 1938 in Sacramento County. (Cal. Coop. Rept.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Trapping continued at Ensenada, Tecate, Tijuana and Mexicali in Baja California, and at San Luis, Sonora. A total of 4,839 trap inspections in 1,318 traps were made on 566 properties. Results were negative. (PPC, Mex. Reg., Dec. Rept.). TEXAS - The first fly of the season in the lower Rio Grande Valley was trapped in December. The date of this catch is about average for past seasons but is about a month later than the first catch for the 1956 season. No additional flies had been trapped by December 31. (So. Reg., Dec. Rept.). Trapping in CALIFORNIA and ARIZONA during December was negative. (PPC, West Reg.).

TRUCK CROP INSECTS

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) - CALIFORNIA - Light infestations reported from coastal Santa Barbara County; light to medium infestations from Watsonville, Santa Cruz County. (Cal. Coop. Rept.).

BEEF LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Infestation found on 200,000 acres of desert land west of cultivated acreages, threatening susceptible crops. Tentative control program developed for 25,000 acres. (Cal. Coop. Rept.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - LOUISIANA - Tensas Parish was found infested for the first time with the discovery of weevils on 4 properties in St. Joseph. The weevils were found on unharvested sweetpotatoes left in the fields because of severe damage. (So. Reg., Dec. Rept.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Gin trash sampling operations were concluded on December 6 for the season. Boll examinations and lint cleaner inspections were continued. No pink bollworm was found in collections submitted from Santa Cruz and Pima Counties. NEW MEXICO - In Chaves and Eddy Counties, 21 lint cleaner inspections were made with 29 and 30 pink bollworms found in each county respectively. (PPC, West. Reg., Dec. Rept.). MEXICO - In eastern area, 1,810 bushels of gin trash were inspected in Baja California and 30 bushels in San Luis, Sonora, with negative results. In Hermosillo, Sonora area, 18 lint cleaner inspections were made at 6 gins with negative results. In Culiacan, Sinaloa, 90 bushels of gin trash were inspected with negative results. (PPC, Mex. Reg., Dec. Rept.). OKLAHOMA - Inspections of 18 lint cleaner and 21 gin trash stands in 11 southern counties recovered 26 larvae in Kiowa, Tillman, Cotton, Love and Bryan Counties (all border the Red River), Dec. 30, 1957, to Jan. 14, 1958. (Fed.-State PBW Comm.). ARKANSAS - The second pink bollworm of the season was found in trash from the Emmett gin, involving two farms, one in Hempstead County and one in Nevada County. The field involved was not pinpointed. This is a newly infested area and is several miles from any known infested area.

FLORIDA - The Lake Alfred Laboratory identified 7 pink bollworm larvae in the collection from Plantation Key. MISSISSIPPI - Approximately 2,500 bushels of gin trash were inspected, mostly in the delta counties, with negative results. (PPC, So. Reg.)

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

GYPSY MOTH (*Porthetria dispar*) - Scouting of nurseries completed on Long Island NEW YORK during December. One egg mass found in peripheral area of nursery in vicinity of Rockville Centre, Nassau County. Infestation about 5 miles west of 1957 sprayed area. Intensive scouting in vicinity of 1957 positive trap sites in NEW JERSEY and PENNSYLVANIA negative. (PPC, East. Reg., Dec. Rept.).

A LEAF MINER - OREGON - Has infested 100 percent of a large nursery planting of salal at Salem, Marion and Polk Counties. (Bock).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - TEXAS - Caused defoliation of natural loblolly reproduction in eastern Panola County and a 40-acre pine plantation in San Augustine County. (Young).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - Found in widely scattered trees in western Hardin County. Many of trees appear to be recently attacked. (Young).

A TIP MOTH - TEXAS - Infestations continue to be extensive throughout east Texas. (Young).

TURPENTINE BEETLES (*Dendroctonus* spp.) - TEXAS - Heavy concentrations reported in stands cut during past year, Sabine, San Augustine and Shelby Counties. (Young).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.) - UTAH - Appearing in backs of cattle, Box Elder and Utah Counties. (Knowlton). OKLAHOMA - Recent counts at Fort Reno Station averaged 8 grubs per animal for 32 weaning calves, 10.7 for 21 yearling heifers, and 6.7 for 18 head of 2 year old cows. (Allison).

CATTLE LICE - TEXAS - Reported light on livestock, Hall County. (Hooser). UTAH - Seriously infesting untreated herds in several counties. (Knowlton).

HORSE BOT FLY (*Gasterophilus* spp.) - UTAH - Larvae infesting horses in northern areas. (Knowlton).

STORED-PRODUCT INSECTS

FLOUR BEETLES - UTAH - A recent problem in many homes, Salt Lake County. (Knowlton).

KHAPRA BEETLE (*Trogoderma granarium*) - ARIZONA - Six infestations, 2 each at Buckeye and Phoenix in Maricopa County, and one each at Parker and Vicksburg in Yuma County, were reported during December. CALIFORNIA - Three new infestations, two in Kern County and one in Imperial County, were reported during December. No infestations were found in NEW MEXICO. Inspections in COLORADO, IDAHO, OREGON and WASHINGTON were negative. (PPC, West. Reg., Dec. Rept.). MEXICO - Three new properties were reported in December from Mexicali district. Volume to be treated involved 1,611,167 cubic feet. Inspections during December at Mexicali, Tecate, and Tijuana, Baja California and San Luis Rio Colorado, Hermosillo and Nogales, Sonora, totaled 66. (PPC, Mex. Reg.).

GRAIN PESTS - OREGON - Inspection of an elevator-feed mill at Monroe, Benton County, disclosed small numbers of the DEPRESSED FLOUR BEETLE (Palorus subdepressus), high populations of the CADELLE (Tenebroides mauritanicus) and the GRAIN MITE (Acarus siro) in association with predaceous mites (Tydeus interruptus). (Krantz).

MISCELLANEOUS INSECTS

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Invading a number of homes at Spanish Fork, Utah County. (Knowlton).

CLUSTER FLY (Pollenia rudis) - UTAH - Extremely abundant in public building at Spanish Fork. (Knowlton).

FIRE ANT (Solenopsis geminata) - TEXAS - Reported from Burlleson, Brazos, Brazoria, Waller, Montgomery, Harris, Robertson, Lavaca, Liberty, Bexar, Grimes, Wharton and Hidalgo Counties. (Turney).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - New county records during December included Calhoun, Lamar, Limestone and Talladega Counties, ALABAMA: Calhoun, Gulf and Marion Counties, FLORIDA: and Bienville Parish, LOUISIANA. Surveys were continued in most of the States in the Southern Region. In ALABAMA particular emphasis was placed on delimiting infestations in the periphery counties. Survey of Decatur County, GEORGIA, was completed, showing 107,133 acres infested, of which 22,240 acres have been treated by plane and 1,568 acres by ground equipment. The army reservation at Ft. Benning, Georgia, was effectively surveyed by the use of two helicopters furnished by the Army. In LOUISIANA, about 285,000 acres were surveyed in 29 parishes and about 6,052 acres treated in 16 parishes. Most of the larger nurseries in ant-infested areas of Louisiana have applied insecticides. The Atchafalaya River Levee Board treated 51 miles of levees, which amounted to 3,570 acres. Survey in MISSISSIPPI revealed a large infestation in Madison County, which is distantly removed from previously reported infested areas. (So. Reg., Dec. Rept.). Additional new county records are Washington County, FLORIDA: Madison and Tangipahoa Parishes, LOUISIANA: Berkeley and Marion Counties, SOUTH CAROLINA: and Muscogee, Chattahoochee, Marion and Peach Counties, GEORGIA. (PPC).

SOUTHERN LYCTUS BEETLE (Lyctus planicollis) - CALIFORNIA - Severely damaging stored hardwood in Eureka, Humboldt County. (Cal. Coop. Rept.).

LIGHT TRAPS

	Hel. zea	Pseud. unip	Prot. sexta	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subter	Prod. ornith.
TEXAS								
Beaumont 11/16-30		1			1			
Brownsville 11/15/57- 1/11/58	13	337	1	1,160	65	69	197	17
SOUTH CAROLINA (County)								
Charleston 1/13-19		2				1		1

SUMMARY OF INSECT CONDITIONS - 1957

PENNSYLVANIA

Compiled by J. O. Pepper

Highlights: SARATOGA SPITTLEBUG (Aphrophora saratogensis) increased to outbreak proportions causing considerable injury in Christmas tree plantations in western Pennsylvania. ALFALFA WEEVIL (Hypera postica) spread to 10 additional counties and in much of the area untreated alfalfa fields were severely damaged. An APHID (Hyalopteroides dactylidis) became extremely abundant on orchard grass causing stunting and yellowing in south central areas. Migrations of large numbers of EASTERN TENT CATERPILLAR (Malacosoma americanum) caused much concern in the southern part of the State.

Cereal and Forage Insects: Alfalfa - ALFALFA WEEVIL (Hypera postica) is now present in 35 counties of the State extending from the northeast corner diagonally across the State to Somerset County. Infestations in many sections were heavy and in unsprayed fields the first cutting was practically lost. PEA APHID (Macrosiphum pisi) on alfalfa began April 11 and increased considerably by April 30, when parasites and predators reduced the population rapidly. Except for a few small areas, the pea aphid was not a problem on alfalfa. SPITTLEBUGS (Philaenus spp.) began hatching in early April and by mid-May unsprayed fields showed heavy infestations. Adults began to appear on June 6. POTATO LEAFHOPPER (Empoasca fabae) adults were first noticed in late May and by June 12 were quite general and nymphs were present. During July and August, populations became very heavy and considerable damage was done. In one demonstration the sprayed area produced over 1000 pounds more dry hay per acre than the check area. Orchard Grass - An APHID (Hyalopteroides dactylidis) became exceedingly abundant on orchard grass in late April and early May causing stunting and yellowing in Fulton and other south central counties. Mixed Hay - TARNISHED PLANT BUG (Lygus lineolaris) began to appear in early May and by late June large numbers were collected in sweepings from hay fields. Clover - The LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) began to do some injury in mid-May but decreased later. Corn - EUROPEAN CORN BORER (Pyrausta nubilalis) adults first appeared May 22 and eggs were reported on June 6. The first generation began to pupate about mid-July. Very dry conditions were unfavorable for the second generation. CORN BORERS were moderately abundant. CORN FLEA BEETLE (Chaetocnema pulicaria) was very abundant generally with the heaviest populations in the southeastern part of the State. ARMYWORMS (Pseudaletia unipuncta) caused some injury to corn in mid-June in the southeastern area and in a few instances spraying was necessary. Outbreaks were spotted. CHINCH BUGS (Blissus leucopterus) began to appear in July in the southeastern and south central sections and caused severe damage in some fields. CORN LEAF APHID (Rhopalosiphum maidis) first appeared in late June becoming very abundant in southern half of the State by late July. The GARDEN SYMPHYLID (Scutigerella immaculata) destroyed 1 1/2 acres of corn during mid-May in the central part of the State. Other insects on corn reported as causing injury were CORN EARWORM (Heliothis zea), CUTWORMS, SOD WEBWORMS (Crambus spp.), and SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi). HESSIAN FLY (Phytophaga destructor) population was low. A casual survey in the southwestern part of the State showed about 7 percent spring infestation. The infestation this fall should be low because of the very dry summer.

Fruit Insects: RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) began hatching May 1 and by late May was nearly completed. Larvae of the second generation were found on foliage and fruit June 20. Close observation and adequate control measures were necessary to prevent damage. EUROPEAN RED MITE (*Panonychus ulmi*) eggs began hatching May 1 and by May 15 nymphs and adults were plentiful, becoming very abundant by mid-June. Infestations of the TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) began to cause injury in late May. PERIODICAL CICADA (*Magicicada septendecim*) (BROOD XIV) emerged in mid-May and by mid-June had caused very severe injury to fruit trees in the counties in which they are recorded. Juniata County, in addition to these, also had very severe damage in the fruit section. CODLING MOTH (*Carpocapsa pomonella*) began to emerge in mid-May, but cool nights delayed egg laying and emergence. On June 14 adults of the first generation were still emerging, while the larvae of the first laid eggs became mature. APPLE MAGGOT (*Rhagoletis pomonella*) in unsprayed orchards was very heavy. SCALE, mainly SAN JOSE (*Aspidiotus perniciosus*), is still present in many orchards and in a few is quite heavy.

Forest, Ornamental and Shade Tree Insects: SARATOGA SPITTLEBUG (*Aphrophora saratogensis*) caused considerable damage to Scotch and red pine in many Christmas tree plantations in western Pennsylvania. Control measures in late June and early July were necessary. Nymphs were easily found on a variety of vegetation in the plantations, particularly wild carrot and wild blackberry. ZIMMERMAN PINE MOTH (*Diorystria zimmermani*) larvae were very abundant in June infesting new terminals and laterals at the tops of the trees. Many of the infested twigs broke at the exit hole and the others withered and died. The problem was quite severe on Scotch pine and red pine throughout the State. PINE CHAFER (*Anomala obliqua*) was again found attacking the needles of Scotch pine in plantations in a number of areas. In one large plantation a heavy population was found throughout and control measures were necessary. APHIDS of the Cinara group were quite numerous. Cinara watsoni was present on the new growth in nursery beds, as well as in the plantations. Varying infestations of PINE SPITTLEBUG (*Aphrophora parallela*) were encountered over the State. One ten-acre plantation in the northwest had a very heavy infestation that caused considerable damage. NANTUCKET PINE MOTH (*Rhyacionia frustrana*) was extremely heavy in some Scotch pine plantations in southern areas. Control of the second generation was necessary to reduce damage. The first generation was nearly all emerged by May 10 and the second generation had emerged by July 10. PINE BARK APHID (*Pineus strobi*) appeared to be more abundant in 1957, as numerous infestations were reported. A heavy infestation in a seedling bed caused considerable damage. PINE TORTOISE SCALE (*Toumeyella numismaticum*) was reported from many sections of the State, causing discoloration on Christmas trees. Most infestations were spotted in a plantation. Heavy infestations in native Pinus virginiana occurred in the mountainous sections in the western area and, in some instances, control was effective. WHITE PINE WEEVIL (*Pissodes strobi*) attacked Scotch pine quite extensively in northwestern sections of the State and infestations of 6 to 7 percent were common. EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) is definitely influencing the reduction in plantings of red pine. In mixed Scotch and red pine plantations, the Scotch pine is also attacked to a considerable extent. Emergence of the moth this year, which was completed around June 20, was very uniform and timed control measures were quite successful. EASTERN TENT CATERPILLAR (*Malacosoma americanum*) was very abundant in southern counties and moderately so in the northern part of the State. Eggs were hatched previous to April 17 and by May 15 migrations of the mature larvae resulted in much concern by homeowners. On June 19 moths were flying to lights in large numbers and on June 28 the first eggs were noticed. PERIODICAL CICADA was quite heavy where expected. Lackawanna and Juniata Counties, heretofore not listed for this brood, also suffered considerable damage. BIRCH LEAF MINER (*Fenusa pusilla*) appeared to be generally more abundant than usual. PIT-MAKING SCALE (*Asterolecanium minus*) killed many twigs on pin oak in several locations.

Vegetable Insects: Early in the season FLEA BEETLES were abundant on cabbage and radish. During mid-May large numbers of the POTATO FLEA BEETLE (Epitrix cucumeris) were present on tomatoes and any potatoes that were up. During the first week of June spotted infestations of a CABBAGE FLEA BEETLE were reported from the southeastern part of the State. TARNISHED PLANT BUG (Lygus lineolaris), during June and July, were common on potatoes, and very abundant on potatoes and tomatoes in the northwestern part of the State. CABBAGE CURCULIO (Ceutorhynchus rapae) was much more abundant than usual. In late May larvae were injuring transplants in southeastern sections, and during late June and early July an average of 20 adults per plant was found in some fields in the northwest. TOMATO HORNWORM (Protoparce quinquemaculata) was fairly common in tomato fields and the TOMATO RUSSET MITE (Vasates lycopersici) caused spotted damage in some fields and was quite general in a few. CABBAGE MAGGOT (Hylemya brassicae) was moderately severe and IMPORTED CABBAGEWORM (Pieris rapae) caused real injury where it was not controlled. The STALK BORER (Papaipema nebris) was reported several times in June and July injuring tomatoes. The GARDEN FLEAHOPPER (Halticus bracteatus) caused quite extensive injury on tomatoes during July in Franklin County.

SUMMARY OF INSECT CONDITIONS - 1957

WEST VIRGINIA

Prepared by C. K. Dorsey

Highlights: ALFALFA WEEVIL infestations have now spread to include 13 counties most of which are located along the entire eastern border of the State. Damage to untreated alfalfa was severe in the older infestations, particularly to the first crop. EUROPEAN CORN BORER infestations were larger than last year and caused serious damage to field corn in several south and central counties. JAPANESE BEETLE moved rapidly into new areas in the southeastern and central parts of the State and caused considerable damage in these localities. PINE TORTOISE SCALE which had built up to threatening proportions on pulp producing Virginia pines in eastern West Virginia was spectacularly controlled by predators. EUROPEAN PINE SHOOT MOTH caused serious damage to young red and Scotch pine in forest and Christmas tree plantations over the State.

Cereal and Forage Insects: EUROPEAN CORN BORER (Pyrausta nubilalis) was more prevalent this year than last. In 15 principal corn producing counties 107 fields were surveyed; the average number of borers per 100 plants was 40. ALFALFA WEEVIL (Hypera postica) extended its range into 7 additional counties since the 1956 survey. This pest caused heavy damage to alfalfa in Jefferson, Berkeley and Hardy Counties. Several thousand larvae were confined in a rearing cage to complete development; there was no evidence of pre-pupal or pupal parasite emergence. SPOTTED ALFALFA APHID (Therioaphis maculata) is still confined to Monroe and Greenbrier Counties. The populations were very low, however, a few additional fields were infested this year. PEA APHID (Macrosiphum pisi) started an early season buildup in several counties, but did not become economically important. MEADOW SPITTLEBUG (Philaenus leucophthalmus) populations in general were smaller than in 1956; in limited areas they were numerous (Monroe and Greenbrier Counties). CORN LEAF APHID (Rhopalosiphum maidis) was more prevalent than usual particularly in south and central counties. CORN SAP BEETLE (Carpophilus species) was moderately abundant and caused damage in Greenbrier and Randolph Counties. CORN EARWORM (Heliothis zea) was less abundant than last year, but caused rather extensive damage to corn in several counties. SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) was prevalent and caused appreciable damage to corn in at least 12 counties.

Fruit Insects: CODLING MOTH (Carpocapsa pomonella) caused damage in some areas, but in the principal apple producing sections damage was light. EUROPEAN RED MITE (Panonychus ulmi) was numerous and injurious early in the season in the eastern panhandle. RED-BANDED LEAFROLLER (Argyrotaenia velutinana) was troublesome in some orchards in Jefferson and Berkeley Counties. APPLE APHID (Aphis pomi) was prevalent in the eastern panhandle, but fed mainly on apple sprouts. EASTERN TENT CATERPILLAR (Malacosoma americanum), in migrating, seriously damaged a strawberry field in Randolph County.

Truck Crop Insects: PURPLE-BACKED CABBAGEWORM (Evergestis pallidata) was numerous and destructive in several counties. In Monongalia County about 30 percent of a 5-acre cabbage field was destroyed. CABBAGE LOOPER (Trichoplusia ni) and IMPORTED CABBAGEWORM (Pieris rapae) were present in usual numbers; localized areas suffered heavy damage. MEXICAN BEAN BEETLE (Epilachna varivestis) infestations were light to medium, statewide. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) observed in at least 25 counties caused light to moderate damage. POTATO LEAF-HOPPER (Empoasca fabae)-moderate to heavy populations were observed statewide; heaviest damage was in Randolph County. POTATO FLEA BEETLE (Epitrix cucumeris) was numerous in several counties and fed heavily on potato foliage. HORNWORMS (Protoparce spp.) and TOMATO FRUITWORM (Heliothis zea) were present in usual numbers and caused damage to tomato plants in localized areas. CABBAGE MAGGOT (Hylemya brassicae) was reported to be troublesome in 15 counties in home gardens. CORN EARWORM (Heliothis zea) caused considerable damage to early sweetcorn in most areas of the State.

Forest, Ornamental and Shade Tree Insects: EASTERN TENT CATERPILLAR (Malacosoma americanum) statewide infestations were heavy during the year; forest, shade and orchard trees were defoliated when attacked. PERIODICAL CICADA (Magicicada septendecim) (Brood XIV) had a limited emergence in 1957; it was heavier in the southwestern counties and much lighter in the eastern panhandle region. FALL CANKERWORM (Alsophila pometaria) was numerous in areas of the eastern panhandle where it fed destructively on American elm. LOCUST LEAF MINER (Chalepus dorsalis) occurred statewide again this year with varying intensities; black locust in some areas was very severely damaged. FALL WEBWORM (Hyphantria cunea) infestations were very light. JAPANESE BEETLE (Popillia japonica) was numerous in northern, eastern and central West Virginia where it fed heavily on apple, persimmon and sycamore. A SAWFLY (Neodiprion sp.) damaged pitch pines in Nicholas County and red pines in Raleigh County. PINE NEEDLE SCALE (Phenacapsis pinifoliae) was observed in several counties, but was especially heavy on white pine in Pocahontas County. Several scale insects were observed causing damage in localized areas: EUROPEAN FRUIT LECANIUM (Lecanium corni) on maple and tuliptrees; AZALEA BARK SCALE (Eriococcus azaleae) on azalea; ROSE SCALE (Aulacaspis rosae) on rose and wild raspberry; OYSTERSHELL SCALE (Lepidosaphes ulmi) on lilac. WHITE PINE APHID (Cinara strobi) was found statewide in light to moderate infestations on young white and red pine. A SAWFLY (Cephalcia marginata) was present in rather heavy concentrations in Tucker County where it fed destructively on blue spruce. PINE SPITTLEBUG (Aphrophora parallela) infestations were light to medium in Randolph, Mineral, Monongalia, Hardy and Marshall Counties. A mite (unidentified) fed heavily upon and severely damaged plantation hemlock in a nursery in Tyler County. ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) and a GRAY-SIDED OAK WEEVIL (Pandeleteius hilaris) were collected frequently on red and white oaks in southwestern counties. CATALPA SPHINX (Ceratonia catalpae) was reported present in several areas with heavy feeding in Hardy County. GYPSY MOTH (Porthetria dispar) trap collections in 30 counties were negative. A statewide survey of forest tree nurseries and Christmas tree plantings of mainly red, Scotch and white pine was conducted. EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) infestations were prevalent, varying from medium to heavy and causing serious injury. NANTUCKET PINE MOTH (R. frustrana) infestations were not so widespread, but did damage pines. R. rigidana was scarce. WHITE PINE WEEVIL (Pissodes strobi) was found mainly in eastern and northeastern counties; caused severe injury to pines in 3 plantations. LOCUST BORER (Megacyllene robiniae) caused heavy damage to black locust over the entire State. BAGWORM (Thyridopteryx ephemeraeformis) caused

some damage to various ornamentals, but was much less numerous than last year. BOXWOOD LEAF MINER (*Monarthropalpus buxi*) and DOGWOOD TWIG BORER (*Oberea tripunctata*) caused damage in several localized areas. Several species of acorn weevils (*Curculio* spp.) destroy a large part of the acorn crop each year. PINE TORTOISE SCALE (*Toumeyella numismaticum*) was present on Virginia pine in the eastern part of the State in epidemic numbers; small pines were being killed and pines up to 40 feet high were severely damaged; natural enemies eradicated them in May.

Man and Animal Insects: COMMON CATTLE GRUB (*Hypoderma lineatum*) was more numerous in 1957 and caused much damage to cattle. AMERICAN DOG TICK (*Dermacentor variabilis*) populations were heavy especially in Marion and Mineral Counties. The DOG FLEA (*Ctenocephalides canis*) was prevalent statewide, infestations being reported on dogs, cats and man. Veterinarians, in different areas of the state, reported localized infestations of DOG BITING LOUSE (*Trichodectes canis*), CATTLE BITING LOUSE (*Bovicola bovis*), HORSE BITING LOUSE (*Bovicola equi*) and HOG LOUSE (*Haematopinus suis*). HOUSE FLY (*Musca domestica*) was troublesome in many areas late in the season. SHEEP KED (*Melophagus ovinus*), BLACK BLOW FLY (*Phormia regina*) and a GREEN BOTTLE FLY (*Phaenicia sericata*) were reported by county agents as being troublesome in some of the south, central and southeastern counties. HORSE FLY (*Tabanus* spp.) and DEER FLY (*Chrysops* spp.) populations were heavy and troublesome in at least 25 counties. BLACK WIDOW SPIDER (*Latrodectus mactans*) was especially numerous in Monongalia and Kanawha Counties.

Stored-Product and Household Insects: The results of the KHAPRA BEETLE (*Trogoderma granarium*) survey were negative. A statewide survey of grain mills and feed stores produced the commonly occurring stored grain pests previously reported.

Other Insects: ASIATIC GARDEN BEETLE (*Autoserica castanea*) was a pest of chrysanthemums in Kanawha County. OLD HOUSE BORER (*Hylotrupes bajulus*) was reported to have damaged dwellings in several areas. TERMITE and CARPENTER ANT activity was about as usual. CLOVER MITE (*Bryobia praetiosa*) was troublesome in homes in several counties, particularly Brooke and Fayette. MILLIPEDE migrations in Upshur County caused residents trouble by entering houses, by clogging well pumps and contaminating springs.

ARMYWORM CONDITIONS 1955-1957

Prepared in Plant Pest Survey Section

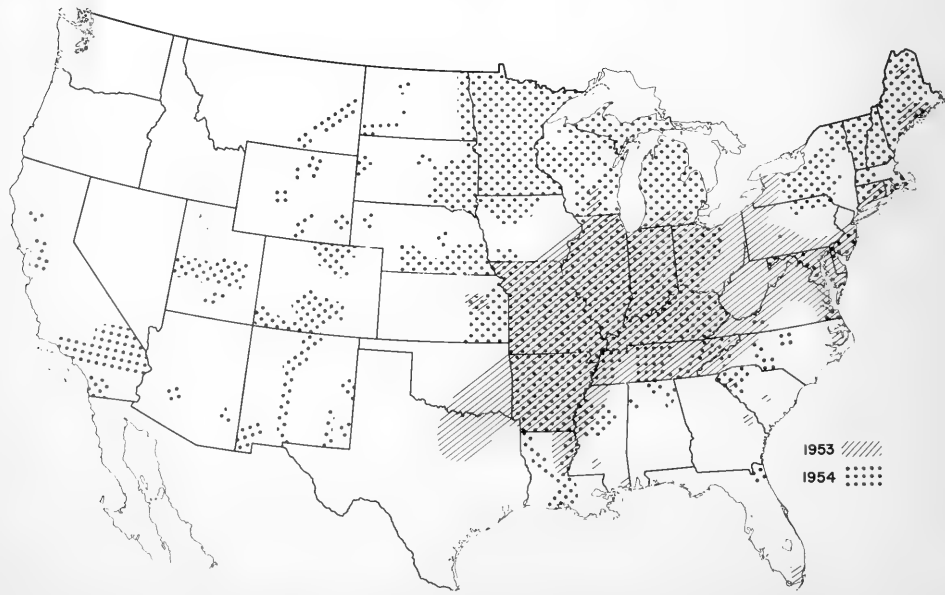
Following the severe and extensive armyworm (*Pseudaletia unipuncta*) outbreaks of 1953-54 (see map below), considerable interest developed in the biology and habits of the pest. One of the major approaches to this study has been through the use of light traps. In many instances the work has been made possible with traps supplied and installed by Agricultural Engineering Research Division, Agricultural Research Service. Various State agencies, using these traps as well as their own, and Entomology Research Division stations have conducted the trapping, identification and reporting from many areas.

The maps on the following pages are intended to show only the general trends in armyworm moth and larval populations during the more active seasons (March through August) of the past three years. The limits of this summary do not imply that the pest is active only during this period. In some of the Southern States moths were trapped the year round and larval infestations were reported in Broward County, Florida, in January 1955 and in northern Louisiana in February 1956.

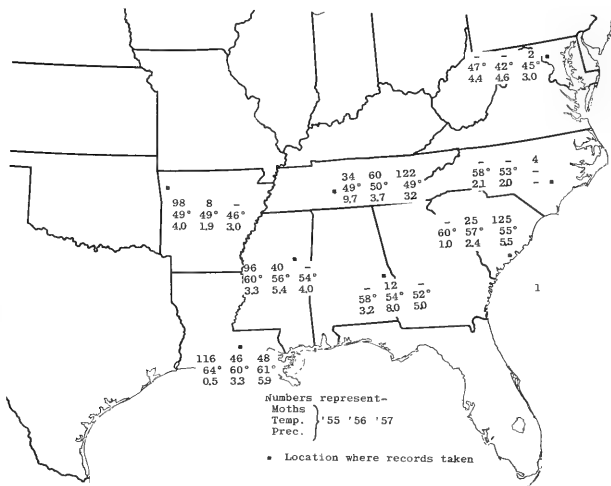
The incompleteness of such a compilation is evident. On some occasions traps were not operated, catches were lost or not reported. Reports on larval infestations are also incomplete.

On maps 1, 3, 5, 7, 9, 11, the total number of moths taken at a specific station during one month's time has been listed together with the average temperature and precipitation for that station during the same period. Weather records are from U.S. Weather Bureau.

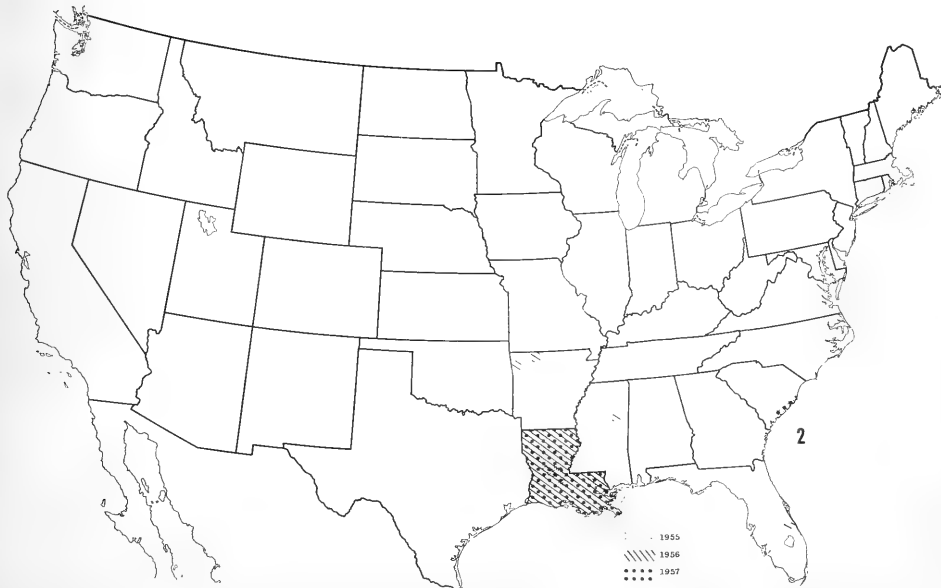
General Area of Armyworm Infestations 1953-54



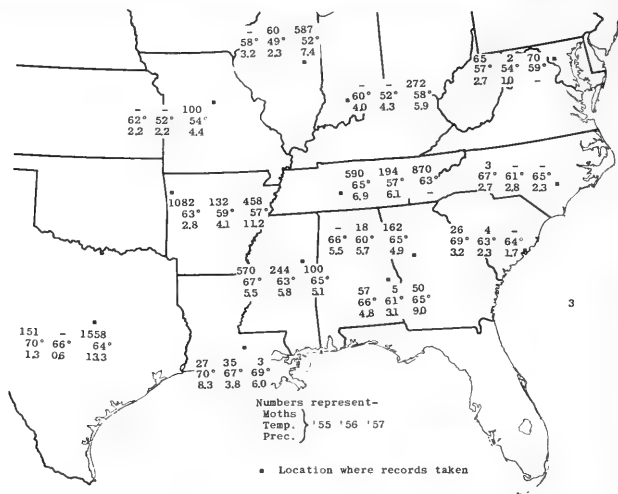
Armyworm Moth Catches, Temperature and Precipitation - March 1955-57



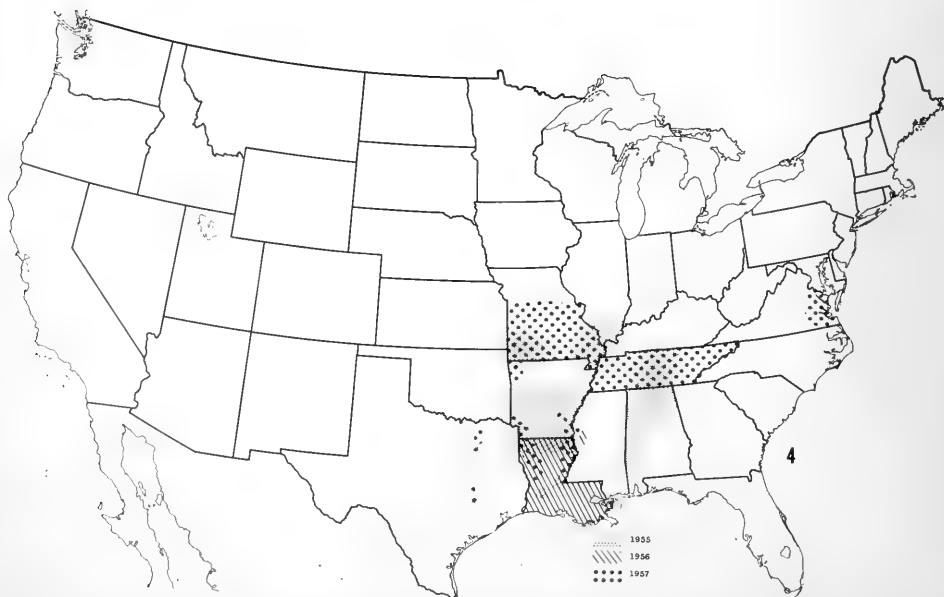
Armyworm Infestations - March 1955-57



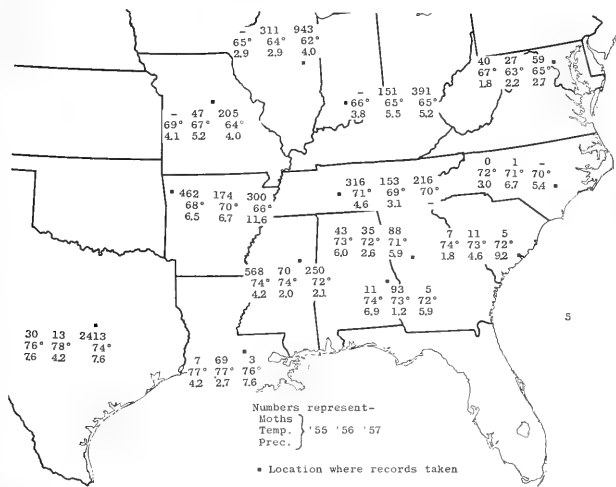
Armyworm Moth Catches, Temperature and Precipitation - April 1955-57



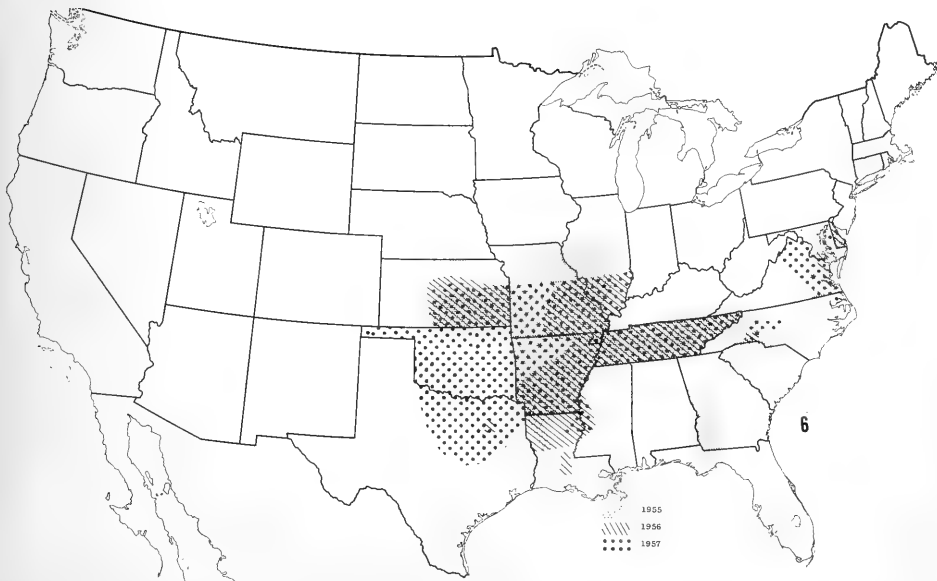
Armyworm Infestations - April 1955-57



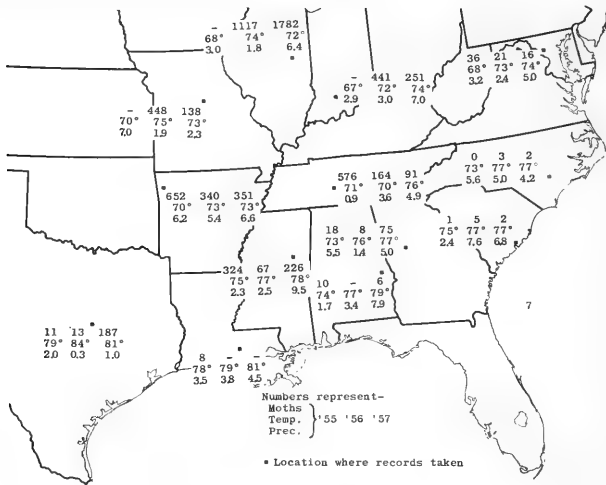
Armyworm Moth Catches, Temperature and Precipitation - May 1955-57



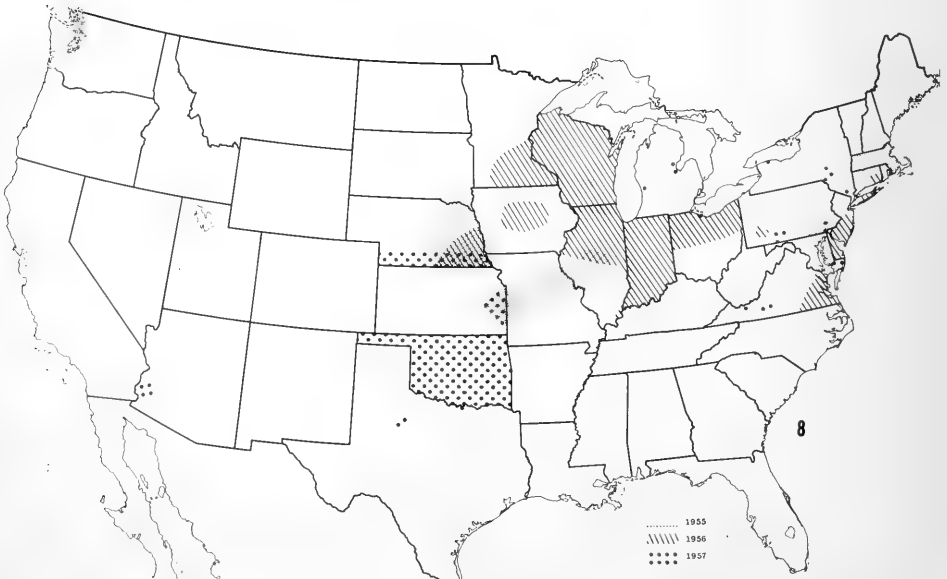
Armyworm Infestations - May 1955-57



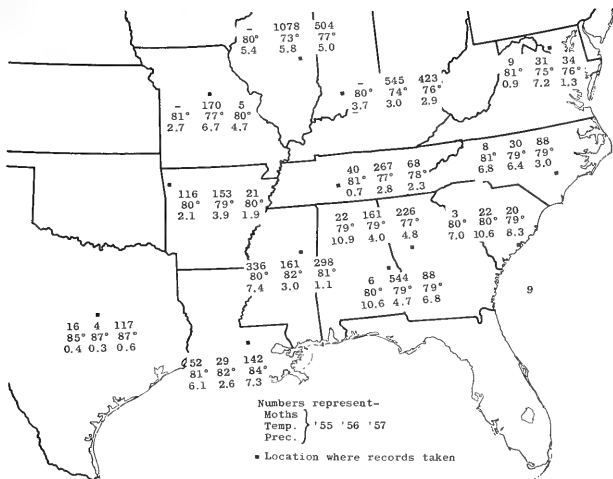
Armyworm Moth Catches, Temperature and Precipitation - June 1955-57



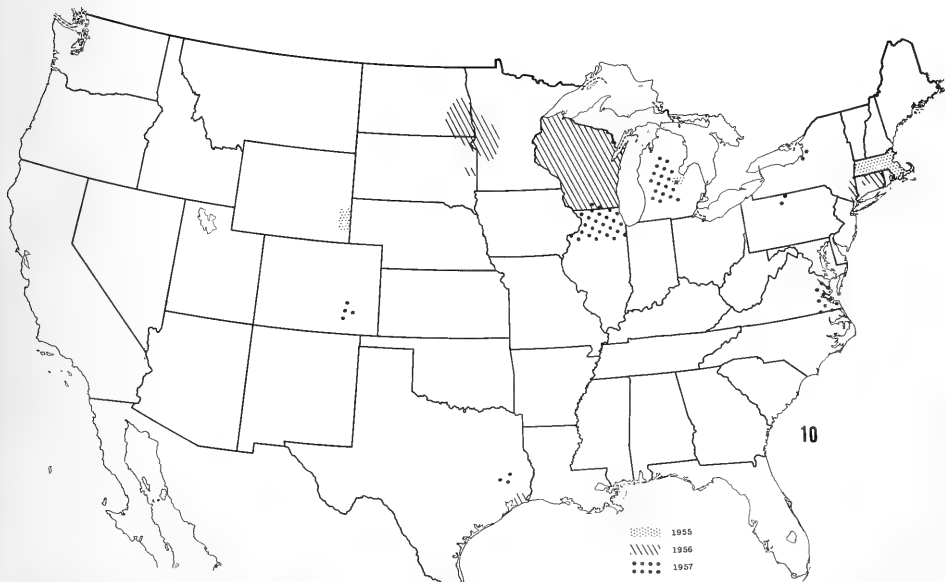
Armyworm Infestations - June 1955-57



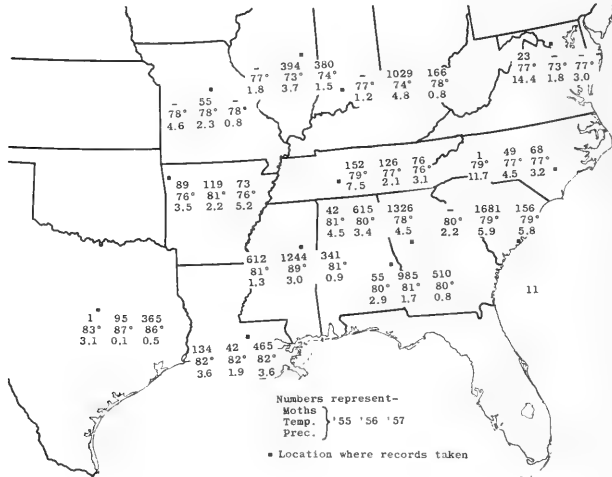
Armyworm Moth Catches, Temperature and Precipitation - July 1955-57



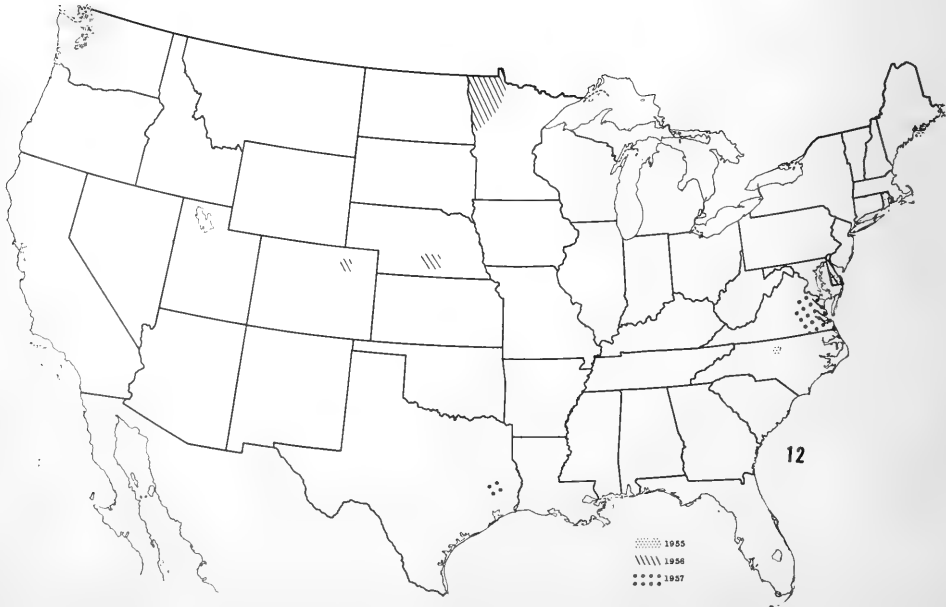
Armyworm Infestations - July 1955-57



Armyworm Moth Catches, Temperature and Precipitation - August 1955-57



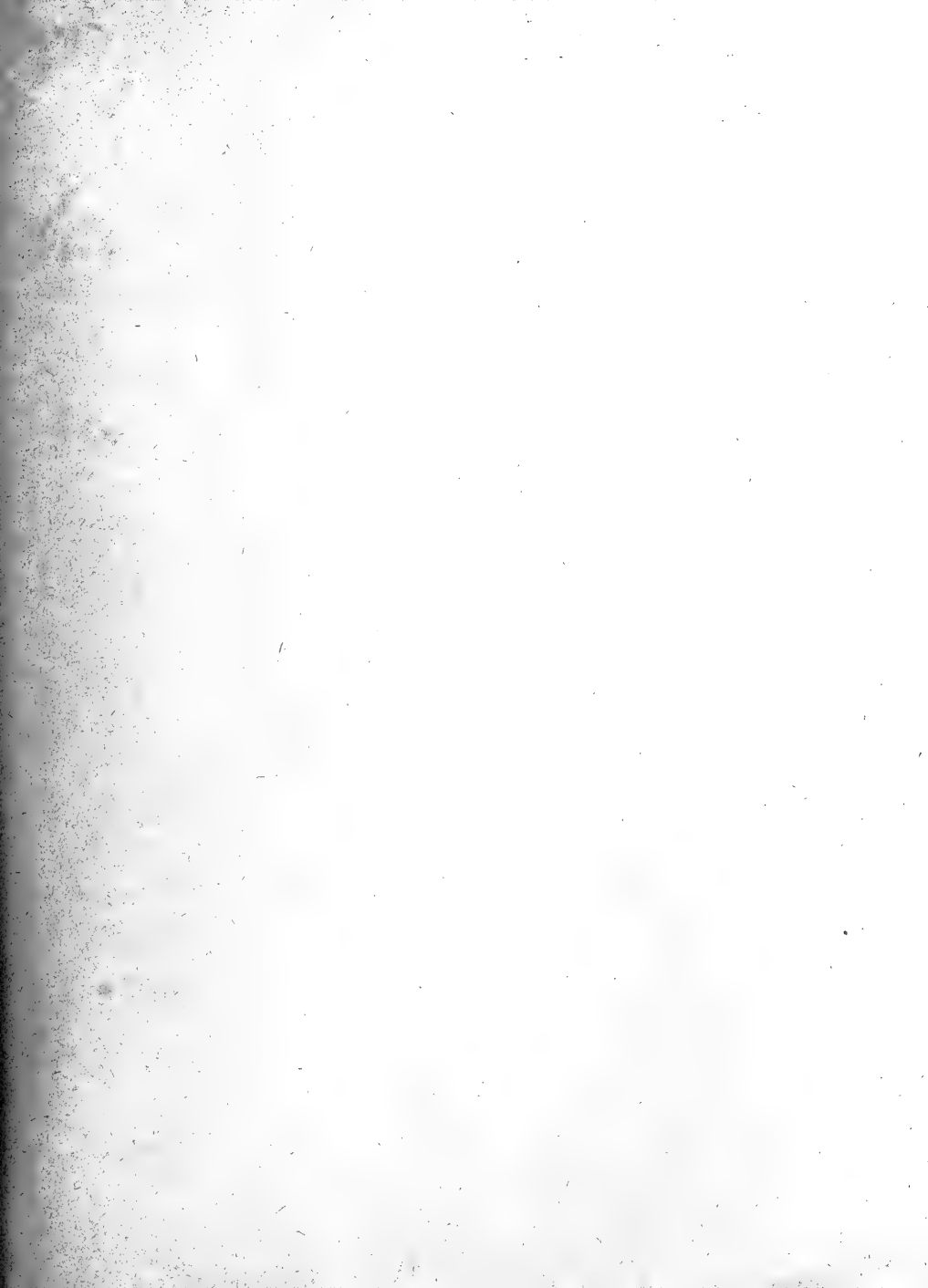
Armyworm Infestations - August 1955-57



Extent of
SCREW-WORM (*Callitroga hominivorax*) Infestation
in Southeast, 1957



Map from ARS records





VOL. 8 No. 5

JANUARY 31, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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 of Insect Conditions

VEGETABLE WEEVIL active in Riverside County, California and at Baton Rouge, Louisiana. (p. 72).

CATTLE GRUB survey in Kansas and Virginia. (p. 73).

A MITE (*Aceria ajugae*), apparently new to North America, reported from California. (p. 73).

EUROPEAN CORN BORER caused estimated \$158,841,000 loss to grain corn in United States in 1957. (p. 74).

SUMMARY OF INSECT CONDITIONS - 1957 - Nevada (p. 76), Oregon (p. 79), New Mexico (p. 83).

Reports in this issue are for the week ending January 24 unless otherwise designated.

WEATHER OF THE WEEK ENDING JANUARY 27, 1958

Two major storm systems produced generous precipitation east of a line joining Green Bay, Wis., and Del Rio, Texas, with additional heavy snow in the mid-continent area and Northeast as temperatures for the week were unseasonably mild in northern portions of the country and abnormally cold in the South.

As the first storm, centered over Arkansas at the end of the previous week, moved northeastward, from $\frac{1}{2}$ to over 1 inch of precipitation fell in Missouri and east of the Mississippi River, except in the Great Lakes region where amounts were lighter. Much of this precipitation was in the form of snow from Missouri to the Great Lakes, and on the 22d depths ranged from 8 to 12 inches in northeastern Kansas, 10 to 15 inches in west-central Missouri and southeastern Iowa, and up to 10 inches in northwestern Illinois and southeastern Wisconsin. This storm also produced 6 inches or more of snow in parts of New York and New England, and left a 1-inch cover over portions of the Ohio Valley.

Weather continued on Page 86.

CEREAL AND FORAGE INSECTS

CHINCH BUG (*Blissus leucopterus*) - OKLAHOMA - Survey completed in seven additional panhandle and northwestern counties showed average number of hibernating bugs per square foot of bunch grass as follows: Kingfisher 246, Dewey 11, Ellis 1, Custer, Beaver, Texas, Cimarron 0. (Coppock).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Only occasional aphid per alfalfa plant in Logan and Kingfisher Counties. (Coppock).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Heavy infestation on alfalfa at Redding, Shasta County. (Cal. Coop. Rept.).

FRUIT INSECTS

A TORTRICID (*Amorbia essigana*) - CALIFORNIA - Medium infestation in lemon flowers at Palo Alto, Santa Clara County. Moth normally attacks avocado in southern California. (Cal. Coop. Rept.).

ORANGE TORTRIX (*Argyrotaenia citrana*) - CALIFORNIA - Heavy infestation of larvae in fruit of grapefruit at Carlsbad, San Diego County. (Cal. Coop. Rept.).

SAN JOSE SALE (*Aspidiotus perniciosus*) - CALIFORNIA - Heavy on walnuts in Fresno County. (Cal. Coop. Rept.).

TRUCK CROP INSECTS

TOMATO PINWORM (*Keiferia lycopersicella*) - CALIFORNIA - General throughout San Diego County tomato fields during December. Trouble resulted from faulty control programs. One field had 30 percent crop loss. (Cal. Coop. Rept.).

CABBAGE APHID (*Brevicoryne brassicae*) - GEORGIA - Light infestations on cabbage and turnips in Colquitt, Thomas, Lowndes and Cook Counties. (Johnson).

CUTWORMS - CALIFORNIA - *Peridroma margaritosa* and *Agrotis ypsilon* heavy on asparagus at Newberry, San Bernardino County. (Cal. Coop. Rept.).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - CALIFORNIA - Heavy in dichondra lawn roots at Riverside, Riverside County. (Cal. Coop. Rept.).
LOUISIANA - Building up on weeds in East Baton Rouge Parish. (Oliver).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - GEORGIA - Light infestations on tobacco beds in Colquitt and Cook Counties. (Johnson).

STORED-PRODUCT INSECTS

A DERMESTID (*Perimegatomia vespulae*) - CALIFORNIA - Found in stored sacks at Hemet in Riverside County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

TROPICAL RAT MITE (*Ornithonyssus bacoti*) - GEORGIA - Moderate infestation on guinea pigs in laboratory at Chamblee, De Kalb County. Det. H. G. Scott. (CDC Ent. Mus.).

GERMAN COCKROACH (*Blattella germanica*) - GEORGIA - Heavy infestation in large apartment building Atlanta. Det. H. G. Scott. (CDC Ent. Mus.).

SHEEP SCAB MITE (*Psoroptes equi v. ovis*) - VIRGINIA - Found on 761 of 883 sheep inspected during December; 130 head dipped. (Va. Livestock Health Bul. 34 (1))

CATTLE LICE - KANSAS - Only light infestations found on 360 head of cattle at one location in Chase County. Lice infestations were reported increasing and some spraying is being done. (Matthew).

CATTLE GRUBS (*Hypoderma* spp.) - VIRGINIA - Averaged 22 per animal in herd of Augusta County cattle, January 20; 8 per animal in Montgomery County herd, January 7. (Turner). KANSAS - In Chase County, east central area, 360 head of feeder cattle were examined. Of this number, 96.6 percent were infested; average number of grubs per animal was 5.6. (Matthew). Average of 18.6 grubs per animal in ten head examined in Riley County, northeast area. (Knapp).

BROWN DOG TICK (*Rhipicephalus sanguineus*) - DELAWARE - Troublesome in home, northern New Castle County, mid-December. (MacCreary).

YELLOW FEVER MOSQUITO (*Aedes aegypti*) - GEORGIA - Adults in office, De Kalb County. Det. H. D. Pratt. (CDC Ent. Mus.).

MISCELLANEOUS INSECTS

A MITE (*Aceria ajugae*) - CALIFORNIA - The bugle bud mite was reported from bugle weed in Santa Fe Springs, Los Angeles County. This is apparently the first record of this species for North America. Its economic importance is not known. Det. H. H. Keifer. (Cal. Coop. Rept.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Collected in sweep net while sweeping for other insects near Archbold Biological Station, Highlands County. (H. A. Denmark).

CLOVER MITE (*Bryobia praetiosa*) - GEORGIA - Large numbers on walls of 4 institutional homes, De Kalb County. Det. by H. D. Pratt. (CDC Ent. Mus.).

CORRECTIONS

Summary of 1957 Insect Conditions in Delaware, CEIR 7(49):911 - Loss due to European corn borer should be 133,000 bushels, valued at 177,000 dollars. (Milliron).

LIGHT TRAPS

	<i>Prodenia ornithogalli</i>	<i>Agrotis ypsilon</i>	<i>Feltia subterranea</i>	<i>Psuedaletia unipuncta</i>	<i>Trichoplusia ni</i>
SOUTH CAROLINA					
Charleston 1/20-26	1	2	1		
FLORIDA					
Quincy 1/8-14			2	1	
Sanford 1/16		2	2		1
Monticello 1/14			1		

Estimates of Damage by the European Corn Borer
to Grain Corn in the United States in 1957

Compiled by Plant Pest Control Division, ARS

The loss of corn grown for grain from damage attributed to the European corn borer (*Pyrausta nubilalis*) in 1957 is estimated to be nearly 181 million bushels. This is approximately 6 percent of the total national crop estimated at 3,060,480,000 bushels. 1/ The value of the crop lost based on the December price level 2/ is \$158,841,000.

Table 1 is a composite of State and Federal estimates. These estimates were prepared by using production data 1/ and prices received 2/ released by the Agricultural Marketing Service. The basis for the loss estimates was determined by the survey of corn borer populations during the fall of 1957. 3/ In most instances the index of 3 percent loss per borer per plant was used to compute the loss in bushels.

Estimated losses caused by the European corn borer in the last nine years are as follows:

1957	180,897,000 bushels	\$158,841,000
1956	97,971,000 "	119,535,000
1955	155,355,000 "	182,579,000
1954	191,614,000 "	261,415,000
1953	90,000,000 "	125,466,000
1952	53,270,000 "	77,205,000
1951	35,812,000 "	57,438,000
1950	58,765,000 "	84,912,000
1949	313,819,000 "	349,635,000

1/ Crop Production, 1957 Annual Summary Crop Reporting Board, Agricultural Marketing Service, December 17, 1957.

2/ Agricultural Prices, as of December 15, Crop Reporting Board, Agricultural Marketing Service, December 30, 1957.

3/ Status of the European Corn Borer in 1957. Cooperative Economic Insect Report. Vol. 8, No. 3, pp. 33-42. Loss estimates are only for states shown in Table 1.

Table 1. Estimates of damage by the European corn borer to corn grown for grain in the United States in 1957

State	: Districts : Included <u>1/</u>	: Total State : Production	: Estimated data			
			: Value : per : bushel	: Value : of : production	: Loss of crop	
	<u>Number</u>	<u>1,000 Bu.</u>	<u>Dollars</u>	<u>1,000 Dol.</u>	<u>1,000 Bu.</u>	<u>\$1,000</u>
Connecticut	2	141	1.55	218	2	3
Delaware	1	3,930	1.33	5,227	133	177
Illinois	9	510,592	1.01	515,698	10,976	11,085
Indiana	12	251,812	1.00	251,812	1,498	1,498
Iowa	12	597,316	.85	507,718	102,166	86,840
Kansas	4	36,180	1.03	37,265	1,386	1,428
Maryland	1	11,760	1.35	15,876	244	329
Michigan	3	74,500	1.08	80,460	102	110
Minnesota	6	289,536	.80	231,628	9,110	7,288
Missouri	7	140,492	1.01	141,897	16,399	16,562
Nebraska	7	215,761	.93	200,657	18,816	17,499
New Jersey	1	2,400	1.38	3,312	64	89
New York	1	12,852	1.26	16,193	21	26
North Dakota	3	14,308	.82	11,732	277	227
Ohio	5	169,884	1.12	190,270	1,295	1,450
Pennsylvania	9	38,594	1.40	54,032	684	958
South Dakota	6	122,199	.72	87,983	16,351	11,773
Vermont	1	50	1.55	77	Trace	1
Virginia	2	16,907	1.39	23,501	177	246
West Virginia	1	5,082	1.37	6,962	61	83
Wisconsin	7	104,036	1.03	107,157	1,135	1,169
Total		2,618,332		2,489,675	180,897	158,841

1/ Status of the European Corn Borer in 1957. Cooperative Economic Insect Report Vol. 8, No. 3, pp. 33-42.

SUMMARY OF INSECT CONDITIONS - 1957

NEVADA

Reported by R. C. Bechtel, H. E. Gallaway and R. W. Lauderdale

Highlights: SPOTTED ALFALFA APHID extended its range to include most alfalfa producing areas in the State. CABBAGE LOOPER infestation of onions in Lyon County were heaviest in recent years. LESSER CLOVER LEAF WEEVIL developed economic populations in Lyon County. SPIDER MITES increased throughout the State. COTTON INSECTS developed heaviest populations yet encountered. MOSQUITOES were much more numerous than in previous years. Other troublesome pests included alfalfa weevil, pea aphid, Lygus bugs, cattle grubs, cattle lice, house and blow flies, horn fly, stable fly, corn earworm and/or cotton bollworm, grasshoppers, Mormon cricket, harvester ants, ticks, codling moth, elm leaf beetle, bark beetles, termites, sheep ked, clover mite and gnats.

Cereal and Forage Insects: ALFALFA WEEVIL (Hypera postica) caused moderate to severe damage in the northern half of the State although populations were below those of 1956. Improved timing of adult control and doubling of the acreage treated decreased a higher potential damage. In many untreated or improperly treated fields damage was very severe. Localized damage greatly retarded second crop alfalfa. Losses are estimated to exceed 37,800 tons valued at approximately \$756,000. SPOTTED ALFALFA APHID (Therioaphis maculata) increased rapidly in the southern counties early in the season, then dropped to much lower numbers than in previous years. Heavy infestations developed on second and third crops in Churchill and White Pine Counties. Many populations were decreased to far below the economic level by predators in the southern counties and unknown factors in the central counties. The PARASITES (Praon palitans and Trioxys utilis) were released in various areas in Clark, Churchill and Nye Counties. Only P. palitans was recovered and this was in southern Nye County. SPOTTED ALFALFA APHID extended its range into northern Elko, Eureka, Humboldt, Nye and Washoe Counties and also into Douglas County. Estimated loss exceeded 21,600 tons valued at \$432,000. PEA APHID (Macrosiphum pisi) caused losses of alfalfa hay and reduced seed production in many areas. Populations deviated from normal and remained high the entire season. LYGUS BUGS (Lygus spp.) were very abundant on alfalfa and other crops in many areas. Losses occurred in seed fields where control was omitted, delayed or improper, and an undetermined amount of damage was done to forage fields. WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) was the major pest of rangelands. Many ranges which formerly supported large numbers of livestock now support only a small percentage of these. GRASSHOPPER populations were mostly non-economic and little or no control was directed toward Melanoplus spp. CLEAR-WINGED GRASSHOPPER (Camnula pellucida) required control in northeastern Nevada, however. The 1956 adult grasshopper survey revealed an exceptionally heavy buildup of this species in this region. This population increase constituted a serious threat to federal reseeding projects in the area as well as to native vegetation and other crops. As a result, approximately 20,600 acres were treated in the Deeth-Wells, Thousand Springs and Red House areas of Elko County at a cost of \$14,100. Good to excellent control resulted. MORMON CRICKET (Anabrus simplex) required control on a total of 22,800 acres in the Selenite Range, Pershing County and Cherry Creek Mountain, White Pine County at a cost of \$21,150. Pest control surveys showed excellent control results. CORN EARWORM (Heliothis zea) again caused moderate to heavy damage to field corn. This was especially true in the southern counties. ALFALFA CATERPILLAR (Colias philodice eurytheme) populations were lower than in the past three years. Losses to this insect were at a minimum. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) damaged clover in Lyon County. SAY STINK BUG (Chlorochroa sayi) caused local injury to grain and alfalfa seed crops. WHITE-LINED SPHINX (Celerio lineata) larvae caused light damage to grain in western Humboldt County.

ENGLISH GRAIN APHID (Macrosiphum granarium) failed to develop economic populations except in southern Pershing County. CORN LEAF APHID (Rhopalosiphum maidis) was present on barley in the west central part of the State. No economic damage was noticed. SUNFLOWER MOTH (Homoeosoma electellum) caused moderate to heavy damage in Clark and Pershing Counties. A WHITE GRUB (Aphodius hamatus garmani) continued to damage native pasture grasses in Elko County. The damage was less than that of 1956. LEAFHOPPERS of various species were present on many crops, but the amount of damage done has not been estimated.

Fruit Insects: SPIDER MITES (Tetranychus spp.) were heavier than in previous years. Damage due to these pests was severe since many growers did not treat for them. CODLING MOTH (Carpocapsa pomonella) damage was held to a minimum on sprayed trees, but was usually 100 percent on unsprayed trees. PEAR-SLUG (Caliroa cerasi) again caused serious damage to pear and cherry trees. GREEN PEACH APHID (Myzus persicae) damaged peach and plum trees in the western part of the State. PEAR LEAF BLISTER MITE (Eriophyes pyri) developed moderate infestations in Douglas County. BLACK-MARGINED APHID (Monellia costalis) heavily infested pecans in Clark County.

Truck Crop Insects: BEET LEAFHOPPER (Circulifer tenellus) populations were light and averaged about 0.5 leafhoppers per square foot in southern Nevada. Curly top incidence also remained low. Fall beet leafhopper movements were heavier and earlier than in previous years and averaged about 2.0 per square foot of beet row. Host plants for overwintering populations were more numerous. Some control measures have already been started in an attempt to reduce these populations. Population readings in Churchill County were non-economic and averaged 0.02 leafhoppers per square foot of beet row. POTATO TUBERWORM (Gnorimoschema operculella) has become established in the field in the Panaca area, Lincoln County. MELON APHID (Aphis gossypii) populations were heavy, and caused damage to squash and cantaloups. SQUASH BUG (Anasa tristis) damaged melons, including watermelons, in the southern counties. Some growers reported poor control with sabadilla. TOMATO FRUITWORM (Heliothis zea) caused moderate damage to tomatoes in localized areas. WIREWORMS (species unknown) destroyed 30 acres of corn in Churchill County. ONION THRIPS (Thrips tabaci) were present in normal but economic numbers. Control measures reduced the populations to non-economic levels. ONION MAGGOT (Hylemya antiqua) populations were below normal. No economic damage resulted. BLACK CUTWORM (Agrotis ypsilon) and CABBAGE LOOPER (Trichoplusia ni) caused light to moderate damage to onions in Lyon and Washoe Counties. LEAFHOPPERS were present on various crops and caused damage in localized areas.

Cotton Insects: SPIDER MITE (Tetranychus spp.) increases were greater than those of any other cotton pests. Approximately twice as much acreage was treated as in 1956. BOLLWORM (Heliothis spp.) numbers were up over previous years. Control measures kept damage at a minimum. COTTON APHID (Aphis gossypii), LYGUS BUGS (Lygus spp.) and THRIPS (Frankliniella spp.) populations were up slightly over previous years. Damage was held to a low percentage with control measures. PINK BOLLWORM (Pectinophora gossypiella) and BOLL WEEVIL (Anthonomus grandis) surveys were negative.

Forest, Ornamental and Shade Tree Insects: ELM LEAF BEETLE (Galerucella xanthomelaena) again severely damaged elms in parts of Churchill, Douglas, Lyon, Ormsby, Pershing and Washoe Counties. Damage was almost 100 percent on untreated trees and was also heavy on improperly treated ones. EUROPEAN ELM SCALE (Gossyparia spuria) remained a severe pest on untreated elms. Populations were effectively controlled on trees which were sprayed for elm leaf beetle. MOUNTAIN PINE BEETLE (Dendroctonus monticolae), RED TURPENTINE BEETLE (D. valens) and WESTERN PINE BEETLE (D. brevicomis) heavily damaged spotted areas of ponderosa pine on approximately 4,000 acres in the Crystal Bay area, Lake Tahoe. JEFFREY PINE BEETLE (D. jeffreyi) infested and killed Jeffrey pine trees in southwestern Washoe County. A BLACK PINE LEAF SCALE caused serious injury to pinon pine in Clark County. SPIDER MITES (Tetranychus spp.) were more numerous than in previous years and caused severe damage to ornamental plants and shade trees. APHIDS of

various genera and species caused considerable damage in 1957. MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) severely damaged willows and cottonwoods in various areas in the northern half of the State. VIRGINIA-CREEPER LEAFHOPPER (Erythroneura ziczac) caused defoliation or severe injury to most Virginia creepers in western Nevada.

Insects Affecting Man and Animals: MOSQUITOES (Aedes spp. and Culex spp.) again increased to greater populations than in previous years. In certain areas there were meetings to discuss the formation of abatement districts. CATTLE GRUBS, CATTLE LICE, HORN FLY (Siphona irritans), STABLE FLY (Stomoxys calcitrans) and SHEEP KED (Melanophagus ovinus) caused extensive but normal damage over the State. HOUSE FLY (Musca domestica) caused slightly more than normal annoyance to both livestock and man. HORSE FLIES and DEER FLIES were very numerous, especially in western and northern Nevada. TICKS (Dermacentor spp.) were numerous, especially in the northern counties. GNATS were much more numerous than usual, especially in southern Clark County. TERMITES (Reticulitermes sp.) again increased in western and southern Nevada. In certain localities they caused serious damage. CLOVER MITE (Bryobia praetiosa) was a serious pest of households in the northern and western areas. The areas in which this pest was reported are increasing. ANTS, CARPET BEETLES, YELLOW JACKETS, COCKROACHES, EUROPEAN EARWIG (Forficula auricularia) and BOXELDER BUG (Leptocoris trivittatus) were also common household pests.

Stored Products Insects: GRANARY WEEVIL (Sitophilus granarius), SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), CONFUSED FLOUR BEETLE (Tribolium confusum), YELLOW MEALWORM (Tenebrio molitor), INDIAN-MEAL MOTH (Plodia interpunctella) and MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) were present in normal numbers in homes and granaries. A DERMESTID (Trogoderma parabile) infested grains, cereals, and other products in Clark, Elko, Pershing and Washoe Counties. No economic damage resulted. KHAPRA BEETLE (T. granarium) survey was negative.

Beneficial Insects: DAMSEL BUGS, LACEWINGS, LADY BEETLES, MINUTE PIRATE BUGS, and SYRPHID FLIES helped to reduce or retard many potential economic aphid populations. A SPOTTED ALFALFA APHID PARASITE (Praon palitans) became established in the field in Nye County. Native bee pollinators such as Nomia melanderi melanderi, Anthophora spp., Bombus spp. Megachile spp., Melissodes spp. and Osmia spp. were observed and collected in various alfalfa and clover seed fields.

SUMMARY OF INSECT CONDITIONS - 1957

OREGON

Reported by Joseph Capizzi

Highlights: HESSIAN FLY outbreak in the Willamette Valley was the most serious in 30 years. Infestations of the RASPBERRY CANE MAGGOT, were estimated from 10-30 times above those in 1956. WHEAT STEM MAGGOTS were more abundant in Jefferson, Deschutes, Yamhill, Union and Malheur Counties than in the past 6 or 7 years. BIRCH LEAF MINER, a new State record, severely damaged 20-30,000 young nursery seedlings near Portland. ONION MAGGOT continued in unusually high populations in Malheur County. A PIT-MAKING SCALE heavily damaged white oak in several locations in the Willamette Valley. APHID vectors of a yellow dwarf virus outbreak in the Willamette Valley were especially numerous in grain fields. ORIENTAL FRUIT MOTH: Total of 177 moths collected at or adjacent to known infestations at Salem and Portland. SYMPHYLID problems increased statewide on vegetable, field, and specialty crops. NITIDULIDS have gradually built up to serious numbers over the past five years. Red clover seed fields are especially subject to attack.

Cereal and Forage Insects: ALFALFA WEEVIL (*Hypera postica*) populations fell far below those in 1956. Adults became active in April. In June and July, average counts were 5 larvae and 1 adult per 10 sweeps. Only fields suffering heavy damage the previous year were treated in Malheur and Klamath Counties. PEA APHID (*Macrosiphum pisi*) did not build up in eastern Oregon counties but unusually high counts were taken in Umatilla County on alfalfa (10-20 per sweep in July). Vetch and field peas suffered moderate damage by aphids at mid-summer in the Willamette Valley. Adults of A NITIDULID (*Meligethes nigrescens*) appeared on April 11 in Polk County. By July 20 migration was underway to red clover and bean fields and control was necessitated. Populations were considered the highest in five years through the central Willamette Valley north to Multnomah County. CLOVER APHID (*Anuraphis bakeri*) was more numerous in Malheur County in red clover than in 1956. LYGUS BUGS (*Lygus* spp.) were present in damaging numbers in most seed-growing areas of the State. Umatilla County alfalfa growers experienced damaging populations throughout most of the growing season. Bloom damage resulted in reduced seed yield at Umapine. Lygus built up by mid-summer in Malheur and southern Oregon counties. July 20 counts ran as high as 250 nymphs and adults per 10 sweeps in Josephine and Jackson Counties. OMNIVOROUS LEAF TIER (*Cnephasia longana*) was much less a threat than in 1956. By May 6, the larvae were mining the leaves of vetch in the Willamette Valley. Favorable weather conditions are thought responsible for a reduction in damage. A GRASS STEM MINER (probably *Phytomyza nigra*) appeared in large numbers in wheat, bentgrass, and fescue in Marion County during early May, the heaviest infestation of this type since 1952. WHEAT STEM MAGGOTS (*Meromyza pratorum* and *M. saltatrix*) were more abundant than for several years. Damage was reported to bluegrass in Union County May 18, wheat and barley fields were attacked in the Ontario-Nyssa area in July and scattered infestations in spring wheat were common in Jefferson, Deschutes, and several Willamette Valley counties. The most serious outbreak of the HESSIAN FLY (*Phytophaga destructor*) in 30 years occurred in the Willamette Valley in 1957. Conservative estimate of damage has been placed at one-half million dollars. Spring wheat plantings were hardest hit, some fields having 50 or more percent of the plants damaged. Surveys in July showed moderate to heavy damage from Marion to Washington Counties. Flies emerged from "flaxseeds" as rains began about October 8. A cereal yellow dwarf virus was common in small grains throughout the Willamette Valley this year. A survey of grain aphids uncovered several species known to transmit this virus. Among these were *Macrosiphum granarium*, *M. dirhodum* and *Rhopalosiphum maidis*. PEA LEAF WEEVIL (*Sitona lineata*) continues to extend its range southward, invading northern Benton County in 1957. Economic infestations occurred in red clover, alfalfa,

trefoil seed fields, and legumes in irrigated pastures in Polk and Yamhill Counties. Weevil activity declined in mid-August. An outbreak of A CUTWORM (*Heliothis phloxiphaga*) damaged wheat fields in Sherman and Wasco Counties but a virus disease cut larval populations sharply to avert more serious injury. GRASSHOPPER control on a private basis was carried out on 7,697 acres in 16 counties. The estimated loss state-wide as a result of grasshopper damage was \$80,000. The estimated state-wide savings in crop on range as a result of control work was \$71,500. A cooperative U.S.D.A.-rancher control program of the MORMON CRICKET (*Anabrus simplex*) was undertaken in Gilliam County June 10. Approximately 2,085 acres were baited by air near Blalock.

Fruit Insects: CODLING MOTH (*Carpocapsa pomonella*) - First adults found April 29 at Salem, May 4 at Milton-Freewater and May 13 at Hood River. Scattered light infestation occurred in the Willamette Valley. Elsewhere, this insect was adequately controlled with the exception of one 10-acre block of apples in Jackson County that suffered nearly 100 percent apple damage by August. During 1957, infestations of the PEAR PSYLLA (*Psylla pyricola*) were heavier than normal, primarily because of poor weather conditions for spray application. Adults were abundant and oviposition noted by February 18 at Medford, fourth-instar nymphs were present April 19, and adults appeared April 30. In Hood River, several orchards not treated with dormant sprays were heavily infested by June 16. PEACH TWIG BORER (*Anarsia lineatella*) was damaging in the State wherever controls were omitted. In Milton-Freewater, 10 percent of the growth of prunes in one orchard was affected. Larvae were abundant and causing flagging in apricot and peach orchards at The Dalles May 4. A GEOMETRID (*Operophtera occidentalis*) continues to cause severe defoliation of fruit trees in and around Portland; noticeable during April. APPLE AND THORN SKELETONIZER (*Anthophila pariana*) continued on a gradual increase in the Willamette Valley, particularly in unsprayed orchards and backyard apple trees. FALL WEBWORM (*Hyphantria cunea*) has also been on the increase in the past three years. Adults emerged May 21 in Marion County. Walnuts are a preferred host but a prune orchard at Dundee was reported infested during August. A TENTIFORM LEAF MINER (*Lithocolletis* sp.) heavily infested several apple blocks in Jackson County. Large numbers of adults, and egg laying noted April 30. Pupating of first-generation larvae began May 27. WESTERN CHERRY FRUIT FLY (*Rhagoletis cingulata indifferens*) was adequately controlled in commercial orchards. First official record of the fly in Malheur County was established in July. ORIENTAL FRUIT MOTH (*Grapholitha molesta*) trapping on a large scale continued throughout the State. A total of 177 moths were collected from or adjacent to known-infested orchards or single trees in Portland and Salem areas. SAN JOSE SCALE (*Aspidiotus perniciosus*) continues on the increase especially in Jackson County. Speed spray equipment and careless application is considered the cause of this increase. In The Dalles area, there were spotty heavy infestations of the GREEN PEACH APHID (*Myzus persicae*) but populations were normal in other areas. PEAR THRIPS (*Taeniothrips inconsequens*) were more abundant than in 1956. Peak emergence was reached March 24-30. By mid-season infestations were normal except for some severe damage at Forest Grove. BLACK CHERRY APHID (*Myzus cerasi*) continued troublesome in the Willamette Valley and in Jackson County. Control was necessary to check serious damage in Union County. APPLE APHID (*Aphis pomi*) was abundant in the Willamette Valley, Hood River, and Milton-Freewater. The MEALY PLUM APHID (*Hyalopterus arundinis*) caused damage to new growth of prunes and plums at Milton-Freewater in May. PEAR LEAF BLISTER MITE (*Eriophyes pyri*) built up heavy infestations over most of the fruit-growing areas of the State. Unfavorable weather for spraying and lack of spray programs accounts for much of the damage. The PEACH SILVER MITE (*Vasates cornutus*) was above normal in numbers in Jackson County and eastern Oregon during 1957. The EUROPEAN RED MITE (*Panonychus ulmi*) was increasingly in evidence, hatching April 11 in Jackson County and April 28 at Hood River, where foliage damage was general. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was very abundant in most orchards in Jackson County. Heavier than normal populations existed in the Willamette Valley and were above normal at Hood River and The Dalles. The YELLOW SPIDER MITE (*Eotetranychus carpini*), along with *T. telarius*, remain the two most important mite pests of pears in Jackson County and difficulty in control is being experienced. FILBERTWORM (*Melissopus latiferreanus*) - First adults emerged in

Lane County July 5. Infestations were general and in most cases heavy because of inconsistent control practices. Infested nuts ran as high as 30 percent in some orchards. A FILBERT LEAF ROLLER (Archips rosana) caused considerable damage to foliage in Linn, Lane and Benton Counties but were only moderate in numbers north of Linn County. A FILBERT APHID (Myzocallis coryli) built up to economic populations in Willamette Valley orchards by mid-April, dropped off during a period of hot dry weather in August and then, built up in late summer. Predators, primarily lady beetles and lacewings aided in controlling late season populations. The RASPBERRY CANE MAGGOT (Pegomya rubivora) caused significant damage to caneberrys in all areas where they are grown in the Willamette Valley, especially in Clackamas, Polk and Yamhill Counties. The OBLIQUE-BANDED LEAF ROLLER (Archips rosaceana) was reported on several occasions as infesting caneberry plantings in the central Willamette Valley. One instance of larvae found in crates of raspberries at Gresham during July was of particular concern.

Truck Crop Insects: WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) continues to be one of the most formidable pests of vegetable crops in the Willamette Valley, particularly on beans and corn. Damage was general and often serious. ONION MAGGOT (Hylemya antiqua) caused severe losses in Malheur County - estimated at 10-15 percent of the crop, valued at 1 1/2 million dollars. Western Oregon's onion crop did not receive an unusual amount of injury during 1957. SEED-CORN MAGGOT (Hylemya cilicrura) was injurious to young bean plantings in Washington and Yamhill Counties in early May. An unusual attack of COLLEMBOLA (undetermined species) necessitated the replanting of 25 acres of table beets at Independence May 28. ASPARAGUS BEETLES (Crioceris asparagi and C. duodecimpunctata) caused economic damage to two 25-acre plantings near Salem on April 22 and May 9 respectively. CABBAGE SEED-POD WEEVIL (Ceutorhynchus assimilis) was extremely abundant in Marion County seed fields in late April. PEA APHID (Macrosiphum pisi) populations built up early on freezing varieties of peas in Washington and Marion Counties in May. Fungus and braconid parasites aided in controlling these high numbers. Lygus spp. presented season-long problems in beets and mint at Milton-Freewater and Hermiston. Over 50 percent of the plantings received one or more control treatments. Lygus on beets and potatoes in Malheur County were also high. Predators, especially lady beetles and lacewings, built up in late summer on these crops. A survey of BEEF LEAFHOPPER (Circulifer tenellus) overwintering adults in Umatilla County wasteland areas during March indicated a high population potential. In May, as first brood leafhoppers developed and migration to the beet fields began, unusually high numbers of leafhoppers were observed. Linear foot samples of leafhoppers in beet fields near Hermiston averaged 5-11 nymphs and 3-7 adults in late May. Considerable virus was reported as the season progressed, particularly in late-planted beet fields. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) populations took a downward trend following an extremely serious outbreak in 1956. First larvae appeared in Malheur County June 2. Approximately 20 percent of acreage in the county was treated for control. BEAN APHIDS were more plentiful than normal, with most fields in the Willamette Valley requiring control during July. GARDEN SYMPHYLID (Scutigerella immaculata), probably the most serious pest of vegetables in Oregon, caused considerable damage to strawberries, corn, beans, mint and other crops. A total of 650 acres of asparagus was destroyed in Polk County by symphylids. CUTWORMS were generally not present in such high numbers as in 1956. Species causing damage to truck crops in Oregon in 1957 were Peridroma margaritosa to table beets in Lane County, Autographa sp. to peas in Washington, Marion and Clackamas during June and, Autographa californica feeding on sugar beet foliage and requiring control in Malheur County in June. Estimates of cutworm damage received from 5 representative counties totaled \$82,000 and savings resulting from cutworm control at \$393,000

Specialty Crops: CRANBERRY GIRDLER (Crambus topiarius), BLACK VINE WEEVIL (Brachyrhinus sulcatus), and the BLACK-HEADED FIREWORM (Rhopobota naevana) caused general damage to cranberry-growing areas in Coos, Curry and Clatsop Counties. Injury usually resulted from failure to follow recommended control practices. A TWO-SPOTTED SPIDER MITE (Tetranychus telarius) infestation on 70 acres of mint

near Hermiston in August caused an estimated 35 percent reduction in yield. Several mint fields in Linn and Marion Counties suffered damage by a cutworm (*Autographa* sp.). Nearly mature larvae suddenly succumbed to a virus infection at the height of the infestation June 28.

Forest, Ornamental and Shade Tree Insects: A PIT-MAKING SCALE (*Asterolecanium minus*) has devitalized and killed white oak trees at several locations in the Willamette Valley. GARDEN SYMPHYLIDS killed or stunted a 5-acre nursery planting of maple seedlings at Gresham. The PEAR LEAF-ROLLING MIDGE (*Dasyneura pyri*) rolled nearly 100 percent of the leaves in a 2-acre nursery planting at Gresham. SOD WEBWORM (unidentified) damage to lawns was reported from many areas. Umatilla County agents observed some lawns completely destroyed and others requiring control measures. ELM LEAF BEETLE (*Galeruceella xanthomelaena*) was more abundant than normal. Many trees in the Salem area were completely skeletonized. The BIRCH LEAF MINER (*Fenusa pusilla*) and the ALDER LEAF MINER (*F. dohrni*) were discovered infesting nursery stock in the East Portland-Gresham area during July. These are new pest records for the State. The BIRCH LEAF MINER caused severe injury to 25-30 thousand seedling trees. The SPRUCE APHID (*Aphis abietina*) extensively damaged Sitka spruce stands at Newport and Gold Beach. This injury was particularly noticeable during June and July. PINE BUTTERFLIES (*Neophasia menapia*) though not causing observable damage, were extremely abundant in the Cascade Mountains from eastern Clackamas County south to the Willamette Pass. Several reports were received of these butterflies flying above Douglas-fir tree tops in September and October. After three successive years of decline, forest insect outbreaks increased from 930,640 acres infested in 1956, to 1,480,640 acres infested in 1957. The BALSAM WOOLLY APHID (*Chermes piceae*) increased in infestation by 233,000 acres, mostly in subalpine fir stands in the Willamette National Forest. SPRUCE BUDWORM (*Choristoneura fumiferana*) infestations, on the decline for two years, increased by 294,840 acres, centered in the central and southwestern Blue Mountains and the Wallowa Mountains. Infestations of the WESTERN PINE BEETLE (*D. brevicomis*) were up 25,120 acres to 39,040 acres and the SPRUCE BUD MOTH (*Zeiraphera ratzeburgiana*) of minor importance in 1956, was up to 46,560 acres of infestation in 1957. This infestation is located primarily on the Siuslaw National Forest. Other major forest pests, except mountain pine beetle and Engelmann spruce beetle, are present in static or declining infestations.

Beneficial Insects: CONVERGENT LADY BEETLES (*Hippodamia convergens*) were present in very large numbers in Medford pear orchards in April. Another LADY BEETLE (*Stethorus punctum*) effectively controlled mite populations building up on caneberries in Linn and Marion Counties about mid-season. Nabids, lacewings and lady beetles were very abundant in Malheur County alfalfa and potato fields, perhaps contributing to the year's comparatively low aphid population. AN ALKALI BEE (*Nomia melanderi*) reached peak emergence in Malheur County July 14-20. Umatilla County peak emergence was reached July 5. Efforts are being made to enlarge and create nesting sites for these bees in eastern Oregon where they are an effective natural pollinator of seed crops. NEMESTRINID FLY parasitism of a general grasshopper infestation in Grant County was low (5-10 percent) during 1956, but a large sarcophagid (possibly *Sarcophaga kellyi*) was extremely abundant and grasshoppers showed reduced egg development during July. A GORSE WEEVIL (*Apion ulicis*), introduced at two sites in Coos County to aid in the control of gorse, were checked during September. These weevils are multiplying but have not moved an appreciable distance from release areas. From mid-May in the Willamette Valley to July in Wallowa and Umatilla Counties, the GOATWEED BEETLES (*Chrysolina* sp.) were showing good weed control. HONEY BEE (*Apis mellifera*) diseases took an upward trend during 1957.

		1956	1957
American Foulbrood	- - - colonies infested	225	434
European Foulbrood	- - - colonies infested	108	162
<hr/>			
Apiaries inspected		958	912
Apiaries infested		94	152

Man and Household Pests: The VARIED CARPET BEETLE (Anthrenus verbasci) and the BLACK CARPET BEETLE (Attagenus piceus) have been reported damaging household fabrics in increasing numbers. TERMITES, especially Reticulitermes hesperus, are a serious problem in most areas of the State. Judging from the number of inquiries received, CARPENTER ANTS (Camponotus sp.) are widespread and destructive in Oregon. ROACHES continue to be a major household pest and, though not the most prevalent species, the BROWN-BANDED ROACH (Supella supellectilium) is appearing at widely scattered locations in the State. FIREBRATS and the SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) are among the most common household pests in Oregon. INDIAN-MEAL MOTH (Plodia interpunctella) has shown up frequently in homes where nuts are stored. CLOVER MITE (Bryobia praetiosa), a GRASS BUG (Arhyssus sp.) and a WEEVIL (Trachyphloeus bifoveolatus) commonly invade Oregon homes.

Stored-Product Pests: No KHAPRA BEETLES have been found. Dermestids collected in stored grain establishments were predominantly in the genera Anthrenus and Attagenus. The LESSER GRAIN BORER (Rhyzopertha dominica) was found at additional locations in the Willamette Valley. Many other common species of stored-grain pests were observed during the khapra beetle survey. Western Oregon generally had the greater number of infestations due to climatic conditions favorable for insect development.

SUMMARY OF INSECT CONDITIONS - 1957

NEW MEXICO

Reported by John J. Durkin

Highlights: Cotton suffered more from insect attack than any other crop. COWPEA APHID started damaging cotton as soon as it germinated. The aphids reduced stands and slowed down the young cotton seedlings by causing extensive damage to the terminal buds. LYGUS BUGS caused heavy square drop during the early fruiting period. BOLLWORMS moved into cotton in early July to begin one of the worst bollworm outbreaks most farmers had ever experienced. COTTON LEAFWORM also broke all previous records by causing heavy damage in all cotton-growing areas. SPIDER MITES and COTTON APHIDS were heavy in several areas. Before severe rain, hail and snow storms struck just before and during harvest it was estimated that insects destroyed approximately 180,000 bales of cotton. Costs of control and cotton losses to insect damage amounted to about \$14 million. Fruit growers suffered moderate to heavy losses from CODLING MOTH damage. A long, drawn-out spring caused codling moth emergence to span a long period of time and following generations over-lapped to give a continuous peak of codling moth activity which made control very difficult. MCDANIEL MITES caused extensive damage to trees in many areas. And a LEAF ROLLER, as yet unidentified, caused extensive damage to the fruit just prior to and during harvest in the Albuquerque area. SPOTTED ALFALFA APHID was generally light with only spotty heavy outbreaks centered mostly in the Pecos River Valley around Carlsbad and Roswell. Damage and cost of control is estimated at about one-third of last year's loss or about \$1 million. Spotted alfalfa aphid parasites were released and Praon palitans was established in several fields in Dona Ana and Luna Counties.

GRASSHOPPERS on range and crop lands did not develop to the extent that they have in previous years. The fall adult survey indicates that only $\frac{1}{2}$ million acres will be infested in 1958 compared with $2\frac{1}{2}$ million acres in 1957. Approximately 120,000 acres of rangeland were sprayed in 1957 compared with 671,617 acres in 1956. An APHID (Asiphonella dactylonii) was collected from Bermuda grass in Las Cruces. This was the first record of this aphid in North America. BEE T WEBWORM was extremely numerous on rangeland and in some towns. It caused very

little damage to vegetation but was a nuisance around homes. The adults were also a nuisance for several nights in many towns in central and southern New Mexico. The common black CALOSOMA was also very numerous and was quite a nuisance on brightly-lighted streets and business establishments in many cities in the southern half of the State.

Cereal and Forage Insects: SPOTTED ALFALFA APHID (Therioaphis maculata) was generally light with scattered heavy infestations in Eddy and Chaves Counties. Most activity was confined to May, June, and July. Fall infestations were very light with only occasional fields needing treatment. PEA APHIDS (Macrosiphum pisi) in alfalfa were general but light during early spring. LYGUS BUGS (Lygus elisus and L. hesperus) were medium to very heavy in alfalfa during the summer in the southern half of the State. Alfalfa seed yields were very low as a result of lygus bug damage. ARMYWORM (Pseudaletia unipuncta) and VARIEGATED CUTWORM (Peridroma margaritosa) were heavy but spotty in alfalfa in the Las Cruces area. ARMY CUTWORM (Chorizagrotis auxiliaris) was heavy on alfalfa in Mora County. THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) was very heavy in spotty infestations in alfalfa in Dona Ana, Luna, Grant and Eddy Counties. A GRASS MITE (Oligonychus stickneyi) caused damage to corn in Dona Ana and Torrance Counties. SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) caused heavy damage to corn in Quay, Curry, Roosevelt, and Luna Counties. Infestations were light but general in sorghum. They also damaged popcorn and broomcorn in some areas. CORN EARWORM (Heliothis zea) was heavy in popcorn and field corn throughout the State. Many fields averaged 85 to 90 percent loss. FALL ARMYWORM (Laphygma frugiperda) was light and spotty in corn and sorghum in most areas. GREENBUG (Toxoptera graminum) was generally light on small grains with spotty medium to heavy infestations in Dona Ana, Catron, Quay, and Eddy Counties. SAY STINK BUG (Chlorochroa sayi) was heavy in many fields of wheat and barley in several counties. CORN LEAF APHIDS (Rhopalosiphum maidis) were light to heavy on heads of sorghum in Lea County and on field corn and broomcorn in Quay and Curry Counties. A FALSE CHINCH BUG (Nysius raphanus) was very heavy on sorghum heads in Roosevelt, Curry, and Chaves Counties. Damage was light to medium.

Rangeland Pests: HARVESTER ANTS (Pogonomyrmex barbatus fuscatus and P. occidentalis) were extremely numerous and caused severe damage to range land in many areas throughout the State. GRASSHOPPERS were a problem on approximately 500,000 acres of rangeland. A WEEVIL (Ophryastes vittatus) damaged range grass in a small area of Harding County.

Fruit Insects: CODLING MOTHS (Carpocapsa pomonella) caused heavy, spotty damage in Lincoln, Rio Arriba, Santa Fe, San Juan, Chaves, Grant, Sandoval, and Bernalillo Counties. Emergence of the first brood was prolonged by an unusually long, cool spring and the second and third broods emerged continuously from mid-July until early September. One orchard in Grant County had 75 percent of the apples damaged. In many other areas damage varied from 5 to 35 percent. ORCHARD MITES (Tetranychus mcDanieli and Bryobia praetiosa) caused light to heavy damage depending on control measures. Heaviest infestations were in Lincoln, Rio Arriba, Santa Fe, Chaves, and San Juan Counties. WOOLLY APPLE APHIDS (Eriosoma lanigerum) were generally light with spotty heavy infestations in Rio Arriba, Lincoln, and Santa Fe Counties. SAN JOSE SCALE (Aspidiotus perniciosus) increased greatly and caused moderate to heavy damage to fruit in apple orchards in Rio Arriba and Santa Fe Counties. FRUIT TREE LEAF ROLLER (Archips argyrospila) was light to medium in unsprayed orchards early in the season in Taos, Rio Arriba and Santa Fe Counties. TENT CATERPILLARS (Malacosoma sp.) were also a problem in unsprayed orchards. SHOT-HOLE BORER (Scolytus rugulosus) adults caused moderate damage to apple trees in one orchard in Santa Fe County by attacking the axillary buds on the twigs. GRAPE LEAFHOPPERS (Erythroneura sp.) caused heavy damage to grapes in home gardens and untreated vineyards in Dona Ana, Eddy, Chaves and Bernalillo Counties. WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) was light with a few heavy infestations on home plantings in Dona Ana County. BLACK MARGINED APHID (Monellia costalis) and BLACK PECAN APHID (Melanocallis caryaefoliae) were medium to heavy on pecans in the spring in Dona Ana and Eddy Counties. Adult of A BUPRESTID (Psiloptera drummondii)

damaged pecan terminals in Dona Ana County.

Truck Crop Insects: TOMATO FRUITWORM (Heliothis zea) was heavy on tomatoes in Dona Ana, Luna, and Lea Counties. TOMATO HORNWORM (Protoparce quinquemaculata) caused light to heavy damage to tomatoes in Dona Ana, Luna, and Lea Counties depending on control measures. COWPEA APHID (Aphis medicaginis) was heavy on seedling tomatoes and chile in Dona Ana County. CABBAGE LOOPER (Trichoplusia ni) caused heavy damage to spring lettuce in Eddy, Dona Ana and Valencia Counties. Fall lettuce was also damaged but most growers were able to keep the pest under control. ONION THRIPS (Thrips tabaci) were medium to heavy on onions in Dona Ana County. Most growers used controls. MEXICAN BEAN BEETLE (Epilachna varivestis) was heavy on beans in Torrance County, as much as 50 percent of the crop was destroyed.

Cotton Insects: SEED-CORN MAGGOT (Hylemya cilicrura) caused severe loss of stands in spotty infestations in Dona Ana, Lea and Eddy Counties. COWPEA APHID (Aphis medicaginis) was heavy and caused damage in many fields in Dona Ana, Hidalgo, Luna, and Eddy Counties. THRIPS (Thrips tabaci and Frankliniella sp.) were generally light with medium to heavy infestations in Dona Ana, Eddy, and Luna Counties. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) and DESERT SPIDER MITE (T. desertorum) were light to heavy but very spotty throughout the cotton growing areas. LYGUS BUGS (Lygus elisus and L. hesperus) and COTTON FLEAHOPPER (Psallus seriatus) caused extensive damage to cotton throughout most of the early fruiting period. BOLLWORM (Heliothis spp.) infestations were generally medium to heavy in all cotton-growing areas. The first damaging infestations appeared about a week earlier than normal and many growers failed to get insecticides applied in time to prevent heavy damage. COTTON LEAFWORM (Alabama argillacea) invaded cotton throughout the State two to three weeks earlier than usual. Many areas, where leafworms are seldom, if ever, a problem, were severely damaged. COTTON SQUARE BORER (Strymon melinus) was light and spotty in Dona Ana and Lea Counties. PINK BOLLWORM (Pectinophora gossypiella) attacked cotton in most cotton-growing areas. All infestations were light and only detected by lint cleaner inspections with the exception of those in southern Dona Ana County. Approximately 200 acres of cotton in this county were slightly to severely damaged. Infestations were spotty and widely scattered.

Ornamental and Shade Tree Insects: CALIFORNIA PRIONUS (Prionus californicus) was abundant in willows and Chinese elms in the southern half of the State. Larvae of HORNET MOTH (Aegeria apiformis) damaged many young poplars in Eddy County. BARK BEETLES (Ips confusus and Pityophthorus sp.) damaged pinon pines in Santa Fe County. A BUPRESTID (Psiloptera drummondii) adults damaged pecan trees in ornamental plantings in Dona Ana County by clipping off terminal growth. A BAGWORM (Oiketicus townsendi) was heavy on ornamental juniper, elm, ash, locust and willow in Chaves and Curry Counties. FALL WEBWORM (Hyphantria cunea) attacked pecans, poplars, elms and other ornamental trees in spots over the State. COWPEA APHID was heavy on many ornamental shrubs and trees. AN APHID (Cinara winonkae) was light to medium on most arborvitae during the spring. ROSE APHID (Macrosiphum rosae) was heavy on roses throughout the State during the early spring. A WOOLLY APHID (Eriosoma crataegi) was heavy on pyracantha in Las Cruces. ELM LEAF APHID (Myzocallis ulmifolii) was heavy on American elms in early summer. - Larvae of SUNFLOWER MOTH (Homocidoma electellum) damaged calendula, shasta daisy, marigold, and chrysanthemums in Las Cruces. A NITIDULID (Conotelus mexicanus) damaged roses and chrysanthemums in many areas of the State. APHIDS (numerous species) were light to heavy on most annual flowers. AN APHID (Asiphonella dactylonii) heavily infested four Bermuda grass lawns in spots in Las Cruces but damage was light. A larva of A BILLBUG (Calendra phoenicisensis) damaged Bermuda grass lawns in Dona Ana County. A WEBWORM (Acrolophus sp.) damaged one Bermuda grass lawn in Las Cruces. WHITE GRUBS (Phyllophaga spp.) damaged lawns in Albuquerque and other cities. A MITE (Oligonychus pratensis group) damaged many Bermuda grass lawns in Las Cruces. MITES (Tetranychus telarius, T. cinnabarinus, T. desertorum and T. canadensis) damaged ornamentals in the southern and central areas of the State.

Insects Affecting Man and Animals: HORN FLY (Siphona irritans) was extremely numerous throughout the State on range cattle. Infestations on dairy and feed lot cattle were light to medium depending on controls. HOUSE FLY (Musca domestica) was a problem throughout the summer around dairies, poultry houses and in cities. Fly populations in Las Vegas were serious, which is unusual. SCREW-WORM (Callitroga hominivorax) was severe on sheep and cattle in San Miguel and Santa Rosa Counties. Infestations on cattle in Chaves and Lincoln Counties were light but persistent. CATTLE LICE (Bovicola bovis and Haematopinus eurysternus) were prevalent on cattle during the cool months. CATTLE GRUBS (Hypoderma lineatum and H. bovis) infested cattle throughout the State. SHEEP BOT FLY (Oestrus ovis) infested an estimated 90 percent of the sheep in New Mexico. SHEEP KED (Melophagus ovinus) infested most sheep in the State. Infestations ranged from light to heavy depending on control. BROWN DOG TICK (Rhipicephalus sanguineus) was a problem on dogs and in homes in several areas. EAR TICK (Otobius megnini) was reported on dogs in several areas. A BLOOD-SUCKING CONENOSE BUG (Triatoma sp.) was reported attacking people in several towns throughout the State. FALSE CHINCH BUGS (Nysius spp.) were a nuisance in Rio Arriba, Chaves, and Curry Counties. CLOVER MITE (Bryobia praetiosa) was a nuisance around homes. Infestations were spotty throughout the State. A GROUND BEETLE (Calosoma semilaeve) was a nuisance around motels and other business establishments in the southern half. Larvae and adults of BEEBEE (Loxostege sticticalis) were a nuisance in several towns throughout the State. ORIENTAL COCKROACH (Blatta orientalis), BROWN-BANDED ROACH (Supella supellectilium), and GERMAN ROACH (Blattella germanica) infested many homes and stores throughout the State.

Stored-Product Insects: HIDE BEETLES (Dermestes maculatus and D. caninus) infested and severely damaged sheep hides in Las Vegas. One KHAPRA BEETLE (Trogodema granarium) was found in a farm-ranch storage building in Roosevelt County. The property was fumigated. SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), CADELLE (Tenebroides mauritanicus), CONFUSED FLOUR BEETLE (Tribolium confusum), RICE WEEVIL (Sitophilus oryza) and GRAIN MITE (Acarus siro) were among the most common insects found in stored grain in the State.

Miscellaneous Insects: WHITE-LINED SPHINX (Celerio lineata) larvae were very numerous on rangeland and on highways in scattered areas throughout the State.

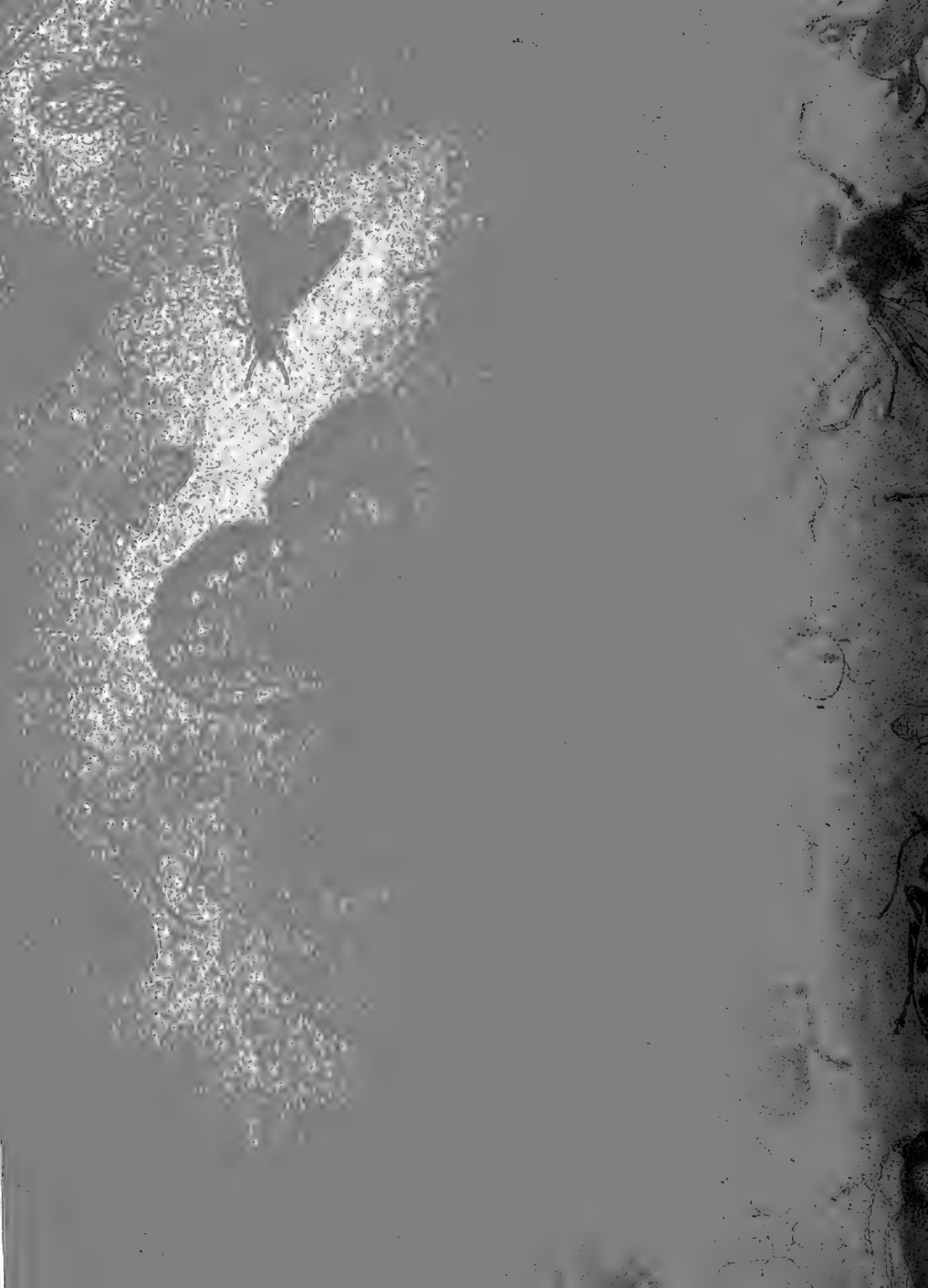
Weather continued

A second storm moving out of the northern Gulf of Mexico on the 24th, and reaching southeastern Virginia on the 25th and southern New England on the 26th where it remained at the end of the week, produced from 1 to over 2 inches of rain along both the Gulf and Atlantic Coasts and somewhat lighter amounts in other areas east of the Mississippi. As this storm moved across Georgia on the 24th a tornado occurred at Cochran, injuring 12 persons and causing property losses preliminarily estimated at \$300 thousand. Snow and sleet fell as far south as northern portions of Louisiana and Mississippi.

Rainfall for January already totals 8.68 inches at Boston, Mass., the greatest January total there in 122 years. Several points in southern Florida also reported their wettest January on record.

Precipitation was again light in the western Great Plains, and although moisture conditions are generally good there, more would be beneficial in scattered sections.

West of the Continental Divide, measurable precipitation in virtually all areas during the closing days of the period provided needed soil moisture in parts of southern California and in Nevada, and increased mountain snow depths. In the Pacific States, abnormally warm weather for the past 3 weeks has stimulated early growth of many plants, thus making them more vulnerable to a sudden freeze. (Summary Supplied by U. S. Weather Bureau).



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FEBRUARY 7, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BOLL WEEVIL hibernation surveys show counts about the same as last year in Georgia but higher in Hope, Arkansas, area. (p. 89).

CATTLE GRUB populations slightly lower than last year in Arkansas. Larvae taken from child in Georgia. (p. 90).

STORED-GRAIN INSECT survey in Oklahoma. (p. 90).

Spread of SPOTTED ALFALFA APHID in the United States. (p. 92).

SUMMARY OF INSECT CONDITIONS - 1957 - Georgia (p. 93), South Carolina (p. 96), Vermont (p. 100).

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

WEATHER BUREAU 30-DAY OUTLOOK

MID-FEBRUARY TO MID-MARCH 1958

The Weather Bureau's 30-day outlook for February calls for temperatures to average above seasonal normals over the northeast quarter of the nation. Above normal temperatures are also expected in the South Atlantic States, where January was unseasonably cold. Over the southwest quarter below normal temps. are expected to prevail, except for above normal along the west coast. Near normal averages are indicated in the remainder of the country. Precipitation is predicted to exceed normal over most of the nation, except for subnormal amounts over the Southern Plains and near normal in states bordering the Gulf of Mexico.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING FEBRUARY 3

A weekend storm system, which produced moderate to heavy snow from Missouri to Maine and was followed by freezing deep into Florida, featured the week's weather. This storm appeared over the lower Great Plains on January 31 when 4 to 10 inches of new snow fell in northeastern Missouri and from St. Louis, Mo., eastward across Illinois. It reached the Carolinas on February 1, leaving 1 to 3 inches of snow in eastern Kentucky and northeastern Tennessee, and continued northward along the Atlantic coast during the remainder of the period. More than a foot of new snow fell in the central Appalachians, 7 to 10 inches were measured in the vicinity of Atlantic City, N. J., 3 to 4 inches in the vicinities of Pittsburgh and Philadelphia, Pa., and 6 and 7 inches at Block Island, R. I., and Nantucket, Mass., respectively. Most of this snow remained on the ground at the end of the period. As a cold air mass moved in behind the storm, temperatures fell to subzero levels in the Dakotas, Minnesota, Iowa, and adjacent areas of Nebraska, Missouri, Illinois, and Wisconsin, and to subfreezing levels to southern Florida. Moisture for the week totaled one-half inch or more only in the Ohio Valley, the lower Appalachian region, along the north Atlantic coast, in northern portions of New York and New England, and in the Pacific States. Precipitation was very light in the remainder of the country. More moisture would be beneficial in the western Great Plains where some soil blowing was reported again last week, but from the lower Mississippi Valley to the Atlantic coast more dry weather is needed as soil moisture there remains excessive in many areas due to previous precipitation. Temperatures for the week averaged well below normal in the Southeast and well above elsewhere, with extreme departures ranging from 9° below normal in southern Florida to 12° above at several stations along the Canadian Border. The weather for the winter of 1957 and 1958 on the basis of temperature and precipitation has shown marked persistence. Average temperatures for both December and January have averaged well below normal in the Southeast, particularly Florida, and unusually mild elsewhere. Precipitation for both months has been generous in the Pacific States and east of the Mississippi River, and light to very light elsewhere, notably so in the western Great Plains. Major freezes in Florida this winter, prior to this morning's have occurred December 1-6, 12-13, and January 9-11, 17-19. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum)-OKLAHOMA - Scattered infestations of 50-500 per linear foot in wheat and barley in Hennessey area, Kingfisher County. A small percent were dead but apparently not parasitized. (Wood).

PEA APHID (Macrosiphum pisi)-OKLAHOMA - Nymphs beginning to appear in Stillwater area, Payne County. (Bieberdorf).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - No significant population fluctuations were noted in 292 samplings taken in the Stillwater area during the week ending January 25. (Bieberdorf). Low numbers continue throughout the State, with increasing numbers, 0-30 per plant, noted in Tillman County. (Coppock).

APHIDS - ARKANSAS - Only light infestations observed on oats. (Boyer).

FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Reported heavy on cherry at Chico, Butte County. (Cal. Coop. Rept.).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Reported heavy from orange in San Jose, Santa Clara County, and in Sacramento, Sacramento County. Reported light on orange in Fresno, Fresno County. (Cal. Coop. Rept.).

TRUCK CROP INSECTS

A LEAF ROLLER (Clepsis peritana) - CALIFORNIA - A heavy infestation reported damaging strawberry fruit and crowns at Glendora, Los Angeles County.

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Inspections of 9 lint cleaners and 2 gin stands in McCurtain, Choctaw, Bryan, Johnston and Tillman Counties, January 7-27, recovered 24 larvae, all counties being positive. (Fed.-State PBW Comm.).

BOLL WEEVIL (Anthonomus grandis) - GEORGIA - Fall examinations made of woods surface trash in 4 regions December 2-11, averaged 2,081 live weevils per acre, which is higher than the seven year average of 1,300 but about the same as a year ago when the average was 1,936 weevils. Area averages for 1957 and 1956 were northwest (Gordon County), 1,113 and 2,904; north central (Spalding and Pike Counties) 5,034 and 2,299; east central (Burke County) 1,791 and 774; and south (Tift County) 387 and 1,355. A total of 5 samples, or 90 square feet, were taken from each of 40 farms. Live weevils were found on 70 percent of the farms examined. The maximum number of weevils per acre found on a single farm was 13,552 in Spalding County. (Beckham, Morgan). ARKANSAS - Trash samples for hibernation studies were taken in two areas in November and December 1957. The McGehee area (southeast) averaged 1,786 weevils per acre for 31 samples taken. No comparison can be made as this is a new area. (Lincoln, Moore, Boyer). In the Hope area (southwest) 23 samples gave an average of 3,472 weevils per acre compared with 1,398 weevils for December 1956. (Leigh, Black).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

TURPENTINE BEETLES - ARKANSAS - Activity reported in Nevada County. (Boyer).

FULLER ROSE BEETLE (*Pantomorus godmani*) - CALIFORNIA - Larvae reported as heavy in soil at Oakland, Alameda County. (Cal. Coop. Rept.).

HOLLY LEAF MINER (*Phytomyza* sp.) - VIRGINIA - Damaging leaves of American holly trees in Gladys, Campbell County. (Morris).

YELLOW SCALE (*Aonidiella citrina*) - CALIFORNIA - Medium infestation reported from Mahonia in Sacramento, Sacramento County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.) - UTAH - Coming to backs of cattle during recent weeks, eastern Millard County. Some emergence has now occurred. (Knowlton). ARKANSAS - The annual cattle grub survey made the week of January 20 averaged 2.24 grubs per head for 474 head examined. This is slightly lower than the 2.27 average for January 1957, and much lower than the 8.48 average for January 1956. The 1958 survey included 5 counties also surveyed the previous 2 years. Low numbers of grubs in cattle in the low, wet delta section of the eastern part of the State may have been due to wet soil conditions in spring seasons. (Lancaster, Boyer). GEORGIA - Immature larvae infesting lymph node of 10 year old boy, Harris County, January 23. Det. E. E. Bennington. (CDC Ent. Mus.). OKLAHOMA - Averaged 11.4 in 29 yearling heifers, 11.3 in 21 two-year old heifers, 6.8 in 18 three-year old cows, 4.4 in four-year old cows and 1.6 in 31 nine-year old cows at Fort Reno, Canadian County, on January 23. Counts in Harper County averaged somewhat higher. (Allison).

CATTLE LICE - UTAH - Serious in several localities, Millard County. (Knowlton). MARYLAND - Infesting Hereford cattle at Darlington, Harford County. (U. Md., Ent. Dept.).

Screw-Worm Eradication in the Southeast: The U. S. Department of Agriculture, Agricultural Research Service and Animal Disease Eradication Division, in cooperation with the Florida State Livestock Sanitary Board, are releasing sterilized screw-worm flies across the State of Florida. This program, at the present time, is in a testing and training stage. (Denmark).

TROPICAL RAT MITE (*Ornithonyssus bacoti*) - TENNESSEE - Biting humans in a private home, Davidson County, January 20. Det. H. D. Pratt. (CDC Ent. Mus.).

COCKROACHES - UTAH - Seriously infesting an apartment building in Brigham City. (Knowlton).

STORED-PRODUCT INSECTS

A DERMESTID (*Perimegatoma vespulae*) - CALIFORNIA - Reported from Courtland, Sacramento County, making the seventh record for the State and the first for the county. (Cal. Coop. Rept.).

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) - VIRGINIA - Found in various kinds of nut meats received from foreign countries in vacuum-sealed cans. Getting into candy in a Roanoke County business firm. (Amos, Allen).

Stored-grain Insect Survey in Oklahoma: A total of 44 samples of farm-stored grain, representing all sections of the State, were collected the week of January 9 by Oklahoma State University students in entomology. Sample size was approximately 50 cubic inches. Percent of samples infested by various insects were Cadelle larvae, 79; flat grain beetle, 77; rice weevil, 75; dermestids, 66; lesser grain borer, 66; red flour beetle, 41; saw-toothed grain beetle, 34; cowpea weevil, 29; braconid parasites, 27; psocids, 25; window pane fly larvae, 14; grain mites, 11; spider beetles, 9; Angoumois grain moth, 7; pseudoscorpions, 7; and corn sap beetle, 2. (Fenton).

MISCELLANEOUS INSECTS

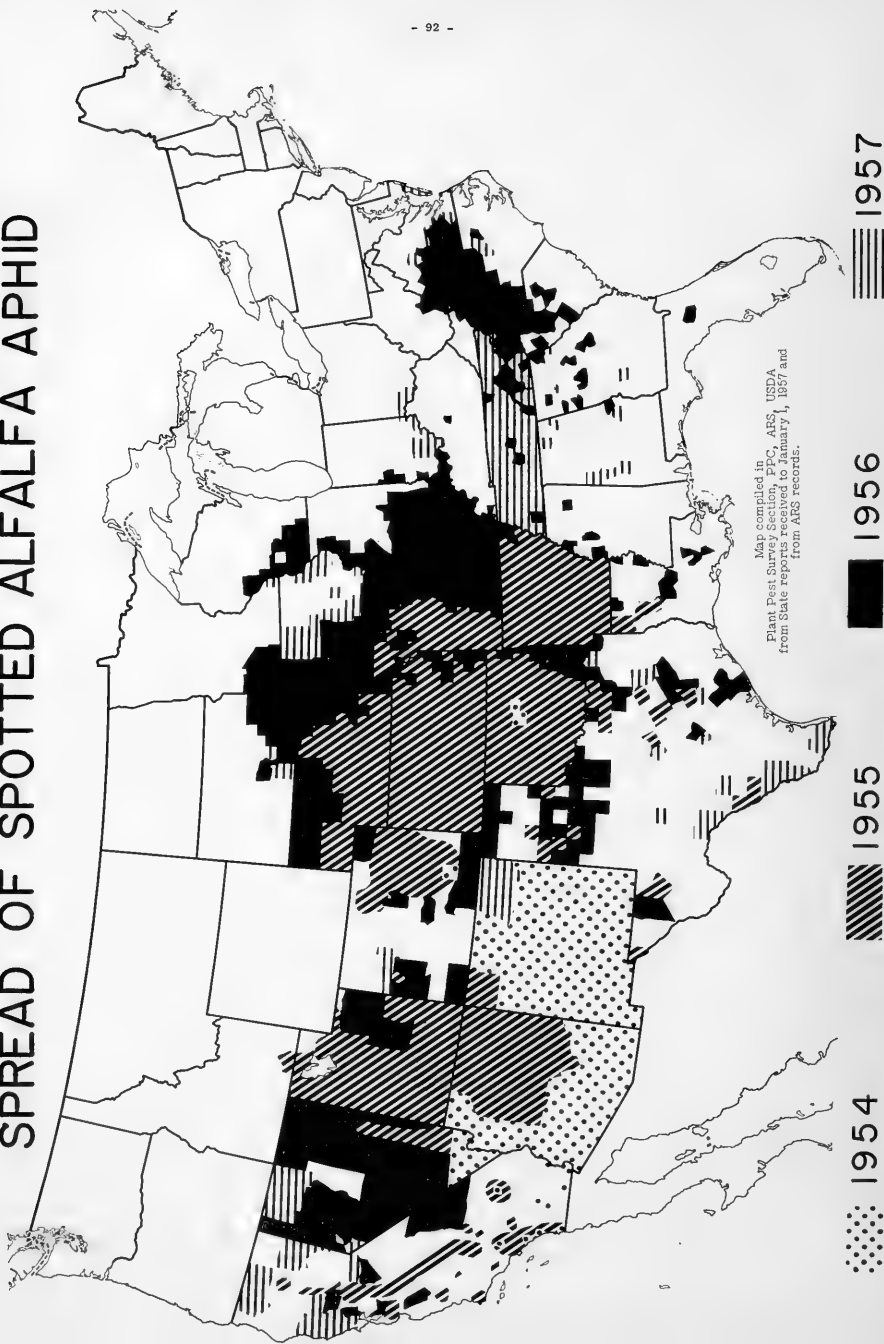
IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Adults collected at Paxton, January 20, and at 3 different areas near Liberty, January 21. Both locations in Walton County. (Dickinson).

A MITE (Aceria ajugae) - CALIFORNIA - Taken in several locations in Los Angeles County and also in Sacramento in light to medium infestations. (Cal. Coop. Rept.).

LIGHT TRAPS

SOUTH CAROLINA - One adult of Peridroma margaritosa was caught in the light trap at Charleston for the week ending February 2. (Reid). No catch at Clemson light trap for week ending January 31. (McAlister)

SPREAD OF SPOTTED ALFALFA APHID



SUMMARY OF INSECT CONDITIONS - 1957

GEORGIA

Reported by W. C. Johnson

Highlights: SPOTTED ALFALFA APHID infestations increased from 25-50 per 100 sweeps in 1956, to as many as 15,000 per 100 sweeps in 1957. In most areas the infestations were kept low by natural enemies. BILLBUGS caused more damage to corn than in recent years. The infestations were mostly in middle and southern areas. HESSIAN FLY, which normally does not cause a great deal of damage, was general over south Georgia, however, heavy damage was of a local nature. GRAPE COLASPIS damage was severe but local on peanuts in Seminole County. SPITTLEBUGS caused moderate to heavy damage to Coastal Bermuda in several southern counties. VELVETBEAN CATERPILLAR was a serious problem on peanuts and soybeans. A GRASSWORM (*Mocis* sp.) was heavy on millet and Coastal Bermuda. SORGHUM WEBWORM was widespread but caused light to moderate damage. CORN EARWORM infestations were much lighter than usual, with sweet corn suffering most. The peach crop was the cleanest, from the standpoint of PLUM CURCULIO, in forty-one years of peach work by veteran entomologist O. I. Snapp. The PEACH TREE BORER continues to be the number one peach insect in the State. Most APPLE INSECTS were more numerous in 1957 than any year since 1950. MEXICAN BEAN BEETLE caused severe damage to velvetbeans, bunch and pole beans. TOBACCO BUDWORM was not as severe on tobacco as in 1956. Infestations were light to heavy, and in many instances, were carried from the plant bed to the field. STINK BUG infestations were light to heavy over the tobacco area, however, most heavy damage was local. BOLL WEEVIL infestation was heavy and approximated infestation of 1956. The 1957 fall trash counts averaged 2,081 live weevils per acre compared with 1,936 weevils per acre in 1956. SPIDER MITE infestations were generally heavy throughout the State. COTTON LEAFWORM infestations were heavy, but beneficial. ELM SPANWORM defoliated large areas of hardwood in northern regions. BAGWORM infestations were heavy and widespread over the State, mostly infesting arborvitae. IMPORTED FIRE ANT is known to be infesting thirty-four counties with an infested acreage of 400,000. In 1956, it was generally agreed that approximately 75,000 acres were infested. SCREW-WORM infestations were heavy on livestock throughout the State. In the Athens area, there was an infestation as early as mid-May, which is rather unusual. ALMOND MOTH infestations in stored peanuts were moderate to heavy. FLEAS were abundant over the State.

Cereal and Forage Insects: (Reported by E. W. Beck, H. H. Tippins, C. C. Blickenstaff, and W. C. Johnson.) GRASSWORM (*Mocis* sp.) activity started about July 20, with a rapid rise in adult numbers in the light traps at the Georgia Coastal Plain Experiment Station, Tifton. This initial flight caused a heavy larval infestation in millet on Experiment Station grounds, which continued into September. Heavy moth flights continued throughout August and September, with peak flight on September 30. The fall brood of the LUPINE MAGGOT (*Hylemya lupini*) first appeared the latter part of October on lupine at Tifton. Peak egg laying occurred the first part of November, with intermittent egg laying continuing to the end of December, causing overlapping of generations, so that some maggots, ranging from newly hatched to fully grown, occurred in the lupine throughout the season. Moths of the VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) were first taken in the light trap collections in late July. Heavy flights of moths occurred the last two weeks in August, followed by a heavy larval infestation on soybeans the first part of September. The moths reappeared in late September and early October in even greater numbers in light trap collections. These peaked at 1,761 for three nights the week of September 14 to 20, and 2,001 moths for three nights between September 28 and October 4. Heavy infestations occurred on peanuts, with considerable damage to late maturing varieties. BILLBUG (*Calendra* sp.) infestations were heavy on corn, however, the acreage was not large as compared with the total corn acreage. Forty-six county agents reported 16,476

acres infested, and 38 county agents reported no damage to their knowledge. The total corn acreage in 1957 was 2,738,000 acres. HESSIAN FLY (*Phytophaga destructor*) infestations were light to heavy, most heavy damage not widespread. A SPITTLEBUG (*Tomaspis bicincta*) caused some heavy damage to Coastal Bermuda. SUGARCANE BEETLE (*Euethoela rugiceps*) caused extensive damage to several fields in Tift County during April and early May. Two fields were observed in which the plant stand was completely destroyed. Heavy but local infestation of GRAPE COLASPIS (*Colaspis* sp.) on peanuts in Seminole County. Infestations of CHINCH BUGS (*Blissus leucopterus* and *B. l. insularis*) on St. Augustine grass were heavy and numerous. FALL ARMYWORM (*Laphygma frugiperda*) infestations were lighter on corn but moderate to heavy on millet, grain sorghum and small grain. MEXICAN BEAN BEETLE (*Epilachna varivestis*) caused moderate to heavy damage to velvetbeans. CABBAGE LOOPER (*Trichoplusia ni*) infestations were heavy on peanuts and soybeans. RED-NECKED PEANUTWORM (*Stegasta basqueella*) infestations were moderate to heavy. The SORGHUM WEBWORM (*Celama sorghiella*) was abundant and caused light to moderate damage to sorghum heads. CORN EARWORM (*Heliothis zea*) caused an average weight loss of 3.9 percent to field corn, as determined by a survey of 98 fields in two areas in south Georgia. This is thought to be less damage than occurred during any of the three previous years. RICE WEEVIL (*Sitophilus oryza*) in the same fields averaged 27.8 percent of the ears infested in September. LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) was much less destructive in 1957 than in 1956, on soybeans and peanuts.

Fruit and Nut Insects: (Reported by Oliver Snapp, M. R. Osburn, Jack Taylor and W. C. Johnson.) PLUM CURCULIO (*Conotrachelus nenuphar*) infestation was generally very light in 1957 and very much less than that of an average year. The 1957 peach crop was perhaps the cleanest on record. Only two cases of curculio "wormy" peaches were reported during the season. The hibernating adult population in the Peach Belt in the winter of 1957-58 is very light. PEACH TREE BORER (*Sanninoidea exitiosa*) continues to be the number one peach problem in the State. Infestation is very heavy in some orchards in Fort Valley, and much damage to the trees has been caused by the insect. The increased infestation is believed to be due largely to the use of and dependence on trunk sprays, which are less effective than fumigant-type treatments in heavily infested orchards, in latitudes where the insect has a long oviposition period. A female moth was observed in a commercial peach orchard at Fort Valley, April 25, 1957. This is the earliest record of borer emergence in Georgia, and reveals the long egg-laying period of the insect in this locality, as female moths usually begin to deposit eggs on the day they emerge. Eggs have been known to hatch as late as December 9, at Fort Valley. The LESSER PEACH TREE BORER (*Synanthedon pictipes*) infestation continues heavy in a number of orchards, especially where there are winter-injured trees and in neglected orchards. The SHOT-HOLE BORER (*Scolytus rugulosus*) infestation continues heavy in devitalized, weak or diseased trees and in neglected peach orchards. SUCKING BUGS (coreids and stink bugs) - Stink bugs and other catfacing insects were not as abundant in 1957 as in 1956. The general SAN JOSE SCALE (*Aspidiotus perniciosus*) infestation in 1957 was heavier than usual. ORIENTAL FRUIT MOTH (*Grapholitha molesta*) infestation was very light at Fort Valley in 1957. FULLER ROSE BEETLES (*Pantomorus godmani*) were jarred from peach trees as early as February 7. SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) adults appeared on peach trees as early as February 7. FALL WEBWORM (*Hyphantria cunea*) infestation on pecan trees was heavier than that of an average season. The first nests of the season were observed on pecan trees on June 10, which was unusually early and may have been an indication of a heavy infestation by early fall. Heavy infestations of the FALL WEBWORM and the WALNUT CATERPILLAR (*Datana integerrima*) were common throughout the State. The HICKORY SHUCKWORM (*Laspeyresia caryana*) continued to be important where there was a nut crop. Generally, the PECAN WEEVIL (*Curculio caryae*) was not as serious as in the past. The PECAN NUT CASEBEARER (*Acrobasis caryae*) was more prevalent in south Georgia than usual.

Other insects and mites which sometimes attack pecan were not of especial importance during 1957.

Truck Crop Insects: (Reported by C. M. Beckham, Jack Taylor, Loy Morgan and W. C. Johnson.) MEXICAN BEAN BEETLE (Epilachna varivestis) infestations were heavy on bunch, lima and pole beans, as well as crowder and field peas. This was the heaviest infestation of this pest in several years. VEGETABLE WEEVIL (Listroderes costirostris obliquus) infestations were heavy on crucifers over the State, with one heavy infestation being reported on onions. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) infestations on field peas were moderate. COWPEA CURCULIO (Chalcoedermus aeneus) infestations were heavy on field peas. LEAF-FOOTED BUG (Leptoglossus phyllopus) infestations were moderate to heavy on tomato and pimiento pepper. CABBAGE APHID (Brevicoryne brassicae) infestations were moderate to heavy on cabbage, however, damage was not great. SOUTHERN GREEN BUG (Nezara viridula) and BROWN STINK BUG (Euschistus servus) were light to moderate on tomato, whereas a year ago they caused serious losses to farmers. TOMATO HORNWORM (Protoparce sp.) infestations on tomatoes were light. TOMATO FRUITWORM (Heliothis zea) infestations on tomatoes were light. CORN EARWORM was a problem on untreated sweet corn. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) infestations were moderate to heavy on tomatoes and potatoes.

Cotton Insects: BOLL WEEVIL (Anthonomus grandis) infestations were heavy throughout the State. It was not uncommon to find fields with 85 percent punctured squares even before migration began. The fall, 1956, trash examinations averaged 1,936 weevils per acre, compared with 2,081 per acre in 1957. There were 1,036, or 54 percent, of the 1,936 weevils per acre to survive the winter. COTTON APHID (Aphis gossypii) infestations were moderate to heavy and generally heavier than in 1956. SPIDER MITES (Tetranychus spp.) were a problem on most cotton fields. Infestations were mostly moderate to heavy. THRIPS (Frankliniella sp.) infestation were light to moderate. BOLLWORM (Heliothis zea) was moderate to heavy. There were two distinct periods when infestations were heavy, which were at squaring and late season. CABBAGE LOOPER (Trichoplusia ni) infestations were light to heavy with most infestations light. PALE STRIPED FLEA BEETLE (Systema blanda) infestations were light. COTTON LEAFWORM (Alabama argillacea) infestations were heavy, however, the insects came at a time when they were beneficial in defoliating the cotton. The three most injurious insects of cotton, in their importance are boll weevil, bollworm and spider mites, although aphids are very nearly equal to mites in importance.

Forest and Ornamental Insects: (Reported by Gerald Smith, Dorsey Dyer and Staff, and W. C. Johnson.) BLACK TURPENTINE BEETLE (Dendroctonus terebrans) infestations were moderate to heavy but seem to be declining. PINE ENGRAVER (Ips pini) was locally heavy. NANTUCKET PINE MOTH (Rhyacionia frustrana) infestations were heavy and appear to be getting more serious each year. ELM SPANWORM (Ennomos subsignarius) was a serious pest of hardwood in north Georgia. RED-HEADED PINE SAWFLY (Neodiprion lecontei) infestations were scattered and generally light. BAGWORM (Thyridopteryx ephemeraeformis) infestations were heavy, particularly on arborvitae. SPIDER MITE infestations were heavy in nurseries. EASTERN TENT CATERPILLAR (Malacosoma americanum) infestations were heavy on wild cherry. FALL WEBWORM (Hyphantria cunea) infestations were heavy on pecan, walnut and persimmon. Some pecan trees in southern regions were completely wrapped up with webs.

Insects Affecting Man and Animals: IMPORTED FIRE ANT (Solenopsis saevissima v. richteri) is presently known to be infesting thirty-four counties with approximately 400,000 acres involved. The 1956 infested acreage was approximately 75,000 acres. The DOG FLEA (Ctenocephalides canis) and CAT FLEA (C. felis) infestations were moderate to heavy over the State. SCREW-WORM (Callitroga hominivorax) infestations were general over the State, with many heavy infestations. There were infestations of screw-worm in the Athens area as early as mid-May. It is thought that the adult flies overwintered in Georgia as far north as McRae, Telfair County.

Beneficial Insects: (Reported by W. E. Neville and W. C. Johnson.) Bees went into the winter period in average to good condition, in most sections of the State. Some feeding was necessary in southern areas, due to excessive rains during the fall honey flow which prevented bees storing the usual amount of honey for winter use. Weather conditions were ideal for honey plant development during the fall of 1957, which should make 1958 a good honey year, with normal weather conditions. Honey production was above average in 1957. The estimated average colony yield was twenty-eight pounds, compared with thirty pounds in 1956. The number of colonies of bees in 1957 was 217,000, which was an increase of 10,000 colonies over the previous year. Very little damage to colonies from insecticides was reported in 1957. The disease situation was about the same as in 1956. Less than one percent of the colonies inspected showed fowlbrood infection.

SUMMARY OF INSECT CONDITIONS - 1957

SOUTH CAROLINA

Prepared by W. C. Nettles, et al.*

CEREAL AND FORAGE CROPS INSECTS

Soybeans - The soybean crop sustained the heaviest damage in the history of its growth in South Carolina. Several of the insects which were involved are as follows: VELVETBEAN CATERPILLARS (*Anticarsia gemmatalis*) were the most important. They appeared at about the same date but in greater numbers. The adults probably having been blown in by Hurricane Audrey from the subtropics. MEXICAN BEAN BEETLE (*Epilachna varivestis*) was more serious on soybeans than ever before. Infestations appeared to originate principally on spring planted snapbeans from which they migrated to soybeans in late June. The warm winter doubtless enabled a large survival and a wetter than normal spring was favorable for the buildup on beans. CABBAGE LOOPER (*Trichoplusia ni*), in early August, appeared to build-up appreciably on soybeans and posed much more of a threat than finally proved to be the case. STINK BUGS appeared to be more numerous, especially in the upper Pee Dee areas, but any serious damage was extremely localized. BLISTER BEETLES (*Epicauta* spp.) caused considerable ragging of leaves. BANDED CUCUMBER BEETLE (*Diabrotica balteata*) was noted damaging soybeans as far inland as Bamberg County. LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) damage was definitely lower than that of previous years and was extremely slight. CORN EARWORMS (*Heliothis zea*) were present in fairly large numbers on untreated beans. State-wide damage was slight because of the widespread application of insecticides. Lupines - LUPINE MAGGOTS and LUPINE WEEVILS caused localized damage to this plant which is grown in a limited area of the State. Alfalfa - SPOTTED ALFALFA APHID (*Therioaphis maculata*) has been found to be generally present over the State. So far its damage has not been extremely serious. During the drought in early August, several spots involving several acres of alfalfa were noted as having been damaged by this aphid. ALFALFA WEEVIL (*Hypera postica*) was first noted in South Carolina, especially in the northern part of the State, having moved in from North Carolina. Severe damage was observed in Florence, Lancaster, Fairfield and York Counties. Very slight infestation occurred in Newberry County and this was attributed to the control obtained from granular insecticides. Clover - CLOVER HEAD WEEVILS reduced yield of crimson clover for seed production. Several growers have applied insecticides with apparently desired results. Grain sorghum - LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) caused damage that was definitely below that of previous years and was extremely slight. Wheat - The HESSIAN FLY (*Phytophaga destructor*) caused many farmers to report a virtual failure or extremely reduced yields. In the upper Piedmont areas it caused considerable

* V. M. Kirk, J. H. Cochran, T. E. Skelton, N. Allen, W. J. Reid, L. M. Sparks, R. L. Walker, C. A. Thomas, J. A. Berly, L. H. Senn, T. R. Adkins, J. K. Reed, E. W. King, and F. McAlister

lodging and severe yield reduction. The buildup was doubtless due to the large amount of volunteer grain and the extremely warm winter. A detailed survey would have shown this loss to have run into thousands of dollars. Oats - APPLE GRAIN APHID (Rhopalosiphum fitchii) and other APHIDS were numerous both during the fall of 1956 and 1957. Early planted grain for grazing was more severely infested. Agriculturists regard this species and others as important. Grasses - Coastal Bermuda had more serious damage by insects than ever reported. Plants were considered to be "insect free". Three insects were involved as follows: (1) A SPITTLEBUG (Tomaspis bicincta) was found in all parts of the State. Some fields were turned completely brown in July, August, and September. This appeared to be correlated with the lack of grazing or mowing and a higher than normal rainfall. With an estimated one-half million acres of Coastal Bermuda this problem can become extremely serious. Damage, so far, has been localized though in several instances it has covered 5 to 10 acres with an estimated loss of \$100.00 per acre. (2) GREEN JUNE BEETLE (Cotinis nitida) larvae caused spotted localized damage, especially to Bermuda grass. It was noted on the more fertile soils which are high in organic matter. (3) MARCH FLIES (Philea sp.) were extremely numerous in soil and apparently damaging Coastal Bermuda grass. These were found in soils extremely high in organic matter. A GRASSWORM (Mocis latipes) which is usually damaging in only a few counties adjacent to the Georgia line near the Atlantic Ocean, was a problem even in counties adjacent to the North Carolina line in the coastal area. In addition to damaging Bermuda grass it caused damage to crabgrass. ARMYWORM (Pseudaletia unipuncta) and FALL ARMYWORM (Laphygma frugiperda) appeared at about the normal time, according to the light traps operated by research workers at Florence, Charleston, and Clemson. The armyworms were also present in light trap collections in appreciable numbers. Damage by these insects to forage crops and corn was extremely low. Over a period of years the YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) has been noted in appreciable numbers in light trap collection, but has not been damaging to crops. SAND WIREWORM (Horistonotus uhlerii) caused extremely minor damage.

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) was the most important insect pest of tobacco during the season. Most of the damage occurred on newly set plants; however, some severe infestations of full-grown tobacco plants were reported in several localities of the State. BROWN STINK BUG (Euschistus servus) and SOUTHERN GREEN STINK BUG (Nezara viridula) were unusually abundant during June. Infestations were more widespread, more severe, and caused more grower concern than in past years. A soil sifting survey was conducted in Florence, Dillon, Marion, and Horry Counties during November and December of 1956 for the TOBACCO WIREWORM (Conoderus vespertinus) with 167 prospective 1957 tobacco fields being examined, of which 117, or 70 percent, were found to be infested. Damage was about normal with severe injury occurring in some localities. TOBACCO BUDWORM (Heliothis virescens) infestation was less than in 1956 which was one of highest on record. Larvae of the CORN EARWORM (Heliothis zea) were associated with the tobacco budworm in last season injury. TOBACCO HORNWORM (Protoperca sp.) was less troublesome than in past years, probably due to the widespread use of more effective insecticides. GRASSHOPPERS are always a problem on newly set plants. There was a general infestation early in the season, but insecticides gave effective control. VEGETABLE WEEVIL (Listroderes costirostris obliquus) caused some injury in plant beds and a few widely scattered infestations of field plants, but the infestation was less than during the past few years. Pests of Less Importance: GREEN PEACH APHID (Myzus persicae), POTATO TUBERWORM (Gnorimoschema operculella), CABBAGE LOOPER (Trichoplusia ni), MIDGE LARVAE, and SNAILS were below normal in abundance.

TRUCK CROP INSECTS

A SOUTHERN POTATO WIREWORM (Conoderus falli) caused extensive and serious damage to Irish potatoes in untreated and in some insecticide-treated fields in commercial plantings in Charleston County, during May and June. Populations of the insect in 17 plantings under observation ranged from averaged of 9 larvae per square foot (6 inches deep) during midwinter, to 6 in March and April, 5 in early May, and 2 in late May and early June. Very few other species of wireworms or other soil insects were noted in these fields. CABBAGE LOOPER (Trichoplusia ni) was present throughout year and extensively damaged cole crops in coastal areas when not controlled. Populations were highest during April and May and during September and October, averaging between 2 and 3 larvae per plant in untreated areas. This species and IMPORTED CABBAGEWORM (Pieris rapae) were chiefly responsible for about 75 percent of the untreated plants being ineligible to U. S. Grade 1. CABBAGE APHID (Brevicoryne brassicae) was light to moderate, with occasional heavily infested plants occurring in most commercial early spring plantings of cabbage in coastal areas. MEXICAN BEAN BEETLE (Epilachna varivestis) was moderately abundant on spring-crop beans in coastal regions. Unusually high populations developed on snap beans, pole beans, and soybeans during late summer, caused serious defoliation in many fields, and transferred to young fall-crop snap beans during early fall. Damage to snap beans was severe in some cases. PICKLEWORM (Diaphania nitidalis) seriously damaged unprotected fall cucumbers and other cucurbits in coastal counties. Few uninfested fruits were produced in untreated fields. CORN EARWORM (Heliothis zea) was moderately destructive to tomatoes, and sweet corn during late spring and early summer and to cole crops, tomatoes, and snap beans during late summer and fall in the coastal plains. Light to moderate populations of Myzus persicae, M. solani, and Macrosiphum solanifolii were present on most commercial early-crop potatoes in coastal farms. FALL ARMYWORM (Laphygma frugiperda) infestations were light to moderate and occurred on fall plantings of cole crops and snap beans. A light infestation of TOBACCO HORNWORM (Protoparce sp.) occurred on fall tomatoes and eggplant. LEAF MINERS (Liromyza sp.) were sufficiently abundant in some plantings of cucurbits to warrant control measures.

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) infestations were generally higher than those of 1956 and heavier damage was inflicted on the crop in coastal South Carolina. Rainy weather during the first of the season caused an increased number of weevils. BOLLWORMS (Heliothis spp.) were not a problem this year. THRIPS and APHID populations were light throughout the coastal section and were not a problem this year. COTTON LEAFWORM (Alabama argillacea) defoliated approximately 95 percent of the cotton in the coastal area in August and September. Its presence was actually beneficial in reducing boll rots and allowing cotton to dry more rapidly so that picking could be done.

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

FALL WEBWORM (Hyphantria cunea) was especially damaging to pecan, persimmon and other plants, especially in the coastal area. A NOTODONTID (Cerura multscripta) on hybrid poplar was extremely serious. A LEAFHOPPER (Alebra albostrigella) was damaging to oaks and caused defoliation during late May. PINE BEETLES caused damage in many locations, especially during construction. Forest entomologists reported serious outbreak of pine beetles in forest and outbreaks of WEBWORMS and REPRODUCTIVE WEEVILS. BORERS in oaks caused many complaints. PIGEON HORN-TAILS damaged elm in York County. CARPENTERWORM (Prionoxystus robiniae) damage to pecan was localized but extremely serious. FULLER ROSE BEETLE (Pantomorus godmani) reported moderately serious in several parts of State on ornamental plants. LILAC BORER (Podosesia s. syringae) caused serious damage to Persian lilac. BORERS in dogwoods caused numerous complaints from various parts of the State. TEA SCALE has been reported as causing serious damage to camellias in

all parts of State. MIMOSA WEBWORM (Homadaula albizziae) damaged locust and mimosa. RASPBERRY CANE BORERS (Oberea bimaculata) damaged roses locally. EVERGREEN BAGWORMS were locally abundant and damaging in many localities.

LAWN INSECTS

SOD WEBWORMS were abundant in Richland and Allendale Counties and are suspected as being damaging to Bermuda grass pasture around Clemson. GREEN JUNE BEETLES (Cotinis nitida) were reported damaging lawns throughout the State. A SPITTLE-BUG (Tomaspis bicincta) was numerous on centipede grass lawns in coastal areas. Same spittlebugs were reported as extremely numerous on American hollies. MARCH FLIES (Philea sp.) were damaging to centipede grass in Aiken County in early June.

INSECTS AFFECTING MAN AND ANIMALS

Infestations of the HOUSE FLY (Musca domestica) were generally light with heavy populations reported in local areas where sanitation was poor. MOSQUITO infestations were normal for the season. BROWN DOG TICK (Rhipicephalus sanguineus) was particularly troublesome in houses in some areas. Control was difficult. EYE GNAT (Hippelates spp.) populations were heavy in the sand hill and coastal plain area and started earlier than usual. COMMON CATTLE GRUB (Hypoderma lineatum) was reported in backs of cattle earlier than usual; twenty percent infestation of brood cows in Saluda County on November 15, 1957. SHEEP BOT FLY (Oestrus ovis) was heavy in nasal passages of sheep in Laurens County. CATTLE LICE infestations were less than normal for the year. Populations of HORSE FLIES and DEER FLIES were below normal for the season. AMERICAN DOG TICK (Dermacentor variabilis) was abundant on dogs in Clemson area during the spring. FLEAS on dogs were troublesome. SCREW-WORM (Callitroga hominivorax) abundant in all areas of the State. First authentic record reported on May 16 in Lancaster County. Majority of cases reported later in season were the SECONDARY SCREW-WORM (C. macellaria). Populations of HORN FLY (Siphona irritans) and STABLE FLY (Stomoxys calcitrans) were normal for the season.

BENEFICIAL INSECTS

Apanteles congregatus was unusually abundant and parasitized a high percentage of the hornworm larvae that appeared during the latter part of the growing season. SCOLIIDS were reported frequently over lawns and pastures. They have doubtless exerted considerable control. They were not noted where extreme white grub damage occurred. Among the species are Scolia dubia and Campsomeris plumipes fossulana. GROUND BEETLES were numerous at the time of small grain harvest and also during the fall of the year. SPOTTED ALFALFA APHID (Therioaphis maculata) has failed to develop, thus far, and there were no extremely damaging infestation. Doubtless insect enemies have some bearing on the situation but entomogenous fungi have been isolated this season and are unquestionably important. VELVETBEAN CATERPILLARS (Anticarsia gemmatalis) on soybeans were very effectively checked by a fungus. The fungus was identified by C. G. Thompson as Spicaria rileyi.

STORED-PRODUCT INSECTS

RICE WEEVILS have been the most important insects in corn. The damage in some areas may have been appreciably abundant. There has been a marked reduction with the coming of the new hybrid varieties. Rice weevil infestations are certainly far lower than they were during the previous decade. Field harvest and storage in metal bins give a new opportunity for control. Fumigation of farm and elevator stored wheat and barley has been effective in the control of the RICE WEEVIL (Sitophilus oryza) and is important in holding the general population down. Oats have been least damaged in storage of all grains. BRANBUGS (Oryzaephilus surinamensis and Tribolium castaneum mainly) have been the most numerous insects in stored oats. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) has

been quite generally present though damage has been minor. The INDIAN-MEAL MOTH (*Plodia interpunctella*) was noted in several granaries. An unidentified insect, probably the larva of the INDIAN-MEAL MOTH has been damaging to red pepper. Dried red pepper is an important crop in the Florence area.

MISCELLANEOUS INSECTS

BLOODSUCKING CONENOSE (*Triatoma sanguisuga*) has caused several complaints from the Cherokee-Union area. FUNGUS GNATS (*Sciara* sp.) appeared in September. Although they do not do any harm they were annoying and in some instances were numerous enough to cause overheating of cars by collecting in radiators. JAPANESE BEETLES (*Popillia japonica*) spread as far south and as far west as Rocky Bottom which is in Pickens County in the mountain area.

SUMMARY OF INSECT CONDITIONS - 1957

VERMONT

Prepared by John W. Scott

The over-all insect conditions in Vermont during the year 1957 were light or moderate, there being no unusual damage as a result of extremely heavy insect infestation.

Forage Insects: Numerous GRASSHOPPERS (*Melanoplus femur-rubrum* and *M. differentialis*) caused some damage to trefoil, alfalfa and grasses. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) was found in alfalfa

Fruit Insects: EUROPEAN RED MITE (*Panonychus ulmi*) was heavy in orchards. APPLE MAGGOT (*Rhagoletis pomonella*) was serious in some orchards. CYCLAMEN MITE (*Steneotarsonemus pallidus*) occurred in additional strawberry plantings.

Forest, Ornamental and Shade Tree Insects: TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was heavy on some ornamentals. GYPSY MOTH (*Porthetria dispar*) was at lowest level since late 40's. There were few scattered infestations and slight buildup in some areas. Suppressed by severe winter temperatures which came with little snow on the ground. Defoliation survey recorded only 225 acres of noticeable defoliation due to this pest. PINE LEAF APHID (*Pineus pinifoliae*) made a strong early appearance generally as evidenced by numerous red spruce galls, however, heavy flights from galls did not materialize, and populations on white pine were below expected level in most areas. Northeastern Vermont was moderately infested with some tip chlorosis and droop apparent in scattered localities. MAPLE LEAF CUTTER (*Paraclemensia acerifoliella*), rapidly gaining reputation as a major sugar orchard pest, was again abundant in adult stage last spring. Early heavy activity declined, however, due to late frost or drought and expected defoliation did not occur until too late to be considered of significance. RED TURPENTINE BEETLE (*Dendroctonus valens*) was reported in Vermont for first time. Light infestations were found in red pine thinnings at three locations in Orange, Rutland and Bennington Counties. BALSAM WOOLLY APHID (*Chermes piceae*) infestations continue to gather impetus in Green Mountain section of central and southern Vermont causing considerable mortality of the host. Activity was limited in northern part of the State by extreme temperatures of preceding winter. BALSAM GALL MIDGE (*Itonida balsamicola*) caused light to moderate defoliation of young balsam fir and Christmas tree stock throughout Essex County and at scattered locations in Orleans and Washington Counties.

Man and Animal Pests: The MOSQUITO population of the spring flood-water species was low as a result of unusually dry spring weather. Seasonal annoyance varied on the lighter side compared with past experience.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

LACKEY MOTH (Malacosoma neustria L.)

Economic Importance: Lackey moth is injurious to fruit and forest trees and woody ornamentals in many areas of Europe and in parts of China and Japan.

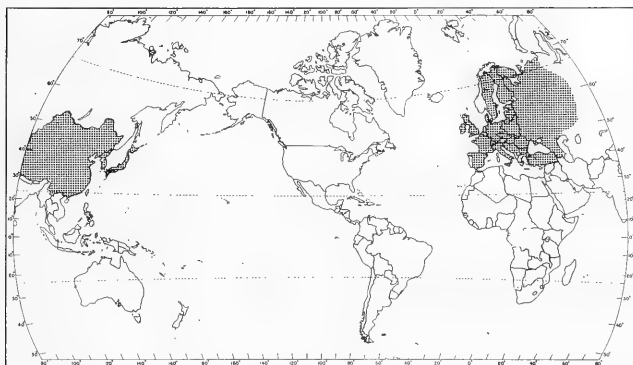


Together with brown-tail moth, it defoliated 10,000 acres of forest in Czechoslovakia in 1936. There are outbreaks at intervals in orchards in the British Isles which result in defoliation and subsequent loss of crops. The insect is chiefly an orchard pest in France but nurseries and trees are also attacked. Serious defoliation of fruit and broad-leaved trees occurs some years in parts of USSR, Bulgaria and Poland. In the Bari, Italy, area infestations are troublesome in almond plantings.

Distribution: Distribution includes Austria, Bulgaria, China, Czechoslovakia, Denmark, Finland, France, Germany, British Isles, Holland, Italy, Japan, Korea, Poland, Rumania, USSR (European part), Spain, Sweden, Switzerland, Turkey, Yugoslavia.

Hosts: Feeds on many deciduous fruit and forest trees including almond, apple, pear, plum, peach, cherry, oak, willow, elms, maple and beech. Roses, cotoneaster and other ornamentals are also attacked.

A Colony of Lackey Moth Larvae



General Distribution of Lackey Moth

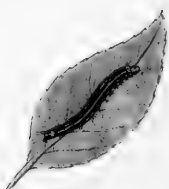
Life History and Habits: Moths emerge in July and August. They are active at night. Eggs are deposited in bands around small branches or twigs, from 100-250 eggs per mass. Overwintering occurs in the egg stage. Larvae hatch in late April and May, spin webs and feed gregariously on nearby foliage. As development proceeds, they spin larger tents from which they migrate over the tree, feeding voraciously. Migration to nearby trees sometimes occurs. Pupation takes place in loose cocoons on branches, between leaves and in dry debris. In Italy, larval and pupal stages last 38-47 days and 12-22 days, respectively.

Description: Adult expanse - male 25 to 30 mm., female 35 to 40 mm. Body, antennae, legs and forewings generally yellow-ochre or reddish-brown. Forewing has large transverse dark colored band. Hindwing lighter colored with a transverse band also lighter than that of forewing. Cocoons yellowish, pupa brownish. Larva is brilliantly colored. Head grayish-blue, whitish medio-dorsal line, grayish-blue longitudinal bands on sides. The prothoracic and eighth abdominal segments have two small dark warts dorsally. Ventrally, the larva is bluish or dirty yellow. Hairs brown, more numerous on sides. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8 (6) 2-7-58

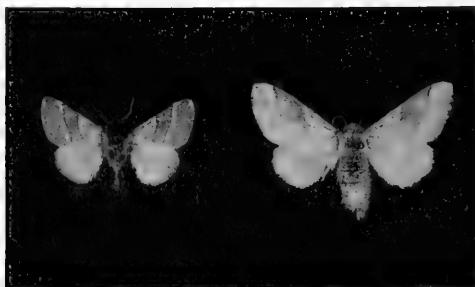
Lackey Moth (Malacosoma neustria)



Egg Bands



Larva



Male and Female Moths

Figures (except map): Egg bands and larva from Theobald, F. V. 1909. The Insect and other Allied Pests of Orchard, Bush and Hothouse Fruits. 550 pp. Wye, England. Larvae and tent from Palmer, R. and Westell, W. P. 1922. Pests of the Garden and Orchard, Farm and Forest. 413 pp. London. Adult-USDA photograph.



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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

SPOTTED ALFALFA APHID remains light in Oklahoma, Texas and New Mexico. (p. 104).

No MEDITERRANEAN FRUIT FLY collected in Florida since November 26, 1957. (p. 104).

SUMMARY OF INSECT CONDITIONS - 1957 South Dakota (p. 107), Nebraska (p. 110), Minnesota (p. 116).

INSECTS not known to occur in the United States. (p. 121).

NOTE: Separates of this series that were issued in Cooperative Economic Insect Report during 1957 have been assembled under one cover and are now available upon request. There are 36 species included in the compilation.

CORRECTION. (p. 106).

Reports in this issue are for the week ending February 7 unless otherwise designated.

WEATHER OF THE WEEK ENDING FEBRUARY 10

Freezing in the Deep South at the beginning of the period and a severe cold wave in all areas east of the Rockies over the weekend featured the week's weather. On the morning of the 4th low temperatures were 32° at New Orleans, La., and 24° and 37° at Tampa and Miami, Fla., respectively. The 24° at Tampa was the lowest there for January since 23° was recorded in January 1905. In Florida's Everglades region, temperatures on the 5th remained below freezing from 8 to 13 hours with lows ranging from 20° to 34°. This freeze caused additional slight damage to citrus, and heavy damage to vegetables, unprotected strawberries, and undetermined damage to several other crops. This winter season with its cold, wet weather has been one of the most unfavorable for agriculture in the history of Florida. Cold air began pouring into the northern Great Plains on the 5th, reached southern Texas on the 6th and the east coast during the weekend. Mobile, Ala., recorded 27° on both the 8th and 9th, and on the latter date Tallahassee and Jacksonville, Fla., reported 30° and 32° respectively. In the northern Great Plains and upper Mississippi Valley temperatures dropped below zero the last 4 nights of the period and remained near the zero level during the days. International Falls, Minn., had a low of -22° and a high of -4° on the 8th. Temperatures for the week averaged below normal everywhere east of the Continental Divide, except in southwestern Great Plains where they were slightly above. Departures were 15° at St. Louis, Mo., 12° in the Florida Peninsula, and 9° in the northern Great Plains. (Continued on page 106).

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*)-NEW MEXICO - Light infestation in Curry and Quay Counties averaged 2 per linear foot of wheat in one field in Curry County. (Nielsen) TEXAS - Infesting wheat in Rockwall County on January 24. (Hawkins)

EUROPEAN CORN BORER (*Pyrausta nubilalis*)-CONNECTICUT - Fall survey shows the average number of borers per 100 plants for 1957 to be 22 in District 1 and 87 in District II, as compared with 33 and 77 for 1956, giving State means of 54 for 1957 and 55 for 1956. (Turner).

SPOTTED ALFALFA APHID (*Therioaphis maculata*)-OKLAHOMA - Populations remain static in Stillwater area. (Bieberdorf). Numbers are rare to very light in southeastern and extreme eastern counties. (Coppock). NEW MEXICO - Light infestations throughout most fields checked in Dona Ana, Eddy, Luna and Hidalgo Counties causing no apparent damage. No alate forms found. (Nielsen). TEXAS - Infestations light on alfalfa, Rockwall County. (Hawkins).

CHINCH BUG (*Blissus leucopterus*)-OKLAHOMA - Report of survey in 4 additional southwestern counties shows the average number of bugs in hibernation per square foot of bunch grass to be 319 in Tillman County, 9.2 in Harmon County, 18.2 in Beckham County and 4.8 in Greer County. (Coppock, Fed.-State Chinch Bug Survey).

A BILLBUG (*Calendra phoeniciensis*)-NEW MEXICO - Light to moderate infestation of larvae in Bermuda grass at Mesilla Park, Dona Ana County. (Nielsen).

A LYGUS BUG (*Lygus elisus*)-NEW MEXICO - Overwintering in large numbers in wheat fields, Harding County. (Nielsen).

A STINK BUG (*Euschistus conspersus*)-CALIFORNIA - Damaging cover crops in Gold Hill area, El Dorado County. Usually not found at this time of year. (Cal. Coop. Rept.).

FRUIT INSECTS

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*)-FLORIDA - No new fly finds since November 26, 1957, making 66 fly free days to date (January 31). (Bittner).

CALIFORNIA RED SCALE (*Aonidiella aurantii*)-CALIFORNIA - Heavy infestations on citrus and ornamental nandina at Visalia, Tulare County. (Cal. Coop. Rept.).

CITRUS WHITEFLY (*Dialeurodes citri*)-CALIFORNIA - Survey in Sacramento revealed 3 new lightly infested blocks, bringing the total to 22 blocks to date. (Cal. Coop. Rept.).

CITRUS RED MITE (*Panonychus citri*)-CALIFORNIA - Reported light to heavy on citrus, San Diego County. (Cal. Coop. Rept.).

LECANIUM SCALE (probably *Lecanium corni*)-OREGON - Building up in several prune and cherry orchards in northern Marion County. (Stphenson).

SPIDER MITES (*Tetranychus* spp.) - NEW MEXICO - Overwintering females alive under bark and along roots of weeds below soil surface in 2 orchards, Lincoln County. (Nielsen).

CLOVER MITE (*Bryobia praetiosa*)-NEW MEXICO - Eggs very numerous to few in number on apple trees, Lincoln and Otero Counties. (Nielsen). This is now under study as a complex of species and will be carried in CEIR as *B. praetiosa* complex until further notice. Morgan, C. V. C. and Anderson, N. H. 1957. *Canad. Ent.* 89(11):485-490.

TRUCK CROP INSECTS

APHIDS - CALIFORNIA - Several species reported on citrus, celery and cole crops, Los Angeles County. Occurrence this early is unusual. (Cal. Coop. Rept.).

GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*)-CALIFORNIA - Damaging semi-dormant foliage of Ollie blackberries in Santa Cruz County. (Cal. Coop. Rept.).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*)-MISSISSIPPI - Adults collected from mustard and turnips Jones County, January 31. (Sumrall).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*)-MISSISSIPPI - Larvae feeding on leaves of mustard and turnips Jones County, January 31. (Sumrall).

YELLOW-MARGINED LEAF BEETLE (*Microtheca ochroloma*)-MISSISSIPPI - Adults and larvae collected from mustard and turnips, Jones County, January 31. (Sumrall).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BLACK VINE WEEVIL (*Brachyrhinus sulcatus*)-MARYLAND - Damaging azaleas in greenhouse at Kingsville, Baltimore County. (U. Md., Ent. Dept.).

ROSE APHID (*Macrosiphum rosae*)-NEW MEXICO - Light infestation on roses in southern part of State. (Nielsen).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*)-CALIFORNIA - Heavy infestation reported from dying parkway trees in Sacramento. This is the third record from this location. The first beetles were taken from elm logs of unknown origin in June 1957. (Cal. Coop. Rept.).

A SHOT HOLE BORER (*Xyleborus saxeseni*)-CALIFORNIA - Adults heavy in elm bark at Novato, Marin County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.)-OKLAHOMA - Counts in Woodward County, January 29, averaged 10.3 grubs per head in 81 yearling steers and 5.5 per head in 40 mature cows. (Allison). VIRGINIA - *H. lineatum* averaged 8 per head in 20 beef calves, Montgomery County. (Turner). MARYLAND - *H. lineatum* averaged 8 grubs per animal in one small lot of young beef animals bought at a sale in College Park, Prince Georges County. Young beef animals reared at College Park were practically grub free. (U. Md., Ent. Dept.).

MOSQUITOES - CALIFORNIA - Heavy infestation of *Anopheles freeborni* annoying residents in cities along Sacramento River from Redding to Sacramento. These hibernating females were brought out by heavy rains followed by warm days, but will go back to hibernation upon return of cool weather. (Cal. Coop. Rept.).

COCKROACHES - GEORGIA - Joint infestation of *Supella supellectilium* and *Blattella germanica* of units in large apartment house in Atlanta, Fulton County. Det. H. G. Scott. (CDC Ent. Mus.).

TROPICAL RATE MITE (*Ornithonyssus bacoti*)-MARYLAND - Biting occupants in home at Hagerstown, Washington County. (U. Md., Ent. Dept.).

STORED-PRODUCT INSECTS

A DERMESTID (*Perimegatoma vespulae*) CALIFORNIA - Reported from sacks at Manteca, San Joaquin County. Apparently more widespread than previously known, being collected more frequently from various locations within State. (Cal. Coop. Rept.).

KHAPRA BEETLE (*Trogoderma granarium*) CALIFORNIA - A new infestation in grain debris at Lancaster, Los Angeles County. (Cal. Coop. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - NORTH CAROLINA - Local infestations found in November, 1957, in Brunswick County (Sessions, Wray) and on 16 December, 1957, in Mecklenburg County (Johnson, Wray), both on sites of previously eradicated infestations. Eradicative treatments have been applied to the new finds. (Farrier, January 10, 1958). Specimens determined by M. R. Smith. FLORIDA - No finds of consequence reported during week ending January 31. (Bittner).

TEXAS LEAF-CUTTING ANT (*Atta texana*) TEXAS - Active in Newton, Jasper, Polk, Tyler and San Jacinto Counties. (Turney).

BLACK WIDOW SPIDER (*Latrodectus mactans*) MARYLAND - Infestation in basement of home in Beltsville, Prince Georges County. (U. Med., Ent. Dept.).

LYCTUS BEETLES (*Lyctus* spp.) VIRGINIA - Heavily damaged wood in 2-year old upholstered chair in Portsmouth, Norfolk County. (Rowell). NORTH CAROLINA - *L. planicollis* emerging from hardwood floors on January 29, Caldwell County. (Andrews, Scott).

SPIDER BEETLES - OKLAHOMA - Numerous in one residence in Oklahoma City. (Bedingfield). VIRGINIA - *Gibbium psylloides* collected in office and classroom, V.P.I., Blacksburg, Montgomery County. (Evans).

CORRECTION

CEIR 8(6):92, Legend on Spotted Alfalfa Aphid map should read "from State reports received to January 1, 1958 and from ARS records."

LIGHT TRAPS

	Hel. zea	Pseud. unip.	Plath. scab.	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subt.	Prod. ornith.
<u>TEXAS</u>								
Brownsville 1/12-2/1	2	125		107	37	36	80	
Weslaco 1/1-31		425		38	44	32	31	54
<u>SOUTH CAROLINA (County)</u>								
Oconee 2/1-7								6

***** (Weather continued)

The week was mild in the Far West where weekly averages ranged from 3° above normal in the south to 12° in the north. Precipitation exceeding one-half inch for the week generally was limited to Arizona and the Pacific States, the lower Mississippi Valley, and areas south and east of the Ohio River. Precipitation was very light north of the Ohio River, in the upper Mississippi Basin, and in the Great Plains, falling mostly as light snow or flurries which extended the snow cover ranging from a trace up to 2 or 3 inches as far south as the Texas Panhandle and western Arkansas. (Summary supplied by U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1957

SOUTH DAKOTA

Compiled by J. A. Lofgren and W.M. Hantsberger

Highlights: EUROPEAN CORN BORER populations reached the highest peak since 1954. PALE WESTERN CUTWORMS were more abundant and destructive than usual. SIX-SPOTTED LEAFHOPPERS became quite numerous in the State on various field and garden crops. SPOTTED ALFALFA APHIDS were noted as early as May 23 in the State. MOSQUITOES were abundant and annoying, particularly in the northeast area. Threatening infestations of GRASSHOPPERS exist in some areas. A SCREW-WORM outbreak occurred in the northwest area.

Cereal and Forage Insects: PALE WESTERN CUTWORM (*Agrotis orthogonia*) infestations appeared in many winter wheat, barley, flax and alfalfa fields of the west central and northwest areas. Many acres were damaged and 2000 acres were sprayed for control. Populations in some fields averaged as high as 5 larvae per linear foot of row. Crop loss is estimated at 66,420 bushels of wheat and 310 tons of alfalfa, or a monetary loss of approximately \$134,049. ARMY CUTWORM (*Chorizagrotis auxiliaris*) infestations appeared at scattered localities throughout the State on various crops. Infestations averaged approximately 3 larvae per square foot although in some cases infestations were much heavier. In the southeast area, several acres of sorghum had to be replanted. In Brown County upon sandy soils, 10 percent of the young corn plants were damaged. The heaviest infestation observed in 1957 appeared in McCook County where a corn field averaged 3 to 4 larvae per linear foot of row and the alfalfa margin showed 12 larvae per square foot. Here 100 acres of corn had been completely destroyed. It is estimated that 1200 acres in the State received some treatment for control and that army cutworms caused a monetary loss of \$142,065. WIREWORM (*Limonius* spp. and *Melanotus* spp.) infestations were noted in wheat and oat fields of the north central and northeast regions where populations averaged 4 larvae per square yard. Little damage was evidenced in the State. Approximately 52 percent of the corn seed planted in the State was treated for wireworms. FALSE WIREWORM (*Eleodes* spp.) infestations appeared in winter wheat of the south central and central regions where populations ranged up to 9 larvae per square yard. Some damage occurred to winter wheat, often in conjunction with that caused by the pale western cutworm. EUROPEAN CORN BORER (*Pyrausta nubilalis*) spring surveys indicated a winter survival of approximately 84 percent in the eight eastern counties surveyed. Pupation was underway the first part of June with moth emergence and egg-laying commencing the latter part of June. Optimum weather conditions prevailed during the ovipositing period. Egg hatch and accompanying "shot-hole" damaged appeared around the middle part of July. The first brood infestation averaged 42 percent with an average of 125 larvae per 100 plants. Flight of second-brood moths, which began around the middle of August, was fairly heavy. The fall survey indicated an average of 79 percent infestation with an average of 339 borers per 100 plants for the 6 districts and 47 counties surveyed. It is estimated that approximately 16,351,000 bushels of corn was lost to the borer, representing a monetary loss of \$11,733,000. Approximately 11,355 acres were treated for control, resulting in a saving of \$358,591. GRASSHOPPERS - Hatching of eggs was well underway the latter part of June. Weather in most areas was favorable for nymphal development with the exception of the Black Hills area where rainy, cool weather following hatching is believed to have reduced the populations. Nymphal populations in eastern South Dakota were heavy in some scattered localities; as high as 30 per square yard in alfalfa. The first cutting of alfalfa was damaged in many instances. In the west-river country nymphal populations of economic importance were restricted to the Black Hills area where some localized areas showed populations up to 35 per square yard. Adult surveys showed a few areas in the State which are rated threatening to severe. These are (1) two small areas in western Black Hills, (2) most of Campbell and western McPherson Counties, (3) portions of Day, Brown, Clark, Grant, Roberts and Spink Counties, and (4) portions of Clay and Union Counties. Much of the east-river cropland was infested with ratings from non-economic to light, with the exceptions

of the previous areas mentioned. The dominant species in the cropland areas was the red-legged grasshopper (Melanoplus femur-rubrum). In general, the rangeland infestation throughout the State was non-economic, with the exception of the Black Hills area. The dominant species in this area was Melanoplus spp. with some "hot spots" of Camnula pellucida showing up. The largest single loss due to grasshoppers in the State was probably to unsprayed alfalfa seed fields in the late summer. Loss to crops from grasshopper activities is estimated at approximately \$1,000,000. Approximately 100,000 acres were treated for control, resulting in a saving of \$722,000. SWEETCLOVER WEEVIL (Sitona cylindricollis) became active and started feeding in April. Feeding injury ranged from 15 to 100 percent of plants showing damage. Larval damage to new seedlings was slight and many successful stands of sweetclover were obtained, indicating that the weevils were not as troublesome as in the past. ALFALFA WEEVIL (Hypera postica) - Adults were active and feeding in alfalfa by the first week of May in the west central area. Populations of 40-50 larvae per 10 net sweeps were noted in untreated fields of Lawrence and Butte Counties by mid-June. No economic damage was reported to the first cutting of alfalfa due to the late appearance of the larvae. Some damage was reported to later cuttings of alfalfa but in most instances the actual damage was slight. LYGUS BUG (Lygus spp.) overwintering adults became active the latter part of April in the eastern areas. By the first part of May populations averaged 4 bugs per 10 net sweeps in alfalfa. Populations at mid-summer averaged 29 per 10 net sweeps in all areas. Injurious infestations were noted on many alfalfa seed crops. ALFALFA PLANT BUG (Adelphocoris lineolatus) reached economic numbers on alfalfa the first part of June. Throughout the growing season populations averaged 54 bugs per 10 net sweeps for all areas surveyed. Injurious infestations were noted on many alfalfa seed crops. POTATO LEAFHOPPER (Empoasca fabae) was first reported in the State on June 10 when adults were found on alfalfa in Brookings County. By the first part of July populations were averaging 6 per 10 net sweeps on alfalfa in many localities. In the northeast they became very abundant in potato fields where populations ranged up to 150 per 10 net sweeps. In the east central region, many home gardens showed characteristic "hopper-burn" to potatoes. PEA APHIDS (Macrosiphum pisi) were first noted in the State upon alfalfa around the first part of May. By the first part of July populations were averaging approximately 200 per 10 net sweeps on alfalfa. Populations dwindled during the hot summer months but built up again during the fall to average approximately 100 aphids per 10 net sweeps. ALFALFA CATERPILLARS (Colias philodice eurytheme) larvae appeared in alfalfa fields of the southeastern region around the latter part of April. Throughout the season populations averaged approximately 1 larva per 10 net sweeps. Populations of 5 larvae per 10 net sweeps were noted in the east central region by September. SIX-SPOTTED LEAFHOPPERS (Macrostelus fascifrons) were noted upon alfalfa the first part of May in the southeastern area and populations built up to 24 per 10 net sweeps by the latter part of May. Various crops including oats, wheat and flax, were attacked. Populations of 57 per 10 net sweeps on oats and 12 per 10 net sweeps on flax were encountered during the spring and summer. Many reports were received from the northeastern area concerning the "aster-yellows" disease of flax which is transmitted by this leafhopper. Flax loss due to the leafhopper is estimated at 343,980 bushels or \$1,011,301. ENGLISH GRAIN APHIDS (Macrosiphum granarium) infested small grain throughout the State during late spring and early summer. Populations ranged from 6 to 20 aphids per plant in scattered localities throughout the State. Actual damage was limited to some late-sown grain. VARIEGATED CUTWORMS (Peridroma margaritosa) infestations damaged alfalfa some localities in the southern regions of the State. Populations ranged from 1 to 10 larvae per 10 net sweeps in these areas. The heaviest infestation encountered was in Bennett County where larvae averaged 4 per square foot in alfalfa. GREEN CLOVERWORMS (Plathypena scabra) - Heavy infestations developed upon alfalfa in the late summer and early fall throughout the eastern portion of the State, averaging 28 larvae per 10 net sweeps. CORN ROOTWORMS (Diabrotica spp.) caused little damage. Adults of the northern, southern and western corn rootworms were noted in corn fields around the first part of August. Later in the season many adults went to alfalfa and red clover where counts averaged 7 beetles per

10 net sweeps. Approximately 42,120 acres were treated for control. WEBWORMS (Loxostege spp.) - Both garden and alfalfa webworms were noted in alfalfa fields during the summer. Populations up to 30 larvae per 10 net sweeps were recorded in some localized areas. In general, populations were much lighter than in 1956 and little damage was observed.

Truck Crop Insects: SIX-SPOTTED LEAFHOPPERS (Macrosteles fascifrons) were numerous in eastern areas on various garden crops, particularly lettuce, radishes and peas. POTATO FLEA BEETLE (Epitrix cucumeris) was abundant upon potatoes in the east central and northeast areas. Leaf-feeding damage was heavy on untreated garden potatoes. VARIEGATED CUTWORM (Peridroma margaritosa) larval infestations in July were reported heavy on garden crops in Bennett County averaging 4 larvae per plant. CABBAGE LOOPER (Trichoplusia ni) was abundant in eastern areas and caused heavy damage to peas, cabbage, broccoli, lettuce and cauliflower. TOMATO PSYLLID (Paratrioza cockerelli) was especially damaging to late tomatoes in Pennington County. CUCUMBER BEETLES (Diabrotica undecimpunctata howardi and Acalymma vittata) were abundant on cucurbits throughout the summer season.

Forest, Ornamental and Shade Tree Insects: LEAF BEETLES (Calligrapha spp. and Chrysomela spp.) were observed in early spring feeding heavily upon willow. WOOLLY ELM APHID (Eriosoma americanum) and ELM COCKSCOMB GALL (Colopha ulmicola) were noted on many elm trees of eastern areas through the summer. TENT CATERPILLARS (Malacosoma spp.) were found defoliating Chinese elm, cottonwood and other trees in localized areas of Meade County. MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) larval infestations were reported throughout the State, causing some defoliation to elm trees. FALL WEBWORMS (Hyphantria cunea) infested most chokecherries and aspens in the Black Hills area late in the summer. HORNWORMS (Pholus sp.) were abundant upon Virginia creeper in the west central area. WALNUT CATERPILLAR (Datana integerrima) severely defoliated some walnut trees in the southeastern area. WHITE-MARKED TUSSOCK MOTHS (Hemerocampa leucostigma) were active in scattered southeastern localities feeding on elm. A heavy infestation of A SCURFY SCALE (Chionaspis salisis-nigrae) was reported from Davison County on weeping willow.

Insects Affecting Man and Animals: BLACK FLY (Simulium spp.) adults were found in abundance along the lower Big Sioux Valley in May, were detected in the light trap at Brookings and were a nuisance in these two areas during the early summer. MOSQUITOES were very abundant and annoying in the eastern part of the State, particularly the northeast. Culex spp. were dominant earlier in the spring with Aedes spp. replacing them later in the summer. HOUSE FLIES (Musca domestica) began to build up in the eastern part of the State during July and became especially annoying in the fall. STABLE FLIES (Stomoxys calcitrans) became severe in east central localities during August. SCREW-WORM (Callitroga hominivorax) - An outbreak occurred among cattle herds in Corson and Dewey Counties, involving an area approximately 40 miles wide and 50 miles long just west of the Missouri River. Treatment involved approximately 15 herds. HORN FLIES (Siphona irritans) were abundant throughout the State. It is estimated that 48 percent of the cattle in the State received some treatment. CATTLE LICE (Linognathus vituli, Haematopinus eurysternus and Bovicola bovis) were abundant on untreated cattle throughout the State. It is estimated that 32 percent of the cattle in the State received some treatment for lice. CATTLE GRUBS (Hypoderma spp.) occurred in usual numbers throughout the State, approximately 10 percent of the cattle received some treatment for grub control.

Beneficial Insects: DAMSEL BUGS (Nabis spp.) occurred throughout the summer in alfalfa fields. Populations ranged from 2 to 6 bugs per 10 net sweeps.

In March, many overwintering adult LADY BEETLES (Hippodamia convergens, H. parenthesis and Coccinella novemnotata) were noted in alfalfa fields in Southeast and adults averaged 3-4 per 10 sweeps on alfalfa throughout the growing season. INSIDIOUS FLOWER BUGS (Orius insidiosus) were present in alfalfa fields of the central and eastern regions where populations reached 7 bugs per 10 net sweeps.

SUMMARY OF INSECT CONDITIONS - 1957

NEBRASKA

Reported by Lloyd W. Andersen, Roscoe E. Hill, Robert E. Roselle

Highlights: GRASSHOPPERS most severe and widespread since the mid-30's EUROPEAN CORN BORER second generation dealt damaging blow to the corn crop. PALE WESTERN CUTWORM populations continued to remain high in the west. ALFALFA WEEVIL most severe on record the the panhandle area. SPOTTED ALFALFA APHID, only minor damage occurred in the State. GREEN CLOVERWORM common on soybeans and alfalfa in the eastern third of the State. ALFALFA WEBWORM very destructive on alfalfa in southeastern and Republican Valley areas. POTATO PSYLLID populations moderate to heavy on lycium and early potatoes in the panhandle. VARIEGATED CUTWORM moderate to spotted heavy populations on alfalfa and small grains in the Platte Valley. FALL ARMYWORM moderate to severe damage to corn and sorghum in the Republican Valley. SPRING CANKERWORM most severe and widespread since 1952. SMALLER EUROPEAN ELM BARK BEETLE continues to move westward. POTATO LEAFHOPPER, first found May 15. Other pests that were troublesome during the season included six-spotted leafhopper, mosquitoes, stored grain pests, two-spotted mites, corn leaf aphids, corn earworms, and corn rootworms. No new pests of major importance were encountered during the 1957 season.

Cereal and Forage Crop Insects: (Legumes) ALFALFA WEEVIL (Hypera postica) was heavy in the panhandle and the southwestern counties in alfalfa. Larval populations ranged upward to 1600 per 100 net sweeps. New records were established for Thomas, Arthur, Keith, Perkins, and Chase Counties. The infestation began in early March and continued to mid-summer. A few larvae were present in mid-September in Scotts Bluff County. SPOTTED ALFALFA APHID (Therioaphis maculata) was of little consequence in the State, although found throughout the major alfalfa producing regions and was found in numbers only in the northeast, southeast, and the Republican Valley areas. Surveys conducted through the winter months proved to be negative. The aphid was again found in the State in mid-April near Odell, Gage Co. By late May populations were generally light over the eastern third of the State. In August a small localized infestation began in a few fields in the northeast reaching 100 per sweep by mid-August, only to decline and become almost non-existent by September. About this time another infestation began in the Republican Valley reaching a population of 2800 per 100 sweeps by late September and then decreasing until November 13 when the area was covered by snow. No large population was recorded in the southeast until September 6 when it reached 800 per 100 sweeps and then remained stagnant. The aphid reached the Middle Platte Valley in early September but did not build up any great numbers. The highest population recorded was 40 per 100 sweeps. A fungus disease of the genus Entomophthora which began during the latter part of June and first part of July possibly held the aphid in check somewhat in the eastern third of the state. GREEN CLOVERWORM (Plathypena scabra) populations were very high in alfalfa and soybean fields in the eastern third of the State from mid-August through September. Counts in alfalfa fields reached a high of 185 larvae per 100 sweeps, and as high as 9 larvae on a single soybean plant. Damage was lessened in some areas by parasitism. ALFALFA CATERPILLAR (Colias philodice eurytheme) - Heavy populations occurred generally throughout the alfalfa producing regions from early June until late September. Larvae ranged

from 4-8 per 100 sweeps in June to 800-1200 per 100 sweeps in late July in the southeast. ALFALFA WEBWORM (*Loxostege commixtalis*) occurred in outbreak numbers in southeast, northeast, south central and southwestern areas in alfalfa, beginning in early August. Webbing was very noticeable. Counts ranged from 60-270 per 100 sweeps. GARDEN WEBWORM (*Loxostege similalis*) infestations were moderate to spotted heavy in the south central and southeastern counties; from 100-250 per 100 sweeps in alfalfa. PEA APHID (*Macrosiphum pisi*) infestations first occurred in southeast areas in alfalfa and red clover during the latter part of April. Development was slow because of unfavorable weather conditions and populations did not reach economic proportions until early June, 360-2000 per 100 sweeps in the southeast. Populations then began to build up generally throughout the major alfalfa producing regions: northeast, 300-600 per 100 sweeps; Republican River Valley, 90-180 per 100 sweeps; panhandle, 100-250 per 100 sweeps; central, 50-125 per 100 sweeps. During late June and early July, a fungus disease (*Entomophthora* sp.) effectively reduced the population in the southeast and later in the eastern third and in the Republican Valley area. Populations began to build up again by mid-September but did not cause serious damage. TARNISHED PLANT BUG (*Lygus lineolaris*) populations ranged from moderate general to spotted heavy. The pest came out of hibernation during the second week of April with 3-5 per crown in the southeast and south central counties. Infestations became general over State by early June and continued until snow fell in November. At peak, counts of adults and nymphs ranged 780-1920 per 100 sweeps during mid-June in the southeast. ALFALFA PLANT BUG (*Adelphocoris lineolatus*) population was generally light to moderate in alfalfa throughout the State. Infestations ranged from 10-45 per 100 sweeps in the south central and southeastern portions in early June reaching a peak in mid-July when populations ranged from 200-1200 per 100 sweeps in southwestern counties. RAPID PLANT BUG (*Adelphocoris rapidus*) existed in a relatively light population in alfalfa: 100-120 per 100 sweeps in northwestern counties, 28-60 in northeast and 20-40 in Republican Valley. Very little damage. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) overwintered adults were first observed in sweetclover and alfalfa litter in the southeast in early April. Populations were 1-2 per square foot and increased to 60-100 per 100 sweeps. Feeding on the newly emerged seedlings was more evident than the preceding two years. Populations then decreased during the summer months appearing again in numbers in early October in the southeast ranging 60-75 per 100 sweeps. YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - Light infestations were found in alfalfa, small grains and corn in the northeast, south central, central Platte Valley and panhandle areas in late July through August. Light moth flights began at North Platte and Alliance in mid-August and reached their peak the first week in October. LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) infestations were light on red clover in southeastern areas, 1-5 per 100 sweeps, and caused very little damage. CLOVER LEAF WEEVIL (*Hypera punctata*) - A light infestation prevailed generally in eastern areas, counts ranging from 2-6 per 100 sweeps in late May to 32-110 per 100 sweeps at mid-June. Little damage occurred. SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) - A heavy infestation was found in the spring and summer in alfalfa and soybean fields in eastern, south central and central portions, counts from 160-450 per 100 sweeps. Some fields of alfalfa in the south central areas were sprayed. CLOVER LEAFHOPPER (*Aceratagalla sanguinolenta*) was light to moderate throughout the year on alfalfa, small grains, pastures, and in lawns. PAINTED LEAFHOPPER (*Endria inimica*) was light to moderate in spring in alfalfa, small grains and pastures in southeastern and south central portions of the State but caused little damage. CLOVER ROOT CURCULIO (*Sitona hispidula*) produced no serious damage. CLOVER SEED CHALCID (*Bruchophagus gibbus*) caused light damage to alfalfa seed in Douglas, Madison, Thurston, and Saunders Counties. POTATO LEAFHOPPER (*Empoasca fabae*) - In 1957, eastern, south central, and central Nebraska experienced one of the most serious potato leafhopper outbreaks. The pest was first found on May 15 in Lancaster County. Populations continued to build up through the summer and did not disappear until late November in the Republican Valley area. Serious yellowing and "hopper-burn" resulted in many alfalfa and potato fields. BLISTER BEETLE (*Epicauta* spp.) populations were very high in alfalfa fields in the Republican River Valley, southeast and northeast Nebraska beginning in mid-June and continuing through September. The pests were very common on tomatoes and potatoes from mid-July to September.

A single days catch at a light trap at Lincoln revealed 2243 beetles. GRASSHOPPERS - Crop land species infestations were the most serious and most widespread since the mid-30's. Moderate to severe damage occurred in the eastern, central, and southwestern portions of the State, chiefly in alfalfa, clovers, pastures, corn, sorghums, and soybean fields. In some areas in late July all that remained of alfalfa was the stems. They then moved into and throughout corn fields. Those observed crossing roads averaged 8 per square yard in some areas. Surveys revealed that the initial hatch occurred during the third week in April. Primary species involved were Melanoplus bilituratus, M. bivittatus, and M. differentialis. M. femur-rubrum hatch began in late June. Nymphal populations increased to 200 per square yard in areas of high egg concentrations and general populations of 75-100 per square yard were common. Infestations of all four important crop species of Melanoplus continued at high levels through most of the summer. Counts exceeding 10 per square yard in corn field margins were common. In many areas, especially in the south central, counts were more than 10 per square yard in entire corn fields. Alfalfa fields had counts in excess of 40 per square yard in some cases, averaging 25 per square yard in the generally infested areas. Marginal counts ran as high as 90 per square yard. Rangeland species were present in threatening infestations in northern Keith, southern Arthur and McPherson, northwestern Lincoln, western Deuel and central Cheyenne Counties. Local light infestations were found in Garden, northern Arthur, southern Grant, McPherson, Logan, eastern Lincoln and central Kimball and Banner Counties. The initial hatch did not begin until the second week of May. The major species involved were Ageneotettix deorum, Aulocara elliotti and Phliostrotra quadrimaculatum. During the second week of June the range species began a rapid development with counts ranging from 20-35 per square yard common. Considerable control programs were undertaken by the farmers and ranchers with 99,940 acres of rangeland sprayed in Keith and Garden Counties and about all of Fillmore County, including 43,000 acres of cropland, was sprayed by air. Fungus disease and sarcophagid flies were active along with blister beetles which were general over the eastern portion of the State.

(Corn and Sorghum) Although heavy flights of SEED-CORN BEETLE (Agonoderus lecontei) occurred at the light trap stations at Lincoln, North Platte, and Scottsbluff, no serious damage occurred. MAIZE BILLBUG (Calendra maidis) caused light to moderate damage in early June to corn grown on bottom lands in the southeastern area. BLACK CUTWORM (Agrotis ypsilon) caused moderate and spotted severe damage to corn in the eastern third of the State during early June. In some areas as high as 17 plants out of 25 were damaged. Two major moth flights occurred at Lincoln, one in mid-June and the second in mid-August. A major flight occurred during the last week in September at North Platte. CORN LEAF APHID (Rhopalsiphum maidis) infestations were moderate to severe in corn and grain sorghums in south central, central and eastern areas during July and August. High populations of lady beetles (H. convergens primarily), Orius, syrphid flies and lacewings developed rapidly in most areas to check the infestations before serious damage occurred. Retardation of seed development and loss in weight resulted in some areas. FALL ARMYWORM (Laphygma frugiperda) was light to moderate with spotted heavy infestations in corn and sorghum in the south central, eastern and central areas. In the south central areas this pest caused much ear-dropping in corn. ARMYWORM (Pseudaletia unipuncta) infestations in corn were relatively light compared with last year in the eastern and central areas, with little damage. CHINCH BUG (Blissus leucopterus) migrations from overwintering habitats to wheat began in mid-April, those from wheat to corn and sorghums in late June. Only light damage occurred as compared with last year. Fall surveys (1957), in 33 counties, revealed a generally light to spotted severe condition existing in the southeastern counties. Counts ranged upward to 1,714 bugs per square foot in some areas. CORN ROOTWORMS (Diabrotica undecimpunctata howardi, D. virgifera and D. longicornis) caused more damage than in the past several years. Southern corn rootworm adults were found in alfalfa fields in early May. The northern and western corn rootworm adults began appearing during the first week in July. CORN EARWORM (Heliothis zea) moderately infested field corn and sweet corn generally throughout southeast, south central and central regions. Damage to corn ears was heavy in nearly all southeast

and south central counties with 80-90 percent infestation in late September. Heavy moth flights occurred at North Platte in early October. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was present in light to moderate numbers on corn in northeast counties, but only a light infestation occurred in the western Platte Valley area as compared with 1955. EUROPEAN CORN BORER (*Pyrausta nubilalis*) - The spring survey revealed a heavy winter mortality of approximately 84 percent in the northeast and 93 percent in the Platte Valley. Populations averaged 2,852 borers per acre in the northeast, 1,271 in the Loup Valley, 2,103 in east central, 1,280 in southeast, 856 in south central and 1,467 in the Platte Valley areas. Pupation of overwintering borers was approximately 100 percent by June 5. First moths appeared at Lincoln by June 10 and at North Platte by June 20 as corn was not at right stage, moths chose various weeds and other plants to support first brood. Because of this light infestation on corn, the farmers did relatively little control work. Light traps at Lincoln, North Platte, and Alliance revealed a heavy second moth flight within a single day high of 524 at North Platte on August 20, and 387 on August 26 at Alliance. The late plantings of corn and favorable weather conditions were partly responsible for the heavy second brood. The heaviest second-brood infestation was in northeast counties with 100 percent of many fields infested, averaging 5 borers per plant. Damaging infestations were also found in the Platte Valley, Loup, and Republican River Valleys and in the southeast. Results of fall survey conducted in 64 counties has been included in CEIR 8(3):37, 1/17/58. Average number of borers per 100 plants was 272 compared with 136 in 1956. Loss due to corn borer activity was 18,815,929 bushels valued at \$20,697,521.90, almost four times more than in 1956. The following corn and sorghum insects occurred in light infestations or caused only light damage: seed-corn maggot, a sandhill cutworm (*Euxoa detersa*), a sod webworm (*Thaumtopsis pectinifer*), corn root aphid, stalk borer, wireworms.

Other Cereal and Forage Crop Insects: ENGLISH GRAIN APHID (*Macrosiphum granarium*) was light to moderate in wheat in southern areas during June. Peak counts averaged 62 aphids per 10 wheat head samples taken. PLAINS FALSE WIREWORM (*Eleodes opaca*) counts in wheat and barley in southern panhandle and southwestern counties were 1 to 2 per linear foot in early April, with adults very abundant under litter and at lights in July and August. SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) populations were heavy in oat and wheat fields in central and eastern regions, with counts of 210-450 per 100 sweeps common in early June. WHEAT CURL MITE (*Aceria tulipae*) was found in two isolated areas in the panhandle, southwest of Sidney and southwest of Scottsbluff extending into Banner County. No serious damage or outbreak occurred. HESSIAN FLY (*Phytophaga destructor*) populations increased over the past two years but still remain generally light. ARMYWORM (*Pseudaletia unipuncta*) was moderate in rank and lodged wheat in the east, south central and central Platte Valley. Counts were 28-36 per 100 sweeps during June and early July. PALE WESTERN CUTWORM (*Agrotis orthogonia*) infestations were moderate to severe in winter wheat and winter barley in panhandle and southwestern counties. Heaviest infestations were in western Keith, Perkins, and Chase Counties with counts in some areas of 30 larvae per linear foot. Approximately 45,000 to 50,000 acres were treated. The following pests were light or caused little damage: brown wheat mite, greenbug, wheat head armyworm.

Vegetable and Truck Crop Insects: POTATO LEAFHOPPER (*Empoasca fabae*) was serious in eastern and central counties. The first 1957 report was May 15 in Lancaster County. Serious yellowing and "hopper-burn" occurred on potatoes in central and eastern areas. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) populations were light locally with no serious damage. CORN SAP BEETLE (*Carpophilus* sp.) was present in injured ears and stalks of sweet corn in eastern, central, and south central areas during the summer. POTATO PSYLLID (*Paratrioza cockerelli*) occurred in light to moderate to spotted heavy populations on lycium, potatoes and tomatoes in central and western areas. Serious psyllid yellows occurred on potatoes in the west. Counts were 80-898 per 100 sweeps on lycium and potato cull piles in early summer to 10 per 100 sweeps on field potatoes in late July and August. MEXICAN BEAN BEETLE (*Epilachna varivestis*) infestations were light to moderate in August in field beans in Scottsbluff area. In some fields serious skeletonizing resulted. BEAN LEAF BEETLE (*Cerotoma trifurcata*) caused light

local damage in central and south central Nebraska with population down from last year. TOMATO FRUITWORM (*Heliothis zea*) infestations were light to moderate on garden and field tomatoes in eastern and central areas. TUBER FLEA BEETLE (*Epitrix tuberis*) appeared in small numbers on cull sprouts in late May and early June. Counts were 42-60 per 100 sweeps, averaging 53.3 per 100 sweeps in untreated potato fields in Scottsbluff area by mid-July. HARLEQUIN BUG (*Murgantia histrionica*) populations were light to moderate in eastern Nebraska on cruciferous plants. SQUASH BUG (*Anasa tristis*) was very abundant on cucurbits in gardens generally. IMPORTED CABBAGEWORM (*Pieris rapae*) was moderate to spotted heavy on cabbage and broccoli in eastern and central regions of the State. MELON APHID (*Aphis gossypii*) was present in high numbers on cucumbers and garden melons. Heavy damage was common in home gardens in eastern regions. SQUASH VINE BORER (*Melittia cucurbitae*) did moderate damage from mid-July to September. PEA APHID (*Macrosiphum pisi*) occurred in high numbers on garden peas and beans in late spring and early summer. ARCTIIDS were present in above normal populations during summer on nearly all garden vegetables. Very abundant on weeds and soybeans in the northeast and central regions. BET WEBWORM (*Loxostege sticticalis*) populations were high in most beet fields in west, south central and central regions. Larval counts ranged from 60-84 per 100 sweeps in early June in south central area to 80-400 per 100 sweeps in panhandle area in early August. WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) infestations were heavy locally in bean fields on the more sandy soils in Scottsbluff area. Damage to pods occurred. Light infestations also found in field corn in Scotts Bluff, Morrill, Garden and Keith Counties. Moths were present as far east as North Platte, Lincoln County.

Insects of Shade Trees, Perennials, and Other Ornamentals: SPRING CANKERWORM (*Paleacrita vernata*) surveys revealed much heavier and more widespread infestation than in past years. Greatest damage was in the Pine Ridge district in Chase County and eastward down the Platte Valley to Hall County. Approximately 75-85 percent of woodland areas and windbreaks in some regions were defoliated. CLOVER MITE (*Bryobia praetiosa*) migrations from lawn and perennial borders into homes generally heavy throughout State. Controls were used extensively. WALNUT CATERPILLAR (*Datana integerrima*) - A heavy population on walnut trees in the northeast during latter part of August stripped all leaves from trees in some areas. FALL WEBWORM (*Hyphantria cunea*) was very abundant on elm, poplar, and roadside shrubs in southeast, Loup Valley and northeast regions. Damage very noticeable. BAGWORM (*Thyridopteryx ephemeraeformis*) population on evergreens, pin oaks, sycamore, and spirea was heavy in the southeast through the summer. NORTHERN MASKED CHAFER (*Cyclocephala borealis*) adults were present at Lincoln, North Platte and Scottsbluff from early July to mid-August. Populations were light to moderate in lawns in eastern third of State. AN ASH TREE BORER (*Neoclytus capraea*) - Adult emergence in early March was greater than any time in recent years. PINE SAWFLIES (*Neodiprion* spp.) were found in several locations in central and north central areas. Light to moderate damage occurred to young trees near Halsey. ELM BORER (*Saperda tridentata*) infestation in elms along the Platte Valley and in eastern Nebraska was general. FLATHEADED APPLE TREE BORER (*Chrysothris femorata*) was very abundant in American elms, especially those in decline due to drought or disease in the eastern area. A TUSsock MOTH (*Lymantriidae*) was very abundant on Chinese elm and roses through the summer and fall. Light to moderate infestations of GREEN-STRIPED MAPLEWORM (*Anisota rubicunda*) were found along the Missouri River Valley from Otoe County northward to Washington County. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) was very prevalent on lilac in central and eastern localities. Heavy damaging infestations of EUROPEAN ELM SCALE (*Gossyparia spuria*) persist in the eastern third, central and western portions with many trees killed. NANTUCKET PINE MOTH (*Rhyacionia frustrana*) was very abundant on young ponderosa pine in established forest areas, and is found in some trees as far east as Otoe County. PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) infestations were moderate to heavy on ponderosa pine in Pine Ridge, Halsey Forest and pine windbreaks in central counties. SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) is now as far west as McCook, Red Willow County and there are moderate populations in several areas in the southeast. SPIDER MITES (*Tetranychus* spp.) - Moderate to heavy infestations occurred on conifers, roses, and garden vegetables in eastern third and central

portions. Controls were extensive. LILAC BORER (Podosesia syringae) is abundant in the southern portion of the State; serious damage in some areas. AN OAK KERMES SCALE (Kermes sp.) damaged native oaks along the Missouri River from Omaha, Douglas County south to Richardson County. LEAF ROLLER populations were heavy along the Platte Valley and in the northeast on locust trees with severe defoliation in some areas. IRIS BORER (Macronoctua onusta) was more prevalent than in past years in gardens and on greenhouse plants. PEACH TREE BORER (Sanninoidea exitiosa) - Very abundant in fruit trees in early spring. Loss of trees resulted in some areas.

Stored Grain Insects: CONFUSED FLOUR BEETLE (Tribolium confusum) - Of all the major stored grain pests, this pest was found in greatest numbers, especially in wooden structures, CADELLE (Tenebroides mauritanicus) was very abundant in wooden grain structures in the southern tier of counties. Infestations in wheat more general than in past years. RICE WEEVIL (Sitophilus oryza) was most important grain pest as to damage incurred. Found generally throughout the State in small numbers. GRANARY WEEVIL (Sitophilus granarius) was more numerous than the rice weevil but damage less severe. Found generally throughout the State. INDIAN-MEAL MOTH (Plodia interpunctella) was one of the most numerous of all stored grain pests, but probably less important from damage standpoint. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - Very abundant in the southern tier of counties, especially in grain shipped from farm storage to the granary. RED FLOUR BEETLE (Tribolium castaneum) - Only an occasional beetle found in inspections of various granaries. KHAPRA BEETLE (Trogoderma granarium) surveys were conducted in 50 seed houses, granaries and elevators this past year. Light infestations of T. glabrum, T. parabile, and Attagenus spp. were found but no khapra beetles.

Insects Affecting Man and Animals: MOSQUITOES - The 1957 summer, as was the case in 1956, again saw one of the most serious mosquito outbreaks. Above normal rainfall in the east, central, south central and western regions brought on large populations. In the east the principal species was Aedes vexans. In the west, south central and central regions, the principal species were Aedes dorsalis and Culex tarsalis. CATTLE GRUBS (Hypoderma spp.) - Fly activity was very noticeable beginning in late April and continuing into June in the sandhill region. Populations then developed into a normal situation. A few grubs were found in the backs of animals as early as December at North Platte when counts averaged 1-5 per head. HORN FLY (Siphona irritans) was very numerous on animals in west and north central regions and was a problem on unsprayed animals in the sandhills. STABLE FLY (Stomoxys calcitrans) population was much higher in 1957 than in 1956, and was a severe problem in the eastern portion of the State. HOUSE FLY (Musca domestica) was a constant nuisance in urban and rural areas. CATTLE LICE (Bovicola bovis and Haematopinus spp.) were normal on cattle in feed lots in eastern and central Nebraska. Cattle not treated in many cases were heavily infested with one or both species. AMERICAN DOG TICK (Dermacentor variabilis) population was normal in the Pine Ridge area. A few specimens of the BROWN DOG TICK (Rhipicephalus sanguineus) were found in the Pine Ridge district. CHIGGER (Eutrombicula alfreddugesi) populations in eastern and southern Nebraska were much lower than in past years. SCREW-WORM (Callitroga hominivorax) was reported in southern Jefferson County around the navels of newly-born calves.

Cooperators: The following Nebraska entomologists also contributed to the Cooperative Economic Insect Survey during 1957: R. V. Connin, C. Jones, H. J. Ball, O. S. Bare, R. Stapes, L. W. Quate, C. Walstrom, D. Fitchett, J. Bell, K. Pruess, A. Hagen, G. Weekman, and W. Rapp.

SUMMARY OF INSECT CONDITIONS - 1957

MINNESOTA

Reported by R. Flaskerd, Hart Graeber, T. T. Aamodt, W. P. Trampe, and J. R. Sandve

Cereal and Forage Crop Insects: EUROPEAN CORN BORER (Pyrausta nubilalis) - Overwintering mortality for the State averaged 18 percent this past spring. Pupation of overwintering borers began during the week of June 3 and emergence began during the week of June 17. Ideal weather conditions prevailed at egg hatch and during borer development, accounting for the higher populations especially in the southwestern and west central districts. Heavy second-generation moth flights during the week of August 18 resulted in high egg counts especially in south central, southwest, and west central districts. In the southwest and south central districts, second-generation borer numbers were as high as expected but in the west central district the high egg count produced fewer borers than anticipated. The 1957 fall survey showed higher populations statewide than in 1956, with a correspondingly greater damage to corn. Losses due to corn borer damage were increased because of the greater amount of stalk breakage and dropped ears resulting from the weather-delayed harvest. Fall survey counts of borers per 100 plants by districts averaged as follows: southwest-208, south central-121, southeast-40, west central-69, central-48, east central-19. GRASSHOPPERS - Spring and early summer were characterized by long periods of wet, cool weather over much of the State. Vegetative growth was greatly accelerated and soil temperatures remained low; this resulted in a delayed egg hatch. Melanoplus femur-rubrum, the dominant species, was greatly influenced by these conditions. Damage by grasshoppers was not apparent in most areas because of the rapid plant growth. Fungus disease stimulated by damp weather conditions caused considerable mortality of grasshoppers during the hatching period and extended into the egg-laying period. This is the first year that high numbers of Melanoplus femur-rubrum have been observed to be infected with fungus disease. Late summer and fall weather conditions were favorable for egg deposition over most of the State, especially in the Red River Valley area. It appears that M. bivittatus and M. differentialis populations are building up in scattered areas. Predators observed during egg survey were generally less numerous than in 1956. Surveys indicate considerable infestations might occur in the northwestern area and possibly in some southern areas. In most instances grasshopper infestations occurred in legumes and grasses to be used for hay; for that reason it is quite difficult to get a correct estimate of the overall economic savings or losses. Where spraying was done, it prevented infestations from spreading into nearby crops. Information gathered from county agent reports indicates that the State as a whole had a saving of \$591,450 due to spraying, and that a loss of \$1,404,350 was sustained where spraying was not done. SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) was first reported in southeastern Minnesota on May 9, 8 per 50 sweeps. By the end of May extremely heavy numbers were found in all districts on alfalfa, bromegrass, flax, and small grains. Aster yellows in flax was extremely damaging, especially in the Red River Valley area. Loss estimates by county agents range from 10-80 percent. It has been further estimated by grain companies and others that the State's flax harvest was the smallest since 1936. The yield per acre is also the lowest since 1936. Aster yellows played the major role in this reduction. POTATO LEAFHOPPER (Empoasca fabae) was found in Minnesota on May 23. Some yellowing which appeared in new seedings of alfalfa in southern counties in late summer was probably caused by this insect. SPOTTED ALFALFA APHID (Therioaphis maculata) was found in an alfalfa field in Houston County May 23 and a single specimen was reported from Lincoln County. These were the only specimens found throughout the 1957 season. BLISTER BEETLES (Epicauta spp.) increased over 1956. They were numerous in alfalfa. Movement of beetles from alfalfa to soybeans caused much concern to farmers in west central and central districts. Some chemical control was applied on soybean field margins. Areas having low grasshopper egg counts in 1957 presumably will have low blister beetle

populations in 1958. GREEN CLOVERWORM (*Plathypena scabra*) was reported in July damaging various crops such as alfalfa, soybeans, corn, peas, and garden plants. Damaging populations were first reported in 1945 on experimental soybean plots and were not again observed until this year. Complete defoliation of soybeans and seedling alfalfa was observed. Damage was most prevalent on soybeans. In many cases defoliation of seedling alfalfa was not noticed until after oat harvest. A LOOPER (*Rachiplusia ou*) was also reported in July in the extreme southern counties on soybeans, garden plants, and corn. There were scattered reports of spraying for control of *R. ou* and *P. scabra*. STALK BORER (*Papaipema nebris*) was reported in the south central district in July. Damage was confined to cornfield margins. PEA APHID (*Macrosiphum pisi*) populations in May were extremely heavy in central and west central areas on alfalfa. Predator populations were low and cool weather favored aphid development. Some chemical control was carried out in the west central district. In June pea aphid populations declined and were not a problem the balance of the season in alfalfa. PLANT BUGS (*Adelphocoris* spp., *Lygus* spp.) are of concern mainly to legume-seed growers. In the northwest district, where most of the growers are located, use of chemical control measures is increasing. Damaging populations were reported in the northwest district in June resulting in severe blasting of buds. SWEET-CLOVER WEEVIL (*Sitona cylindricollis*) overwintering adults were numerous and fed heavily on sweetclover during May in the northwest district. Some alfalfa fields also showed considerable damage. Heavy emergence of the summer brood took place in July and migration to new seedling sweetclover was observed. Emergence from fallow fields resulted in heavy marginal damage to adjacent sweetclover stands in the northwest district. BILLBUGS (*Calendra* spp.) - Scattered reports of heavy damage to corn in low lands. Some reseeded was required. PAINTED-LADY (*Vanessa cardui*) larvae were reported in July moving from thistles to soybeans. A FLEA BEETLE (*Systena frontalis*) was reported damaging soybeans in the west central district. CUTWORMS caused some loss to sugar beets in Norman County. A number of fields were replanted. WIREWORMS - Scattered reports of damage to corn. An insect, (probably of the *Septis* group) was found extremely abundant in all wild rice areas during harvesting operations.

Fruit Insects: CODLING MOTH (*Carpocapsa pomonella*) at LaCrescent moths 95 percent emerged by May 17. In 1956 the first moths were found during the first and second week of June in southern Minnesota. The earlier emergence in 1957 coincided quite closely with the season which was 10-14 days earlier than 1956 insofar as apple development was concerned. ORCHARD MITES (*Panonychus ulmi*, *Tetranychus telarius*) - Damage more severe than 1956. Miticides used in commercial orchards quite generally during season. APPLE MAGGOT (*Rhagoletis pomonella*) emerged, July 6, at LaCrescent - peak of emergence occurred during middle of July. APPLE CURCULIO (*Tachypterellus quadrigibbus*) - Very little damage found. PLUM CURCULIO (*Conotrachelus nenuphar*) emerged in southeastern Minnesota during week of June 2. Damage light in sprayed commercial orchards but severe on apples and plums on backyard unsprayed trees. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - Increasingly important in commercial apple orchard areas throughout entire south-east area of State during 1957. Due to prevailing cool weather, egg hatch was delayed (about 50 percent hatch at LaCrescent on May 28. Control achieved in first, second and third cover sprays. FRUIT TREE LEAF ROLLER (*Archips argyropila*) was not a serious problem in 1957. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) emergence began at LaCrescent on May 23. Control successful in commercial orchards. SAN JOSE SCALE (*Aspidiotus perniciosus*) was found at LaCrescent on three trees. STRAWBERRY LEAF ROLLER (*Ancyliis comptana fragariae*) was present mainly in neglected fields. Serious in several fields in LaCrescent area. WHITE GRUBS (*Phyllophaga* sp.) were troublesome throughout growing season, mainly a problem in fields preceded by grass sod. SPIDER MITES (mainly *Tetranychus telarius*) - Infestations serious in strawberries in many areas. Some varieties resistant. Chemical treatment effective. CYCLAMEN MITE (*Steneotarsonemus pallidus*) - Duluth and Iron Range areas - infestation serious in most varieties of strawberries. RASPBERRY SAWFLY (*Monophadnoides geniculatus*) was often severe in unsprayed raspberry fields. RASPBERRY CANE BORER (*Obera bimaculata*) was severe in many old raspberry fields.

Truck Crop Insects: ONION MAGGOT (*Hylemya antiqua*) population was high in the Anoka area. Protection of onions with insecticides (seed and soil treatments) prevented heavy losses. Infestation in Hollandale area generally low - seed treatment gave adequate protection. Examination of two onion fields in Anoka County revealed lower overwintering populations than a year ago. SIX-SPOTTED LEAFHOPPER caused severe losses to carrots due to aster yellows in Twin City area and aster yellows were severe on celery in Twin City, Hibbing and Duluth areas. Purple top was present on up to 10 percent of potatoes in Red River Valley areas and on up to 90 percent in Internationals Falls area.

Forest, Ornamental and Shade Tree Insects: The outstanding threat at the present time to the spruce-fir region of Minnesota is the current outbreak of the SPRUCE BUDWORM (*Choristoneura fumiferana*). Detection surveys in 1954 indicated that light populations were present wherever balsam fir occurred in the Superior National Forest. Since that time budworm populations have increased to alarming numbers; in 1957 many thousands of acres of balsam-fir and spruce suffered heavy defoliation. The prospects, according to 1957 surveys are that the populations will maintain itself or increase markedly in 1958. An aerial survey conducted in July 1957, showed moderate to heavy defoliation over approximately 660,000 acres of spruce-fir type in northeastern Minnesota. This is an increase of about 240,000 acres over that observed in 1956 and 580,000 acres over that of 1955. No tree mortality has been observed except on a small island in Wind Lake (T64N R9W Sec. 19). However, some top killing is evident north of Lake Kabetogama and in the vicinity of Jackfish Bay. In 1957, noticeable defoliation was evident along the north shore section of the Superior National Forest. Several thousand acres of overmature balsam fir in this area were found to be heavily defoliated. The LARCH SAWFLY (*Pristiphora erichsonii*) infestation of tamarack continues in Minnesota for the ninth consecutive year. An aerial survey indicates that the total area of defoliation was approximately the same as in 1956. The majority of stands showing heavy to complete defoliation are located in the northeast district of the State and most stands in Koochiching and Itasca Counties in the north central district. Tamarack mortality is evident on good sites in most north central bogs of the State. This mortality has shown a slight increase in 1957 over 1956. Population of the second brood of the INTRODUCED PINE SAWFLY (*Diprion similis*) were numerous in many areas of Crow Wing and Cass Counties causing heavy defoliation of white pine. Second-brood larvae continued feeding until late October causing heavy defoliation. Some top killing of white pine may become evident in the spring of 1958, as a result of sawfly feeding in the fall of 1957. During September some control spraying was carried out by private landowners around Gull Lake and Lake Hubert. This infestation will warrant careful watching in 1958. If populations continue to increase, additional control work may become necessary in order to protect valuable stands of white pine. The JACK-PINE BUDWORM (*Choristoneura pinus*) infestation since 1954 has shown considerable fluctuations in population and the extent of areas infested. In 1957 the infestation in Crow Wing, Hubbard, Cass, Beltrami and Pine Counties generally declined and in many instances the infestation disappeared completely. Damage in these areas is generally very light with little top kill and practically no mortality of merchantable timber. In July and August three new areas of jack-pine budworm defoliation were observed for the first time during the current outbreak. The defoliation in these areas is generally moderate and no chemical control is contemplated in 1958. Due to the decline of the jack-pine budworm populations in 1957, very little spraying was done. In Hubbard County approximately 500 acres of jack pine on State land were sprayed. This area was composed largely of jack pine plantations that had been severely defoliated in 1956 and which had a high level of budworm populations again in 1957. A JACK-PINE EUCOSMA (*Eucosma sonomana*) caused up to 50 percent terminal breakage in one stand of jack pine in Hubbard County. PINE ROOT COLLAR WEEVIL (*Hylobius radialis*) was reported from the east central district and infested from 26 percent to 50 percent of trees in jack pine plantations. Moderate infestations were reported on Scotch pine. Heavy PITCH TWIG MOTH (*Petrova comstockiana*) infestations on

jack pine were observed near Park Rapids and Brainerd. RED-HEADED PINE SAWFLY (Neodiprion lecontei) caused moderate defoliation on young jack pine trees in Sherburne and Benton Counties. Heavy infestation of CONE BARK BEETLES (Conophthorus spp.) on red pine cones reported in Cass County. PINE TORTOISE SCALE (Toumeyella numismaticum) populations were lighter than in 1956. A moderate infestation was reported on a Scotch pine plantation near Brainerd. BALSAM-FIR SAWYER (Monochamus marmorator) infested 25 percent of susceptible trees in a stand near Bemidji. BALSAM TWIG APHID (Mindarus abietinus) infestations were reported heavy in scattered locations in north central and northeastern Minnesota. YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) severely defoliated white spruce in south St. Louis County. Some mortality of trees is expected due to this infestation. APHIDS (Cinara spp.) were reported in heavy concentrations on spruce (ornamental) over much of the State. They were more of a problem in 1957 than in the past. ASH PLANT BUG (Neoborvus amoenus) was a problem statewide and appears to be on the buildup. BROWN-HEADED ASH SAWFLY (Tomestethus multicinctus) heavily defoliated ash trees in a wind-break in central Minnesota. WALKINGSTICK (Diaperomera femorata) infestations are localized and defoliation generally light to moderate. Widespread damage to burr oak near Brainerd and Mora by SCALE INSECTS (Kermes spp.). A heavy infestation of POPLAR and WILLOW BORER (Sternochetus lapathi) was observed in a Twin City area nursery. OYSTERSHELL SCALE (Lepidosaphes ulmi) infestations appeared quite static the past several years.

Insects Affecting Man and Animals: A case of MYIASIS was reported this past summer in a child. The larvae were excised by a physician from pustules on side of the child's neck and were determined by the University of Minnesota, Entomology Department, to be the species Wohlfahrtia vigil. A WOOD ROACH (Parcoblatta pennsylvanica) was particularly abundant in homes located in wooded areas around the Twin Cities. The AMERICAN DOG TICK (Dermacentor variabilis) was quite abundant and was somewhat higher than usual. BIRD MITES were reported from homes with birds nesting or roosting under eaves or between walls. POWDER POST BEETLES caused serious damage to structural timbers in a barn in southern Minnesota. TOBACCO MOTH (Ephestia elutella) caused considerable consternation to a Grade A milk producer in Nobles County. Populations were so heavy in alfalfa hay that milk sanitation was difficult. MOSQUITOES - Emergence of early single-brooded mosquitoes occurred in late April and approximately the first week in May in Twin City area. There was limited emergence of the principal pest mosquito, Aedes vexans, by May 3. By May 17, early single-brooded species in Itasca Park had also emerged and adults were active. Heavy rains during the third week in May resulted in heavy emergence of mosquitoes during the first week in June throughout most of the State. Heavy rains during the middle of June resulted in further hatching with many fourth-instar larvae present on June 18 with emergence occurring about June 22. Continued wet weather brought additional hatching and by July 12, heavy populations were quite general throughout the State. Flood conditions in western central Minnesota early in July apparently caused some increase in mosquito populations in that area creating concern among farmers as to possible adverse effects on milk and beef production. There appeared to be no further large-scale hatches but mosquito populations persisted at rather high levels into August and September. Cool weather together with favorable moisture conditions permitted survival of adult mosquitoes during the late summer and early fall. Some mosquitoes were noticeable even as late as the first part of October. Generally speaking, the 1957 season was one of peak mosquito abundance. There was an increased interest in municipal mosquito control throughout the State, and many towns and villages purchased their own equipment for applying insecticides or hired the work done by local ground or aerial sprayers. Two infestations of SUBTERRANEAN TERMITES (probably Reticulitermes flavipes) were reported from St. Paul; one in a private home and one in a warehouse. These are the first authenticated reports of termites in the Twin City area. Termites previously have been reported from Worthington and Luverne.

INSECT CONTROL

<u>Canning Crop Insects:</u>	<u>Acreage Treated</u>
European Corn Borer	
First Generation	
Ground Spray	4847
Aerial Spray	474
	5,321
Second Generation	
Ground Spray	19,693
Aerial Spray	24,243
	43,936
Corn Earworm (Aerial Spray)	411
Pea Aphid (Aerial Spray)	16,555
<u>Field Crop Insects 1/</u>	
Grasshopper (all crops)	85,905
European Corn Borer (Field Corn)	66,910
Cutworms (Corn, Sugar Beets)	9,721
Aphids (Barley, Oats)	4,153
Sweetclover Weevil (Sweet Clover)	15,500
Red Clover grown for seed (Plant Bugs, etc.)	4,880
Alsike Clover grown for seed (Plant Bugs, etc.)	4,300
Alfalfa grown for seed (Plant Bugs, Pea Aphids, etc.)	2,380
Northern Corn Rootworm	61,588
Wireworms (Corn) Seed Treatment	125,500
Soil Treatment	23,118
Loopers (Green Cloverworm on Soybeans and Alfalfa)	6,975
Sugar Beets - Beet Webworm	10,150
Cutworms	3,325
Wireworms	3,450
	16,925
<u>Forest Insects:</u>	
Jack-pine Budworm	1,000
Spruce Budworm	100
Introduced Pine Sawfly	60
Forest Tent Caterpillar	50
<u>Biting Insects:</u>	
Mosquitoes	37,885 <u>2/</u>

1/ Estimated by County Agents

2 / Incomplete figure

OREGON - ADDITIONAL SUMMARY NOTE FOR 1957

MOUNTAIN PINE BEETLE (*Dendroctonus monticolae*) attacking lodgepole, increased in averages of infestation from 52,420 acres in 1956 to 71,200 acres in 1957. These infestations are located in the Deschutes and Rogue River National Forests. ENGELMANN SPRUCE BEETLE (*D. engelmanni*) infestations were up 14,120 acres (from 1956) to 25,280 acres in 1957. The concentration of damage by this beetle is located in the Wallowa-Whitman National Forest. (Capizzi). (See CEIR, Vol. 8, No. 5, p. 79).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

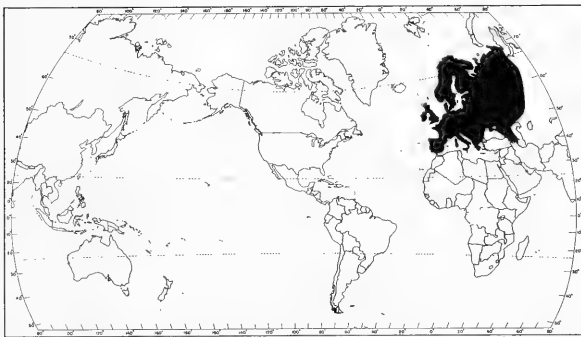
PEA THRIPS (Kakothrips pisivorus Westwood)

Economic Importance: Pea thrips frequently causes extensive losses of peas and beans throughout Europe. In Sweden it is considered one of the most important pests of beans. It was first observed in that country in 1899 and in 1912 caused such serious damage that some of the crops were reduced to one-third and even to one-quarter of the normal yield. During the following years the losses involved were estimated at about 50 percent. Crop losses in late peas may be as much as 50 to 60 percent in northern Germany and complete loss of crop has been known in some districts of England. The flowers, pods and terminal shoots of host plants suffer most from attack. The pods are undersized and unhealthy, presenting a characteristic silvery appearance. Occasionally the flower itself is injured so severely that further development is unlikely.



Damage to Peas by Pea Thrips

Distribution: Occurs throughout Europe including the Caucasus in USSR.



General Distribution of Pea Thrips

* Also called bean thrips, "Blackfly" (Thripidae, Thysanoptera) No. 40 of Series

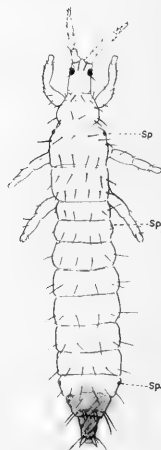
Hosts: Known to feed on many wild and cultivated hosts, but prefers legumes, especially beans and peas.

Life History and Habits: The adults appear in June and oviposit until late July with the eggs usually being laid in the stamen-sheaths of the hosts. The eggs hatch in about a week. The nymphs feed for about two weeks, passing through two instars, then enter the soil for hibernation at depths of 2-16 inches. In Switzerland up to 375 nymphs per square yard were found at depth of 16 inches with none being observed in meadow-land adjoining the pea fields. The nymphs hibernate for about 10 months, passing through 2 additional instars. After transformation, the adults rest for 2 days before emerging from the soil and then enter a preoviposition period that lasts from 7 to 13 days. The females lay an average of 17 eggs at the rate of 1 to 4 per day.

Description: Egg very small and bean-shaped. Second-instar nymph 1.8 mm. long, yellow to orange-yellow in color, apex of 9th and entire 10th abdominal segments brown. Posterior dorsal margin of 9th abdominal segment with comb of fine triangular spines, 9th and 10th segments each with pair of heavy spinelike postero-dorsal setae. Adult female 1.85 mm. in length, dark brown. Forewings heavily tinged with brown, lighter at base, hindwings almost transparent. Ocelli present, forming an equilateral triangle. A pair of long setae between posterior ocelli, another long seta behind each eye. Antennae 8-segmented; 3rd and 4th segments paler ventrally, 3rd with dorsal, 4th with ventral forked sense cone. Prothorax wider than long and longer and wider than head with two pairs of long setae on anterior margin, two pairs at each posterior angle and a smaller median posterior pair. Legs normal, all tarsi yellow, fore tibiae brown. Costa and both longitudinal veins of wing with complete row of setae. Posterior margin of eighth tergite with comb of fine setae. The adult male about one-sixth smaller than female, antennae much paler than in female. On each side of eighth abdominal segment is a short, curved, blunt-pointed process extending posteriorly. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8 (7) 2-14-58

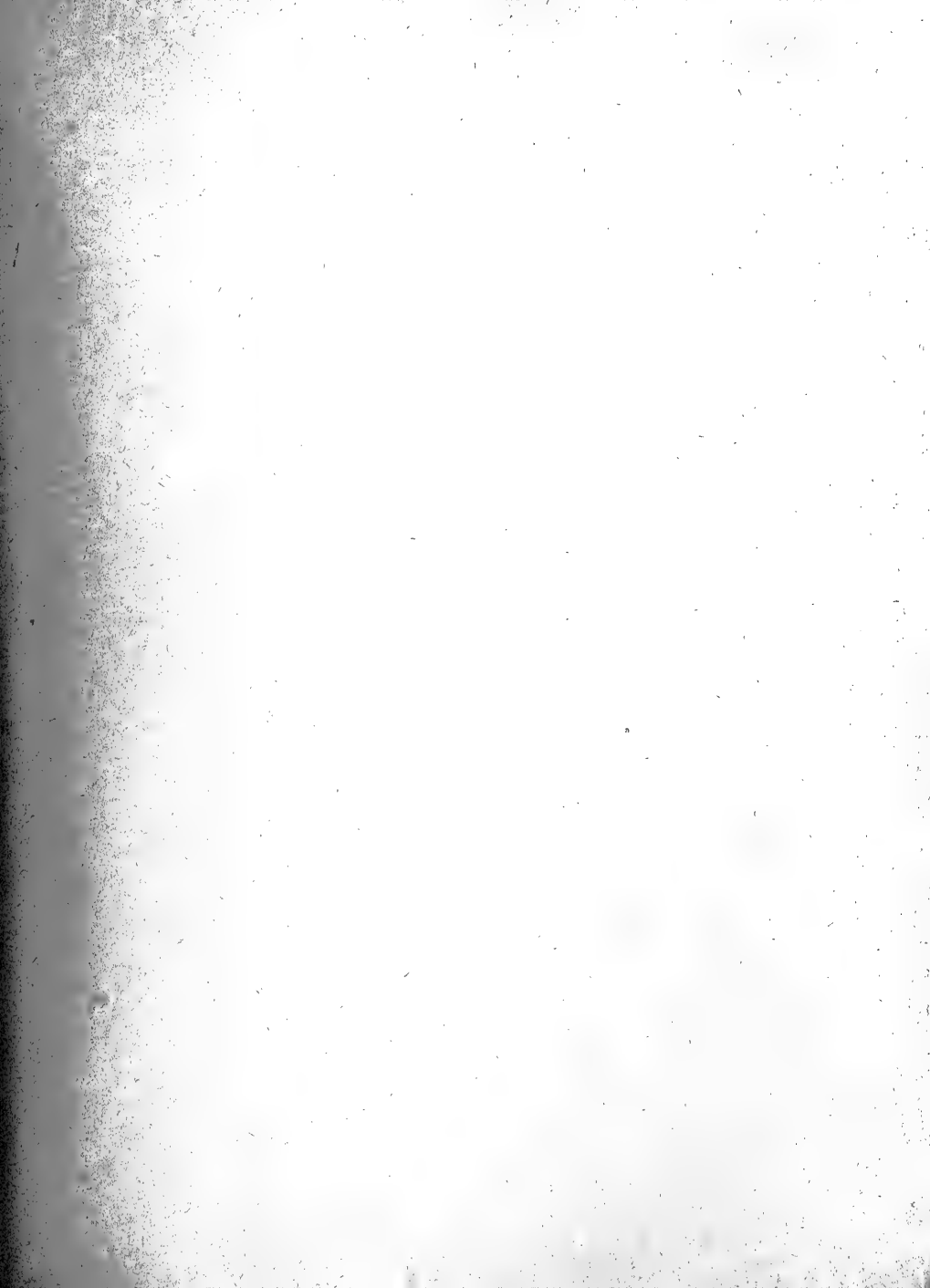


Adult Female



Second Stage Nymph

Figures (except map): Nymph and adult from Williams, C. B. 1915. Ann. Appl. Biol. 1(3/4):222-246. Damage from Buhl, C. 1937. Ztschr. f. Angew. Ent. 23(1):65-113.





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FEBRUARY 21, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

**PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE**

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

PEA LEAF WEEVIL active and damaging legumes in Willamette Valley. (p. 125).

PEAR PSYLLA ovipositing in Jackson County, Oregon. Adults active at Prosser, Washington. (p. 125).

Increased abundance of FOXGLOVE APHID eggs in northeastern Maine. (p. 126).

Distribution of BANDED CUCUMBER BEETLE. (p. 129)

SUMMARY OF INSECT CONDITIONS in some countries of the Near East, South Asia and Africa - 1957. (Afghanistan p. 131, Ethiopia p. 133, Iran p. 134, Iraq p. 136, Lebanon p. 137, Libya p. 138, Pakistan p. 140).

Reports in this issue are for the week ending February 14 unless otherwise designated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-FEBRUARY TO MID-MARCH 1958

The Weather Bureau's 30-day outlook for the period mid-February to mid-March calls for temperatures to continue to average below seasonal normals east of the Continental Divide with greatest departures over the northeast quarter of the nation. A warming trend is indicated during the first half of March over the Southeast where it has been abnormally cold. West of the Divide above normal temperatures are predicted. Precipitation is expected to exceed normal over the northwest quarter of the country and also along the Gulf and South Atlantic Coasts. Subnormal amounts are indicated in the far Southwest and also in the region of the Great Lakes. In unspecified areas near normal is predicted.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING FEBRUARY 17

Last week's weather pattern was much the same as that for the week ending February 10. Temperatures were extremely cold east of the Rockies and unseasonably mild west of the Continental Divide, and heavy precipitation was again limited to areas in the Pacific and Gulf States. East of the Rockies the second consecutive very cold week, with history making snows along the Gulf and middle and north Atlantic coasts and additional freezes deep into Florida, was climaxed by another weekend severe cold wave. From the 10th through the 14th below freezing temperatures with snow, sleet, and freezing rain moved across the Gulf States from Texas to Florida. On the 12th and 13th another freeze in the Rio Grande Valley of Texas caused spotted crop damage. An inch of snow was measured at Lake Charles, La., on the morning of the 12th; it all melted before noon. By evening of the 12th the heaviest snow in a half century blanketed parts of the central and east Gulf coasts. Two inches covered the ground at New Orleans, La., and Burrwood in the extreme southeastern tip of the State measured 1.5 inches. In the Mobile, Ala., area 1.5 inches fell at Fort Morgan, 2 inches covered the deck of a pilot boat anchored 6 miles off shore, and on the morning of the 13th the temperature fell to 16° over a 1-inch snow cover. Tallahassee, Fla., measured 3 inches of snow, the most there since records began in 1895. In northern Florida the cover on the 13th extended as far south as the Suwanee River. On the morning of the 14th below-freezing temperatures again extended into southern Florida. On the 13th and 14th precipitation was general in the mid-continent area, falling as snow southward to the northern portions of Mississippi, Alabama, and Georgia. From the 15th to the 17th, a new storm formed in the Gulf, crossed the Southeast, and moved northward along the coast to Maine, bringing moderate rains to Gulf and south Atlantic coastal areas and heavy snows to the Appalachian and northeastern areas.

Snowfall during the storm exceeded a foot over much of the Appalachian region and northeast. In northeastern Alabama, Haleyville reported a depth of 12.5 inches on the 15th. In North Carolina the storm left a cover ranging from 8 to 12 inches in the mountains, and 1 to 6 inches in the Piedmont region. Washington, D. C., reported 14 inches; Baltimore, Md., 15.5 inches; and Allentown, Pa., 18 inches. Eighteen inches fell in much of eastern New York and 10 to 20 inches over most of New England. At Boston, Mass., a fall of 19.4 inches set new records for a single storm and for 24 hours. On the 17th Burlington, Vt., measured its deepest snow on record, 32 inches. High winds during and after the storm caused heavy drifting which greatly hampered transportation. A cold wave following in the wake of the storm brought subzero temperatures as far south as the northern portions of Arkansas, Alabama, and Georgia, and another freeze deep into Texas and Florida. A low of -23° at Clingman's Peak in the mountains of western North Carolina on the 17th was the lowest temperature ever recorded in that State. Average temperatures for the week ranged from 10° to 20° below normal east of the Rockies, and from 3° above normal in southern areas west of the Continental Divide to 12° in the north. In the Pacific Northwest, abnormally mild weather has persisted for as long as 10 weeks in some areas. In Washington, vegetative growth is 3 to 6 weeks ahead of normal and fruit buds are beginning to swell. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*) - OKLAHOMA - Averaged 20-30 per linear foot on wheat in Hennessey area, Kingfisher County. Light, scattered damage evident. Few fields have been sprayed. (Owens). Several fields negative in Granite-Lone Wolf area, Greer and Kiowa Counties. (Hudson).

CHINCH BUG (*Blissus leucopterus*) - OKLAHOMA - Report of survey in 24 additional counties showed the number of bugs in hibernation per square foot of bunch grass averaged 0-3,517. This completes the study. (Fed.-State Chinch Bug Survey).

COWPEA APHID (*Aphis medicaginis*) - NEW MEXICO - Light to moderate infestations on alfalfa, roses and pyracantha, Dona Ana County. (Nielsen).

CLOVER SEED CHALCID (*Bruchophagus gibbus*) - VIRGINIA - Larvae heavy in birdsfoot trefoil seed received from out of State at Blacksburg, Montgomery County, for experimental purposes. (Evans).

SLUGS - OREGON - Damage greater than usual to legumes and fall-sown grain, due to mild winter weather. (Dickason, Every).

PEA LEAF WEEVIL (*Sitona lineata*) - OREGON - Adult activity increasing as unusually mild weather continues, Forest Grove. Adults averaged 1 per 5 sweeps on red clover, February 2, and 20 per 5 sweeps in same fields, February 7. About 15 weevils collected February 7 had laid about 2 dozen eggs by February 10, indicating this species is capable of ovipositing in midwinter in Washington County. (Prescott). Active and damaging seedling field peas, vetch, clover and alfalfa, Polk and Yamhill Counties, Feb. 12. Damage recent, apparently occurring during brief periods of warm weather, and indicating considerable economic importance in Willamette Valley during 1958. (Dickason, Every).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - One new infestation found in Fulton County, KENTUCKY. All inspections negative in KANSAS, NEBRASKA and WISCONSIN. (PPC, Cent. Reg., Jan. Rept.).

FRUIT INSECTS

PEAR PSYLLA (*Psylla pyricola*) - OREGON - Fairly high population of winter adults on pear trees since latter part of January, Jackson County. First eggs found February 3. Considerable egg laying February 9. (Gentner). WASHINGTON - Overwintering adults active in pear orchards near Prosser, Benton County. (Brannon).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - WASHINGTON - Living adults and nymphs on apple limbs at Pullman, Whitman County, February 5. This is first time in 5 years this species has been alive on aerial growth in February. Lowest temperature recorded to date was 16° F. in November. (Johansen).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - VIRGINIA - Very heavy on peach trees in small orchard, Middlesex County. (Rollins).

A THRIPS (*Frankliniella occidentalis*) - CALIFORNIA - Medium on lemon and tangerine at Chula Vista, San Diego County. (Cal. Coop. Rept.).

GREEN PEACH APHID (*Myzus persicae*) - OREGON - Preliminary survey shows practically no eggs wintering on peach trees. (Gentner).

TRUCK CROP INSECTS

IMPORTED CABBAGEWORM (*Pieris rapae*) - CALIFORNIA - Light on cabbage in San Fernando Valley, Los Angeles County. (Cal. Coop. Rept.).

CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Local heavy infestation in cabbage and red cabbage, with 75 percent of heads unmarketable in one field, San Fernando Valley, Los Angeles County. (Cal. Coop. Rept.).

CABBAGE APHID (*Brevicoryne brassicae*) - GEORGIA - Light infestations on cabbage and turnips, Colquitt and Thomas Counties. (February 12, Johnson).

ARTICHOKE PLUME MOTH (*Platyptilia carduidactyla*) - CALIFORNIA - Light on artichokes in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

ONION THRIPS (*Thrips tabaci*) - GEORGIA - Light to moderate infestations on onions, Tattnall County. (February 11, Johnson). CALIFORNIA - Very light infestations in onion fields in Coachella Valley, Riverside County. (Cal. Coop. Rept.).

ORANGE TORTRIX (*Argyrotaenia citrana*) - CALIFORNIA - Medium larval infestation on bushberries in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

A LEAF BLOTCH MINER - CALIFORNIA - Heavy larval infestation in bark of bushberries in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

Increased abundance of foxglove aphid eggs in northeastern Maine. Aphid eggs on hawkweed in northeastern Maine during late November 1957 were about five times as abundant at infested stations as at that time in 1956. They were found at 4 out of the 10 sampling stations as compared to only 2 a year ago. The present situation resulted in part because foxglove aphids on hawkweed were both actually and relatively more abundant in the fall of 1957 than during that season of 1956. They were about twice as abundant during the fall as they were a year ago, and the percent of plants infested was about one and a half times as large. Also, because of the open, late fall in 1957, likely a higher percentage than usual of the oviparae matured and deposited eggs. On the basis of past experience and of information at hand it would appear that foxglove aphid eggs are now present at most sampling stations. With favorable weather, populations of this aphid developing on hawkweed in the spring of 1958 could be larger than a year ago. (Wave)

TOBACCO INSECTS

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - GEORGIA - Infestations light on tobacco plant beds, Tift, Colquitt, Thomas, Cook, Berrien and Coffee Counties. (February 13, Johnson).

SPRINGTAILS - GEORGIA - Light to moderate infestations on tobacco plant beds, Tift, Colquitt and Cook Counties. (February 11, Johnson).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

GYPSY MOTH (*Porthetria dispar*) - NEW YORK - Scouting around 1957 attracting-trap sites in Clinton County nearing completion, with small infestations found at or near 18 of these sites. NEW JERSEY - Intensive scouting of approximately 500 acres at each of three positive 1957 trap sites completed. No evidence

of infestations found. Trapping plans for WEST VIRGINIA, VIRGINIA, DELAWARE, MARYLAND and NEW JERSEY in 1958 have been completed. (PPC, East. Reg., Jan. Rept.).

BROWN-TAIL MOTH (*Nygmia phaeorrhoea*) - MAINE - Light infestation found in small stand of wild plum. All 41 webs were cut and burned immediately. (PPC, East. Reg., Jan. Rept.).

COTTONY MAPLE SCALE (*Pulvinaria innumerabilis*) - WASHINGTON - As in 1956, infestations are very heavy on maples in Pullman area, Whitman County. (Dailey).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - ARKANSAS - Increasing activity noted in the Bradley County area where control has been applied. Activity also reported in Nevada County. (Ark. For. Pest Rept.).

A PINE SAWFLY - ARKANSAS - Surveys show about 45,000 acres involved in area of heaviest attack, with spotty infestations south of El Dorado to the Louisiana State line, Union County. (Ark. For. Pest Rept.).

AN ARBORVITAE APHID - OKLAHOMA - Heavy on arborvitae in Tulsa, Tulsa County. (Pinkston).

AZALEA LEAF MINER (*Gracilaria azaleella*) - CALIFORNIA - Medium infestation in azalea leaves in Pleasant Hills area, Contra Costa County. (Cal. Coop. Rept.).

A LEAF ROLLER (*Platynota stultana*) - CALIFORNIA - Medium infestation on azaleas in Pleasant Hills area, Contra Costa County. (Cal. Coop. Rept.).

LONG-TAILED MEALYBUG (*Pseudococcus adonidum*) - CALIFORNIA - Medium infestation on mondograss at Carpinteria, Santa Barbara County. (Cal. Coop. Rept.).

A WHITEFLY (*Pealius kelloggi*) - CALIFORNIA - Nymphs heavy on Prunus lyoni in Sacramento, Sacramento County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

EAR TICK (*Otobius megnini*) TEXAS - Averaged 4 per ear per head of 18 range cattle examined in Travis County. (Garner). NEW MEXICO - Moderately heavy in ears of cattle, Dona Ana and Luna Counties. (Nielsen).

CATTLE LICE - NEW MEXICO - Lighter than usual throughout State for past month. (Nielsen).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - VIRGINIA - Averaged 23 per animal in one herd, Augusta County. (Turner).

FOWL TICK (*Argas persicus*) - CALIFORNIA - Light infestation in chicken houses at Ridgecrest, Kern County. (Cal. Coop. Rept.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (*Trogoderma granarium*) - MINNESOTA - Inspections in Duluth, Rush City, Cologne and Northfield during January were negative. (PPC, Cent. Reg.). VIRGINIA - Inspections of off-farm storage facilities were initiated in the eastern area during January, and will include establishments in 25 counties. Purpose of survey is to complete initial survey begun in 1957. PENNSYLVANIA - Four inspections in Philadelphia district were negative. (PPC, East. Reg., Jan. Rept.).

BENEFICIAL INSECTS

A SNOUT MITE - CALIFORNIA - Adults medium on navel orange at Fresno, Fresno County. (Cal. Coop. Rept.).

MISCELLANEOUS INSECTS

CLOVER MITE (*Bryobia praetiosa* complex) - OKLAHOMA - Severe infestation in dwelling Oklahoma City, Oklahoma County. (Shaw). VIRGINIA - Heavy on window sills and books on shelves in school, Appomattox County. Det. L. Cagle. (Rowell, Smith).

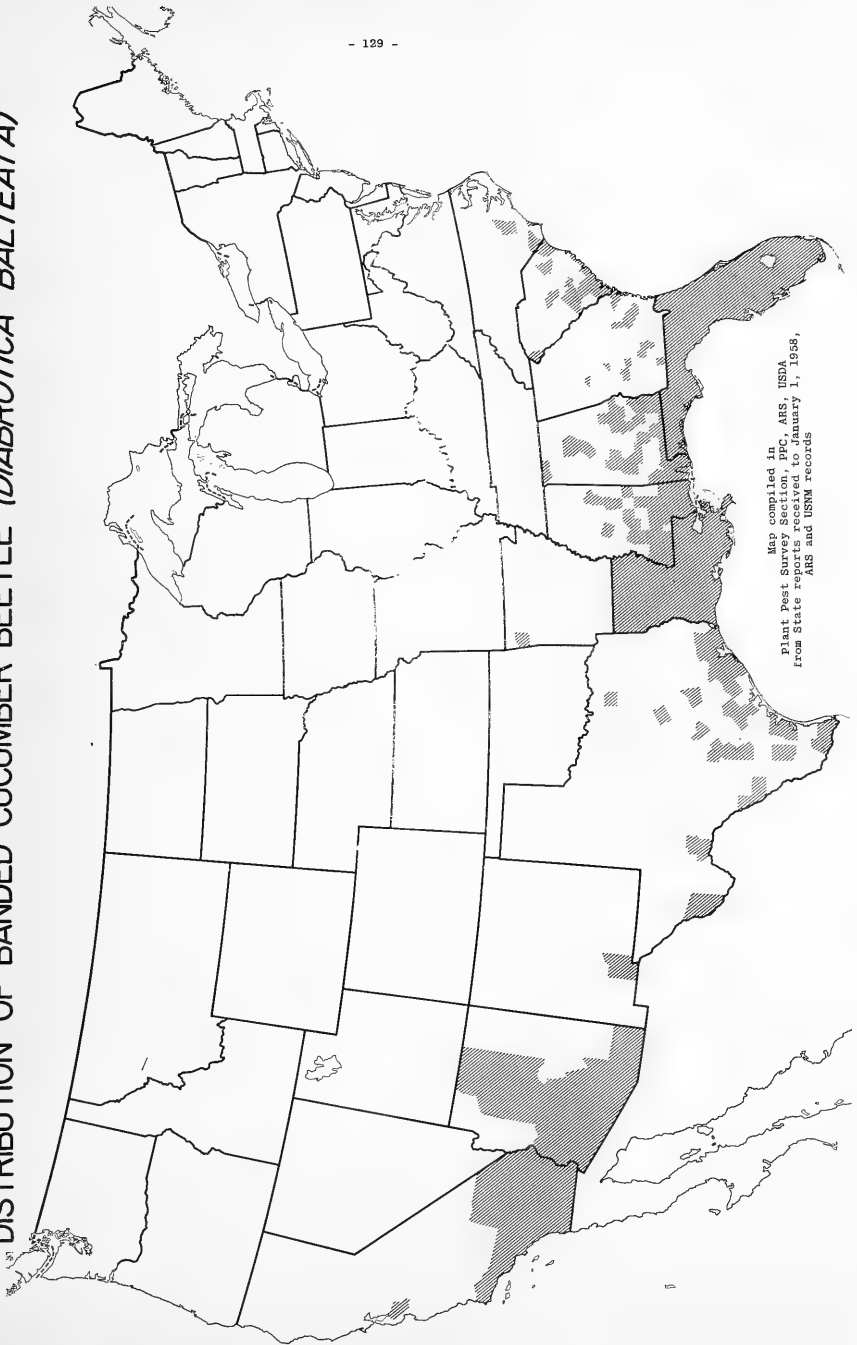
IMPORTED FIRE ANT (*Solenopsis saevissima v. richteri*) - TEXAS - Three new infested counties are Liberty, Harris and Tyler Counties. (Turney). MARYLAND - During January 214 acres were surveyed in Howard County. No imported fire ant found. (PPC, East. Reg., Jan. Rept.).

TERMITES - CALIFORNIA - Specimens of *Cryptotermes brevis* were taken from plywood of folding chairs packed in crates from the Hawaiian Islands and stored in a warehouse at Sacramento. This insect does considerable damage in the Hawaiian Islands and, although is not known to occur in California, could possibly exist in parts of the State. Specimens of *Coptotermes formosanus* were also taken in the same shipment. (Cal. Coop. Rept.).

LIGHT TRAPS

	Hel. zea	Pseud. unip.	Plath. scab.	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subt.	Prod. ornith.
<u>FLORIDA</u>								
Quincy 1/20					1			2
Sanford 1/23-29		1			5			
<u>SOUTH CAROLINA (Counties)</u>								
Charleston 2/3-9					1		2	
Oconee 2/8-14			3					
<u>TEXAS</u>								
Brownsville 2/2-8	2	30		52	7	8		16

DISTRIBUTION OF BANDED CUCUMBER BEETLE (*DIABROTICA BALTEATA*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA
from State reports received to January 1, 1958,
ARS and USNM records

SUMMARY OF INSECT CONDITIONS IN SOME COUNTRIES OF THE
NEAR EAST, SOUTH ASIA, AND AFRICA

1957

The summaries of insect conditions that follow have been submitted in the 1957 Annual Report of the Regional Insect Control Project with headquarters in Beirut, Lebanon. The first attempt to present information on the more important insect pests of the Near East and South Asia in the Cooperative Economic Insect Report was made in 1955 following a request from the survey committee of the Entomological Society of America. For the benefit of CEIR readers, it may be well to point out that the Regional Insect Control Project is a cooperative program operated by the Plant Pest Control Division, ARS, in accordance with an agreement signed on February 18, 1954, between the U. S. Department of Agriculture and the Foreign Operations Administration, now the International Cooperation Administration. At the present time a staff of 10 entomologists are stationed in eight countries working with personnel of the U. S. Operations Missions and Ministries of Agriculture. The work of these entomologists is designed to fulfill commitments to the host countries with respect to the evaluation of locust problems, the demonstration of control practices, development of insect surveys, and the training of nationals in methods, procedures and the organization of applied entomology and plant quarantine work. During the last few years the Departments of Plant Protection have manifested a great desire for survey work, so that an increased effort has been made to collect, identify, and record the insect species of economic importance. First-hand information on foreign pests should serve to familiarize the entomologist and the pesticide industry of this country with the major pests in the areas reported on. It should lead to better understanding and mutual interest in entomological problems common to the United States and other nations. (E. J. Hambleton).

Summary of Insect Conditions in Afghanistan

By D. D. Shallow

Cereal and Forage Insects: A CHINCH BUG caused damage during June to the wheat fields in the Logar Valley. The SEN PEST (*Eurygaster integriceps*) was present in the province of Mimanah along the Oxus River, which is the boundary between Russia and Afghanistan, but caused no serious crop loss. CUTWORMS were the only pests that attacked the huge acreage of corn in the early stage. No insects were found feeding on the older corn plants. ARMYWORMS were in great numbers on the small grains and averaged 15-20 per sweep during June in the Kabul Province. There appeared to be two species, one of which is *Pseudaletia unipuncta*. In the Helmand Valley, Lashkar Gah area, alfalfa was attacked in spotty infestations by a CLOVER WEEVIL (*Hypera* sp.) and armyworms. In the central part of the country, PEA APHID (*Macrosiphum pisi*) was abundant from May to October. Many species of GRASSHOPPERS were attacking forage crops in all parts of Afghanistan and during July in the Logar Valley there were 8-11 (average) last stage nymphs per sweep. DESERT LOCUST (*Schistocerca gregaria*) was never a problem in the southern provinces where it usually causes some damage. The MOROCCAN LOCUST (*Docostaurus moroccanus*) and the ITALIAN LOCUST (*Calliptamus* poss. *italicus*) along the Russian border in the north provinces never developed into a threatening population.

Fruit Insects: The grape industry in Afghanistan is one of the biggest sources of foreign exchange that the country has, but the number of insects causing damage to the grapes is very limited. A HORNWORM is found in abundance eating the leaves in some vineyards so that farmers must hand pick and destroy them. A HORNET (*Vespa orientalis*) causes damage to both unpicked and harvested

grapes. An ALMOND WEBWORM (Malacosoma sp.) is a very serious pest of the almond trees from April until June and infests 90 percent of the trees from 40 miles north of Kabul to Kalat about 100 miles north of Khandahar, occurring in such numbers as to reduce the crop yield by 50 percent. The almond trees are also severely infested with a TERRAPIN SCALE which has not yet been definitely identified. CODLING MOTH (Carpocapsa pomonella) is abundant on apples. A PEACH TREE BORER (Synanthedon sp.) causes severe damage in the Kabul area and many orchards have been pulled out.

Citrus Insects: The only citrus grown is the sour orange in the Jalalabad area or eastern province. A WHITEFLY (Dialeurodes sp.) causes severe damage, and 90 percent of the trees were infested during 1957 with three generations.

Cotton Insects: Surveys made in the largest cotton-growing area of the north, Khatagan Province, have not revealed any SPINY BOLLWORM (Earias insulana) or PINK BOLLWORM (Pectinophora gossypiella). The pink bollworm has been reported in Jalalabad Province, but three differently timed surveys in April, July and September did not produce any. The spiny bollworm is found in the Jalalabad area and the south province of Khandahar. During the year the infestation in the south did not exceed 30 percent of squares or bolls and in the eastern province Jalalabad, not over 15 percent squares or bolls. COTTON APHID (Aphis gossypii) is the only insect that has in past years damaged the northern cotton crop and it does not usually appear in great numbers until October.

Truck Crop Insects: A CABBAGEWORM (Pieris rapae) did not require control measures in 1957, but is commonly found.

Sugarcane Insects: The SUGARCANE LEAFHOPPER (Pyrrilla perpusilla) is also found commonly around Jalalabad.

Forest and Shade Trees: Several types of poplar trees are attacked by borers. The Lombardy poplar is the most important lumber tree and it is about 15 percent infested with Saperda sp.

Insects Affecting Man and Animals: Several kinds of MOSQUITOES are found in different parts of Afghanistan and there is malaria, but no accurate statistics are available as to the incidence. BED BUGS (Cimex lectularius) are found in almost every house in Kabul and FLEAS are as common. In the Khandahar area, SAND FLIES are found and some are carriers of the infectious kala azar and sand fly fever. A CATTLE TICK (Boophilus sp.) is distributed throughout Afghanistan on cows, sheep, horses and mules. It was extremely abundant during 1957 with as many as 200 per animal.

Stored Product Insects: One bad infestation of the INDIAN-MEAL MOTH (Plodia interpunctella) was found in bagged, stored, pistachio nuts. An estimated 20 percent of the nuts were lost before control was started. These three insects are commonly found in stored grains: KHAPRA BEETLE (Trogoderma granarium), LESSER GRAIN BORER (Rhyzopertha dominica) and the RICE WEEVIL (Sitophilus oryza).

Summary: The amount of damage by economic insect pests during 1957 in Afghanistan was not great. This is the first year a summary of insect conditions has been made, and there are no statistics available of any kind concerning previous insect outbreaks, but it appears now that this country is fortunately not yet bothered by too many economic pests. This may be due to the high (up to 24,000 foot) mountain barriers, the cultivated valley's isolation, and no great areas planted to any large amount of one particular crop. There are also many parasites and predators at work plus the fact that only a very, very small amount of insecticide has been used, which could upset natural balances.

Summary of Insect Conditions in Ethiopia

By W. C. Kurtz

Reports and observations of insect and plant disease conditions in Ethiopia are quite meager and scattered and consequently no general distribution pattern can be determined. Present plans include insect and plant disease surveys and gradually more definite information will be available on the extent and degree of crop pest infestations, crops infested and monetary losses. These are some of the most important plant pests in Ethiopia in 1957: An ARMYWORM locally known as "Tamche" is quite widespread, damaging a variety of crops including wheat, barley and teff, which comprise a high percentage of small grains. Reports of damage are frequently received. Many successful control demonstrations have been conducted. A LEPIDOPTEROUS LEAF FEEDER on citrus causes considerable damage. Complete defoliation has been noted on small orange trees. Several scales have been observed on citrus including the COTTONY-CUSHION SCALE (*Icerya purchasi*). A small COLEOPTEROUS INSECT has been observed in several locations infesting red coffee berries, causing considerable damage. DURRA STALK BORER (*Sesamia cretica*) has been observed doing considerable damage throughout Ethiopia to corn and sorghums. FRUIT TREE INSECTS and diseases are common as indicated by damaged fruit in the market. Apparently insect losses are held in check somewhat by natural predators; TERMITES are quite common as mound building and subterranean types. SUBTERRANEAN TERMITES are common throughout Ethiopia due to the type of building construction. Even the newly constructed houses, as observed in Addis, are badly infested due to improper construction. Native houses seldom last but a few years. STORED GRAIN INSECTS are quite common. Storage facilities are very poor and inadequate. No large storage bins or elevators properly equipped for long-period storage exist. A PINK BOLLWORM (probably *Pectinophora gossypiella*) has been reported as not widely spread over Ethiopia. In Eritrea, where cotton is more extensively grown, the pink bollworm is more of a problem. SPINY BOLLWORM (*Earias insulana*) is also known to exist in Ethiopia, but the distribution and amount of damage is unknown. It has been reported at the Alomata Experimental farm, but has not been a serious problem.

Many species of native GRASSHOPPERS do widespread damage according to reports. SPOTTED ALFALFA APHID (*Therioaphis maculata*) was found during a special survey in 1956. A low population of the aphid was found, which was attributed to the presence of a coccinellid. Insects affecting public health, such as FLIES, MOSQUITOES, FLEAS, BED BUGS, LICE, TICKS and ROACHES are quite common and little has been done to control them. Sanitation would be a prerequisite before much success could be attained with other forms of control. Preliminary work in malaria control has been started through a U. S. Operations Mission cooperative project with the Ethiopian Ministry of Health. Many other pests create a health hazard and nuisance in the household such as CLOTHES MOTHS, SILVERFISH, ANTS, SCORPIONS, CARPET and LARDER BEETLES, DERMESTIDS and SPIDERS. Some deaths of babies have been reported from bites by scorpions. Little attempt has been made to control these pests and inadequate storage and cleaning facilities in the homes and shops has helped sustain damaging infestations. LIVESTOCK PARASITES, both external and internal, are quite common and destructive. Through a U. S. Operations Mission and Ministry Joint Fund Livestock Improvement Program demonstrations are being carried on for the control of these pests. The TSETSE FLY has been reported to occur in some parts of Ethiopia. Honey is an important product as the national beverage called "Tedig" is made from it. Most of the honey is obtained from robbing wild BEE trees and woven open end cylinders placed in the trees for hives. Most of the honey is of poor quality, infected with foul brood and not properly processed. Very little domestication of bees is attempted, but they could prove a good source of income as well as serve as pollinators.

Summary of Insect Conditions in Iran

By G. B. Riley, R. L. Linkfield and R. Q. Gardenhire

Cereal and Forage Insects: MOROCCAN LOCUST (Dociostaurus moroccanus) infestations were very widespread over Fars and Gorgan Provinces, but there were no important invasions of croplands, due to control measures applied to 1,265,000 acres of rangeland. DESERT LOCUST (Schistocerca gregaria) - For the third consecutive year there were no invasions into Iran. NATIVE GRASSHOPPERS (Calliptamus poss. italicus, Dociostaurus sp., and others) were general pests in most areas of Iran. Control measures were applied to 415,000 acres. SEN PEST (Eurygaster integriceps) infestations were at the lowest level in several years with the only serious damage occurring in Kerman Province. Chemical control was applied to only 30,000 acres. ALFALFA WEEVIL (Hypera postica) destroyed most of the first cutting and much of the second cutting of alfalfa throughout the country. DURRA STEM BORER (Sesamia cretica) caused severe damage in most corn-growing areas and was the only insect of economic importance observed on sugarcane in Khuzistan Province. CEREAL LEAF MINER (Syringopais temperatella) (Det. by J. F. G. Clarke and H. W. Capps) was generally distributed throughout southwestern Iran, extending from Dezful in Khuzistan Province to Jahrom in Fars Province. The most serious damage observed or reported was at Kazerun, where several hundred acres of wheat were almost totally destroyed. SPOTTED ALFALFA APHID (Therioaphis maculata) was again found in all areas observed but no economic damage was reported.

Truck Crop Insects: BEE T ARMYWORM (Laphygma exigua) damage was severe in all areas, but infestations on sugarbeet were not generally as bad as in 1956. Potatoes were also lightly infested. SUGAR BEE T CROWN BORER (Gnorimoschema ocellatella) infestations were quite heavy in practically all areas, especially late in season. A SUGAR BEE T STEM BORER (Lixus sp.) (Det. by R. E. Warner) was common in most areas, but was generally of minor importance. A SPIDER MITE (Tetranychus sp.) caused very serious damage to sugar beets during the summer months, especially where control measures had been applied against other insects. BALUCHISTAN MELON FLY (Myiopardalis pardalina), generally distributed throughout the country, was the major pest on all types of melons. A MELON BEETLE (Epilachna chrysomelina) caused heavy damage to melon foliage where control was not applied. CABBAGE APHID (Brevicoryne brassicae) infestations were heavy on cabbage. CABBAGEWORMS (Pieris rapae, Pieris brassicae and Plutella maculipennis) were commonly observed on cabbage. SPINACH LEAF MINER (Pegomya hyoscyami) was generally distributed on sugar beets and spinach, but not of great economic importance. APHIDS and SPIDER MITES were common on many vegetable crops.

Fruit and Nut Insects: CODLING MOTH (Carpocapsa pomonella) was probably the most important insect pest of deciduous fruits, with heavy damage to apple, pear, and quince occurring in all areas. Even in orchards where control measures had been applied several times, damage to apples frequently exceeded 50 percent. ERMINE MOTH (Hyponomeuta prob. padella) caused extensive defoliation of apple trees during spring months in many areas. PEACH TWIG BORER (Anarsia lineatella) was observed infesting fruits of peach, plum, and apricot in the Karaj area. LACE BUGS (Stephanitis pyri) infested apple and pear foliage in most areas. A DIASPID SCALE (Chionaspis asiatica) - Spotty infestations on plum at Karaj. DICTYOSPERMUM SCALE (Chrysomphalus dictyospermi) was the most destructive and widespread of the scale insects infesting citrus in the Caspian Sea area. PURPLE SCALE (Lepidosaphes beckii) was heavy on citrus in Ramsar area, but not generally distributed. GLOVER SCALE (Lepidosaphes gloverii) - Scattered infestations on citrus at Ramsar. ORANGE PULVINARIA SCALE (Pulvinaria aurantii) was heavy on citrus in Chalus and Lahijan areas. YEW SCALE (Pulvinaria floccifera) infestations were light on citrus in the Rudsahr area. COTTONY-CUSHION SCALE (Icerya purchasi) infestations continued light throughout Caspian area due to effective control by VEDALIA

(Rodolia cardinalis). CHINESE WAX SCALE (Ceroplastes sinensis) was quite heavy on citrus at Ramsar. ORIENTAL YELLOW SCALE (Aonidiella orientalis) infestations on citrus in southern Iran ranged from light to heavy, dependent on control by the parasite, Aphytis sp. CITRUS BLACKFLY (Aleurocanthus woglumi) was not observed to be of economic importance on citrus, but was quite heavy on Zizyphus spp. foliage in Khuzistan Province. GRAPE MEALYBUG (Pseudococcus maritimus) was light on citrus in Lahijan area. CITRUS RUST MITE (Phyllocoptura oleivora) was light and spotted at Ramsar, but heavy in Rudsahr area. CITRUS RED MITE (Panonychus citri) was abundant over most of the Ramsar and Rudsahr areas. A SPIDER MITE (Tetranychus sp.) was also abundant on citrus in the Ramsar area. A CATERPILLAR (Papilio sp.) defoliated orange trees at Bahbahan in southwestern Iran, but was very light at Bam in southeastern Iran. OLD WORLD DATE MITE (Oligonychus afraasiaticus) completely destroyed the date crop in some villages around Bahbahan, and greatly reduced yield in many surrounding villages. A DATE FULGORID (Ommatissus binotatus) - Infestations variable in different sections of southern Iran; control measures applied to 200,000 date palms in Bandar Abbas and Shahdad areas. PARLATORIA DATE SCALE (Parlatoria blanchardi) infestations ranged from very light in many areas to heavy in a few areas of southern Iran. A NITIDULID BEETLE (probably Carpophilus hemipterus) was causing heavy damage to ripening dates in the Bam area of southeastern Iran. OLIVE SCALE (Parlatoria oleae) was generally prevalent on olives in all areas observed. BLACK SCALE (Saissetia oleae) was confined to a small infestation on olives at Rudbar. Quarantine measures have been effected to prevent further spread of this pest. PISTACHIO PSYLLID (Agonoscena targioni) was the most important pest of pistachios and control measures were frequently ineffective. PISTACHIO LEAFHOPPER (Idiocerus stali) destroyed a high percentage of the nut crop in those areas where control measures were not applied. PISTACHIO NUT BORERS (Eurytoma plotnikovi and Megastigmus pistaciae) were again serious pests in most areas. A GELECHIID NUT BORER (Recurvaria pistacicola) was abundant on pistachios everywhere in Iran. A HAIRY CATERPILLAR (Ocneria terebynthina) almost completely defoliated many pistachio trees in the Zarand area. This same caterpillar was present in Ghazvin and other pistachio areas but caused minor damage. A GELECHIID LEAF MINER (Nepticula promisa) caused heavy damage to pistachio foliage in some orchards at Raftsanjan. PISTACHIO APHIDS (Forda spp.) were generally prevalent but were of minor economic importance. VINE MOTH (Lobesia botrana) - There were no records of spread to areas beyond the small area of infestation on grapes in Azerbaijan Province. A GRAPE MOTH (Sparganothis pilleriana) was an important pest of grapes in the Ghazvin area. A SPHINGID (Celerio lineata livornica) also infested grapes in the Ghazvin area.

Cotton Insects: SPINY BOLLWORM (Earias insulana) infestations have now been recorded from Khuzistan, Fars, Kerma, Baluchistan, Kermanshah, Isfahan, and Tehran Provinces of Iran. Infestations on cotton ranged from extremely light to extremely heavy, apparently in direct relation to climatic conditions. A COTTON BOLLWORM (Heliothis armigera) - The most serious damage to cotton in several years occurred in the Caspian area. PINK BOLLWORM (Pectinophora gossypiella) was not observed nor reported to be of economic importance anywhere in Iran. BEE T ARMYWORM, APHIDS, THRIPS, SPIDER MITES, and WHITEFLIES were commonly found on cotton, but infestations were not unusually severe.

Stored Product Insects: KHAPRA BEETLE (Trogoderma granarium) was the most serious pest of stored grains in southern Iran. RICE WEEVIL (Sitophilus oryzae) predominated in the northern regions. RED FLOUR BEETLE (Tribolium castaneum) and LESSER GRAIN BORER (Rhyzopertha dominica) were encountered throughout Iran. GRANARY WEEVIL (Sitophilus granarius) was restricted to temperate areas. The following species also occurred: In flour and flour mills - ALMOND MOTH (Ephesia cautella), CONFUSED FLOUR BEETLE (Tribolium confusum), MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella), and FLAT GRAIN BEETLES (Laemophiloeus spp.); in dried fruits - DRIED FRUIT BEETLES (Carpophilus spp.), SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), ALMOND MOTH, TOBACCO

MOTH (*Ephestia elutella*), CADELLE (*Tenebroides mauritanicus*), INDIAN-MEAL MOTH (*Plodia interpunctella*), and LESSER GRAYN BORER; in legume seed - RED FLOUR BEETLE and ALMOND MOTH; in tobacco - CIGARETTE BEETLE (*Lasioderma serricorne*) was very serious in some areas.

Miscellaneous Insects: SESAME LEAFHOPPERS (*Circulifer opacipennis* and *Orosius albicinctus*) (Det. by J. P. Kramer) caused serious damage to *Sesamum indicum* in Khuzistan Province and was reported to be the most serious pest of sesame. DICTYOSPERMUM SCALE (*Chrysomphalus dictyospermi*) - Light infestations on tea in Ramsar and Lahijan. CHAFF SCALE (*Parlatoria pergandii*) - Light infestations on tea in Lahijan area. YELLOW SCALE (*Aonidiella citrina*) - Light infestations on *Prunus laurocerasus* in Lahijan area. APHIDS were reported to be the most serious pest on henna (*Lawsonia alba*) in the Bam area. WHITEFLIES were also observed in great abundance on henna at Bam.

Beneficial Insects: SEN PEST PARASITE (*Microphanurus semistriatus*) - About 80 million artificially reared for field release this year. SPOTTED ALFALFA APHID PARASITE (*Trioxys utilis*) - About 700 parasites were collected in Khuzistan Province and shipped to the United States. A CARABID BEETLE (*Calosoma* sp.) - A shipment of this predator was received from the Territory of Hawaii. An attempt is being made to establish the beetle in Iran as a biological control agent against the BEET ARMYWORM (*Laphygma exigua*). CONVERGENT LADY BEETLE (*Hippodamia convergens*) was feeding extensively on sugarbeet aphids at Meshed. VEDALIA (*Rodolia cardinalis*) continued to effect good control of COTTONY-CUSHION SCALE in the Caspian area. A COCCINELLID (*Stethorus gilvifrons*) (Det. E. A. Chapin) was observed feeding on sugarbeet SPIDER MITES (*Tetranychus* sp.) at Karaaj. An EULOPHID PARASITE (*Aphytis* sp.) was introduced into the Jiroft citrus area from Khuzistan Province for the biological control of *Aonidiella orientalis*.

Summary of Insect Conditions in Iraq

By W. O. Ridgway

In collaboration with the following Iraqi Government Personnel: Dr. Ali Abdal Hussain, University of Wisconsin 1953-1956; Messrs. Wahhab Monir, Utah State College, 1949-1952; Othman Redha Ali, University of California, 1951-1954; Izzet M. Khieri, Kansas State College, 1951-1954; Anis Niamat, North Carolina State, 1954-1957; and Anis J. Sosi, Iraq Agricultural College, 1955.

Cereal and Forage Insects: The SEN PEST (*Eurygaster integriceps*) was again the main pest of barley and wheat. Unusual heavy spring rains delayed and prevented extensive developments in some areas of northern Iraq. Spotted nature of infestations made aerial controls difficult. The often mistaken *Aelia rostrata* was present but not in damaging numbers. DURRA STALK BORER (*Sesamia cretica*) was a problem in imported sorghum varieties and on the limited corn production in Iraq. ALFALFA WEEVILS (*Hypera postica*) caused severe damage to the spring cuttings of alfalfa in central Iraq. The SPOTTED ALFALFA APHID (*Therioaphis maculata*) was also present on alfalfa in central Iraq. SYRPHID FLY larvae and LADY BEETLES were common in the area. The honeydew on the alfalfa plants made hand-harvesting difficult. Mixed species of NATIVE GRASSHOPPERS caused some concern as they moved into margins of green crops from harvested cereal crops or adjacent desert habitats. DESERT LOCUST (*Schistocerca gregaria*) was not found in Iraq in 1957. EAR COCKLE DISEASE, caused by a nematode (*Anguina prob. tritici*) infesting the kernels of headed wheat, was quite abundant in southern Iraq.

Fruit Insects: CODLING MOTH (Carpocapsa pomonella) was common wherever apples were grown. WOOLLY APPLE APHID (Eriosoma lanigerum) was spreading into many areas of Iraq. ABUPRESTID BORER (Sphenoptera sp.) caused heavy damage to apricot and some damage to peach and plum trees. Entire branches were killed by extensive boring during late summer of the previous year. A FULGORID, called "Dubas", (Ommatissus binotatus) was common during the spring throughout central Iraq. Approximately 2,235,272 palm trees and shoots were hand dusted by an organized control campaign on this pest. The DATE STEM BORER (Oryctes elegans) did some damage to date fruiting stems. In southern Iraq ALMOND MOTH (Ephestia cautella) caused some concern in dates packed for export. The limited citrus-growing areas of Iraq appeared to be relatively free of serious insect pests. Some SCALES (Parlatoria spp.) were observed.

Truck Crop Insects: APHIDS on cabbage, melons, lettuce, tomatoes and sugar beets were common. Severe damage to melons occurred in some areas. WHITEFLIES (Bemisia spp.) were heavy on some melons, eggplants and on blackeyed peas where adjacent. EGYPTIAN COTTONWORM (Prodenia litura) caused damage to okra, onion stems, tomatoes and beans. Okra was also infested with the SPINY BOLLWORM (Earias insulana). BALUCHISTAN MELON FLY (Myiopardalis pardalina) was a major pest on melons. A MELON BEETLE (Epilachna chrysomelina) was common on cucurbits and damaged leaves of numerous vegetable plants. RED CUCUMBER BEETLE (Aulacophora foveicollis) severely damaged early spring plantings of cucurbits by tunnelling the stems at the ground level. Adults were noted feeding on flowers throughout the summer. WATERMELON STEM BORER (Apomecyna arabica) was not too serious a problem in 1957. MOLE CRICKETS (Gryllotalpa prob. gryllotalpa) were common in irrigated vegetable and flower gardens. A CABBAGEWORM (Pieris rapae) was common throughout the season.

Cotton Insects: The major cotton insect problem in central Iraq is the SPINY BOLLWORM (Earias insulana). Terminal stems, squares and bolls are attacked when heavy infestations occur. Applications of controls usually result in a build up of SPIDER MITES (Tetranychus spp.). A BOLLWORM (Heliothis armigera) was common but not a serious problem. EGYPTIAN BOLLWORM (Prodenia litura) was noted during the early part of the season. LEAFHOPPERS were very numerous on cotton but stimulated little interest.

Miscellaneous: TICKS were common on cattle but most controls are confined to hand picking. Some dipping in portable vats for SHEEP KEDS was done. SUBTERRANEAN TERMITES are common in buildings but a limited amount of wood is used in construction.

Summary of Insect Conditions in Lebanon

By E. R. Millet

Cereal and Forage Insects:

SEN PEST (Eurygaster integriceps) was heavy and caused considerable damage to the wheat crop in the Bekaa Valley in 1957. A GREEN GRASSHOPPER (Locusta sp.) was quite heavy on wheat around Jabbouleh in the northern Bekaa Valley. Larvae of ALFALFA WEEVIL (Hypera postica) did severe damage to experimental alfalfa plots at Terbol in the Bekaa Valley and were also severe in some alfalfa patches south of Beirut. EUROPEAN CORN BORER (Pyrausta nubilalis) practically destroyed the corn plots at the Aabde Station again in 1957. APHIDS on alfalfa, several species, appear to be kept in check by parasites, predominantly Praon sp.

Olive Insects: OLIVE FLY (Dacus oleae) was somewhat heavy in Choueifat area in late summer, with infestations as high as 45 percent. The OLIVE MOTH (Prays oleellus) was light in this area.

Apple Insects: The CODLING MOTH (Carpocapsa pomonella) caused considerable damage during 1957 in the apple-growing areas of Lebanon. Infestations were light in the Sin-el-Fil area and at Ghazir. A heavy infestation was reported from Jabbouleh in the Bekaa. EUROPEAN RED MITE (Panonychus ulmi) was reported from the same areas with about the same degree of infestation. However, heavy infestations were also reported from Hammana. AN APPLE APHID (Anuraphis sp.) was noticed in a few instances. APPLE APHID (Aphis pomi) was reported light at Sin-el-Fil, moderate at Jabbouleh, and average at Zahle. WOOLLY APPLE APHID (Eriosoma lanigerum) was reported heavy at Ghazir, and A TINGID (Stephanitis pyri) was moderate at Jabbouleh. PEAR THRIPS (Taeniothrips inconsequens) were again abundant at Laklouk. LEOPARD MOTH (Zeuzera pyrina) was extensive in the Zahle area and light at Ghazir.

Other Fruit Insects: VINE MOTH (Lobesia botrana) was severe on grapes in the Bekaa Valley, as well as at Ghazir. PEACH TWIG BORER (Anarsia lineatella) was found in ripe apricot fruit.

Citrus Insects: MEDITERRANEAN FRUIT FLY (Ceratitis capitata) was reported not heavy at Ghazir and normal in the Sin-el-Fil and Beirut sections. Scales, both CALIFORNIA RED SCALE (Aonidiella aurantii) and FLORIDA RED SCALE (Chrysomphalus aonidium) were heavy in the north and light in the south coast region. CITRUS RUST MITE (Phyllocoptruta oleivora) was heavy at Sin-el-Fil and in the south but not heavy at Ghazir. CITRUS RED MITE (Panonychus citri) was light in the Beirut and Sin-el-Fil area.

Truck Crop Insects: A CABBAGEWORM (Pieris brassicae) was found damaging cabbage and cauliflower around Sin-el-Fil. CHAFER GRUBS (Melolontha melolontha and Polyphylla fullo) were not heavy at Sin-el-Fil, but were moderate at Jabbouleh where also MOLE CRICKETS (Gryllotalpa prob. gryllotalpa) and SNAILS caused considerable damage in vegetable gardens. At Jabbouleh, GREEN GRASSHOPPERS caused much damage in crops and vegetables. BLACK CUTWORM (Agrotis ypsilon) caused considerable damage to vegetables in the Bekaa.

Household Insects: An extremely heavy population of the HOUSE FLY (Musca domestica) was caused by a one week garbage strike in Beirut during November. ROACHES (Periplaneta americana, Blattella germanica, Supella supellectilium) were again numerous in Beirut during 1957.

Miscellaneous Insects: AN ARMORED SCALE, identified as Aspidiotus hedericola, was observed as quite severe on English ivy in Beirut.

Summary of Insect Conditions in Libya

By Arthur Kaatz

DESERT LOCUST (Schistocerca gregaria) again invaded Libya in the spring. Most of the mature swarms came from Tunisia during February, March and April, laying eggs as they went in the desert regions along the Gebel from the Tunisian Border to the Sirte Desert. A few were found in Cyrenaica areas and a very few in the Fezzan. In May and June the hatch along the Tripolitanian Gebel was moderately heavy. Prompt action by local ground baiting crews and an aerial spraying unit succeeded in killing most of the insects before they reached croplands. Several fledgling swarms did get into olive groves at Zintan and stripped the bark off the trees before they were killed or dispersed. There were some escapees from this area. Immature swarms again appeared in the Fezzan during November but were passing through into Algeria.

Cereal and Forage Insects: An ALFALFA CATERPILLAR was found in many alfalfa fields but was not serious. Prompt cutting and spraying resulted in its disappearance. DURRA STALK BORER (Sesamia cretica) again in 1957 infested most corn and sorghum fields. Spraying activities were not very successful. Late corn and sorghum were about 50 percent infested and damaged.

Olive Insects: OLIVE FLY (Dacus oleae) was a serious pest along the coastal areas that are heavily irrigated. It first appeared in July and steadily increased in numbers despite control. Damaged fruit ranged from 30-80 percent in Sorman and Zavia Oases. Although severe in other regions, it is very spotted. Five olive fly parasites have been found this year. A BRACONID (Opius concolor) which was quite extensive, A CHALCID (Eurytoma sp.) not so extensive, the other three, Pnigalio longulus, Eupelmus urozonus, and Dinarmus dacicida, were found in lesser numbers. Scale insects were not serious except in a few local areas. The scale (Pollinia pollini) was serious in several groves only. OLIVE SCALE (Parlatoria oleae) attacks were very light, although it was found in most olive-growing areas. A PYRALID (Palpita unionalis) and a TORTRICID (Cacoecimorpha pronubana) were found damaging olive leaves in the Tagiura Oasis, but not seriously. OLIVE PSYLLA (Euphyllura olivina) was quite numerous at olive-blossom time but adverse weather conditions caused it to disappear before any harm was done.

Citrus Insects: MEDITERRANEAN FRUIT FLY (Ceratitis capitata) was the serious orange crop pest in 1957. First noted in mid-July, it steadily increased despite spraying activities which were carried on by the large growers only. Small growers were unable to spray. Favorable weather conditions in October enabled the Mediterranean fruit fly to increase in such abundance as to pose a very serious threat to the orange crop in the Sorman, Zavia, Sidi Mesri, Ain Zara, and Tagiura Oases. A BLACK FLY (Lamprolonchea aurea) appeared in October and November doing secondary injury to oranges punctured by the Mediterranean fruit fly near Sidi Mesri. Among the scale insects DICTYOSPERMUM SCALE (Chrysomphalus dictyospermi) was the most numerous on oranges. A predator, the COCCINELLID (Chilocorus bipustulatus) also was found feeding on this scale insect. Some spraying was done with good control. A CHAFF SCALE (Parlatoria ziziphus) was also numerous but in spotted areas. Some spraying was effective. PURPLE SCALE (Lepidosaphes bekkii) was present in several orchards near Tripoli, but not important this year. COTTONY-CUSHION SCALE (Icerya purchasi) was present in Tagiura and Sidi Mesri orchards, but not important. A natural parasite seemed to keep the infestation down.

Other Fruit Insects: Ceratitis capitata also developed on pears in the spring. It was also a serious pest on peppers. Much spraying was done to control this pest in the small red peppers. C. capitata was also found on ripe dates, figs and pomegranates. A Parlatoria scale species was serious on pear trees but was controlled by spraying. CODLING MOTH (Carpocapsa pomonella) riddled most of the local apple crop and some of the pear crop. Very little control was attempted by the growers. A BLACK FLY (Silba sp.) was found doing secondary injury to fig fruit. The Silba species black fly seemed to be present wherever the Mediterranean fruit fly was abundant. PEACH TWIG BORER (Anarsia lineatella) was a pest of almonds and peaches in the coastal belt, and a serious pest on peaches and apricots in the gebel areas of Cyrenaica. Little or no control was attempted. DATE SCALE (Parlatoria blanchardi) was a serious pest on dates in the Hon, Socna and Uaddan Oases. A little was found in oases further south but was not serious. Some spraying for control was carried on by the Agriculture Department. DRIED-FRUIT BEETLE (Carpophilus hemipterus) was found infesting ripe dates on trees along the coastal belt, and on stored dates in the market. It was also a minor pest on pomegranate fruit on trees. VINE MOTH (Lobesia botrana) was present on grapes in Tagiura area and a serious pest on grapes in northern Cyrenaica. Almost no control work was done. A BLACK FLY (Silba pendula) was present this summer on red peppers. Injury was secondary, only where the Mediterranean fruit fly was present.

Peanut Insects: A MOLE CRICKET (*Brachytrupes megacephalus*) was the serious pest to the peanut crop in 1957. Many fields had to be replanted. Where carried on, control work had excellent results. This insect was also serious on young pepper plants and to lawns in some areas. A CUTWORM was serious on peanuts in the Zliten area.

Tobacco Insects: A CUTWORM and a ROOTKNOT NEMATODE were the serious pests on tobacco. In some areas up to 60 percent of the tobacco plants were affected by the nematodes. TOBACCO SPLITWORM (*Gnorimoschema operculella*) was present in tobacco in the Tagiura and Sidi Mesri areas, serious only in a few local plots.

Other Truck and Garden Crop Insects: A BLACK APHID (probably *Aphis fabae*) destroyed several fields of broadbeans in Tagiura and Sidi Mesri areas. MELON BEETLE (*Epilachna chrysolmelina*) was serious on some melon, bean and cucumber plots but was controlled by spraying methods.

Stored Product Insects: Most of the grain warehouses in Tripolitania and Cyrenaica are infested by the RICE WEEVIL, GRANARY WEEVIL, LESSER GRAIN BORER, and the ANGOUMOIS GRAIN MOTH. All four insects are equally numerous and serious to the stored wheat and barley crops. The Angoumois grain moth also infested barley fields in the Tobruk area. Fumigation and other control methods were used but have not been very successful.

Livestock Insect Pests: Camels were affected by the CAMEL TICK (*Hyalomma dromedarii*), A MANGE MITE and LICE.

Insects Affecting Man: BED BUGS were a problem in parts of Tripoli, as were CLOTHES MOTH, COCKROACHES and SCORPIONS. MOSQUITOES were found in all irrigated areas. Spraying for FLIES last summer kept the population to low numbers in the Suk el Giuma area. Anopheline mosquitoes found during 1957 in different oases were *Anopheles algeriensis*, *A. multicolor* and *A. coustani tenebrosus*.

Summary of Insect Conditions in Pakistan

By George T. Brooks

Cereal and Forage Crop Insects: RICE STEM BORER (*Schoenobius incertulas*) caused severe damage throughout both east and west Pakistan. In some cases losses amounted to an estimated 90 percent. RICE GRASSHOPPER (*Hieroglyphus banian*), a sporadic pest, caused minor damage in parts of the Punjab, west Pakistan. Lower Sind, west Pakistan had localized light infestations of the RICE DELPHACID (*Sogatia furcifera*). The RICE HISPA (*Hispa armigera*) and ARMYWORM (*Pseudaletia unipuncta*) were both confined to east Pakistan, having a generalized distribution of serious proportions. No serious pest outbreaks were recorded for wheat. Light infestation of the ENGLISH GRAIN APHID (*Macrosiphum granarium*) occurred in Quetta Region, west Pakistan, and A TERMYTE (*Microtermes obesi*) in the Punjab, west Pakistan. MAIZE and JAWAR BORER (*Chilo zonellus*) caused moderate damage to maize and jawar in west Pakistan. Alfalfa throughout west Pakistan had minor infestations of the ALFALFA WEEVIL (*Hypera postica*) and the COWPEA APHID (*Aphis medicaginis*). Confined to the Karachi area was a serious infestation of the BEET ARMYWORM (*Laphygma exigua*).

Sugarcane Insects: SUGARCANE TOP BORER (*Scirpophaga nivella*) and the SUGARCANE STEM BORER (*Argyria sticticraspis*) were serious pests of sugarcane in the Punjab, west Pakistan and all of east Pakistan with amount of infestation varying between 10 to 30 percent. SUGARCANE LEAFHOPPER (*Pyrilla perpusilla*) was serious in west Pakistan only in the Peshawar region; light

infestations occurred in the Punjab where previous control measures have reduced the population. The SUGARCANE WHITEFLY (Aleurolobus barodensis) and SUGARCANE MEALYBUGS (spp. undetermined) were very minor pests in both west and east Pakistan. TERMITES (Microtermes obesi and Odontotermes obesus) produced sporadic infestations throughout the sugarcane area of west and east Pakistan; damage was estimated at 5 percent.

Fiber Crop Insects: PINK BOLLWORM (Pectinophora gossypiella) and SPOTTED BOLLWORMS (Earias spp.) were restricted to the Multan Region, west Pakistan, and caused only minor damage to cotton in some localized areas. Bordering the forest area of Punjab in west Pakistan, cotton was heavily infested with the COTTON LEAF ROLLER (Sylepta derogata). Control measures brought most of it under control. Throughout most of the cotton belt the COTTON APHID (Aphis gossypii) and the COTTON WHITEFLY (Bemisia tabaci) were only minor pests. Serious outbreaks of GRASSHOPPERS (Chrotogonus spp.) and the FIELD CRICKET (Acheta domestica) occurred in the Punjab, west Pakistan. COTTON GRAY WEEVIL (Mylocerus undecimpustulatus maculosus) had heavy infestations on cotton in Sind and Punjab, west Pakistan. A LEAFHOPPER (Empoasca sp.) occurred in heavy proportions throughout Sind, west Pakistan. Very light and sporadic infestations of TERMITES occurred throughout the cotton belt. In east Pakistan no serious outbreaks were reported on jute; however, the JUTE SEMI-LOOPER (Anomis sabulifera) and the JUTE HAIRY CATERPILLAR (Diacrisia obliqua) were reported in light to moderate infestations.

Vegetable Insects: CABBAGE BUTTERFLY (Pieris brassicae) was found on cruciferous crops throughout Pakistan but was a serious pest only in Peshawar, west Pakistan. In the Karachi area the DIAMONDBACK MOTH (Plutella maculipennis) was a serious pest on cabbage. Melons throughout west Pakistan showed serious infestations of the FRUIT FLIES (Dacus spp.), HADDA BEETLES (Epilachna spp.) and the RED PUMPKIN BEETLE (Aulacophora foveicollis). Moderate infestations of an APHID (spp.) were reported from most of the area. Serious outbreaks of the BRINJAL BORER (Leucinodes orbonalis) were reported on eggplant (local name "brinjal") for the Karachi and Punjab areas of west Pakistan whereas the BRINJAL LEAF ROLLER (Eublemma olivacea) was the major and serious pest reported for east Pakistan. POTATO JASSID (Empoasca devastans) was the only serious pest reported on potato and it appeared confined largely to the southern regions of west Pakistan. On peppers and tomatoes devastans and a THRIPS (Scirtothrips dorsalis) were reported as serious pests in the Karachi area. TERMITES (Odontotermes obesus and Microtermes obesi) did sporadic damage to peppers and tomatoes in the same area.

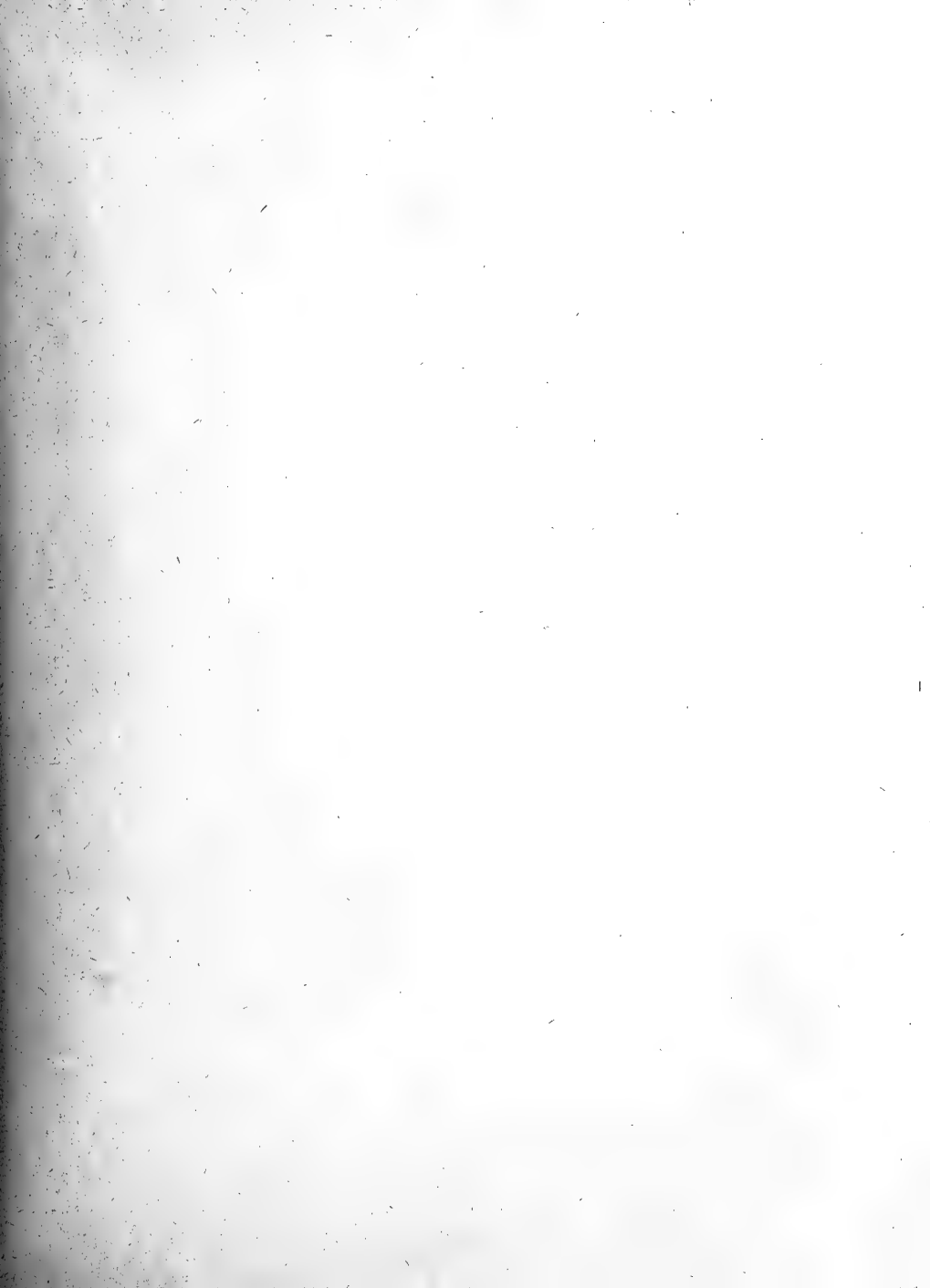
Fruit Insects (Other than Citrus): On mango in the Karachi area only the MANGO STEM BORER (Batocera sp.) was a serious pest. Previously conducted control measures in this area have considerably reduced other populations. However, in other areas the MANGO LEAFHOPPERS (Idiocerus spp.) and the MANGO MEALYBUG (Drosicha stebbingi) were serious pests. Throughout most of west Pakistan Dacus spp. continued as a major pest of guava. Only one serious pest of grapes was found and that, the GRAPEVINE THRIPS (Rhipiphorothrips cruentatus), was of serious proportions in the Karachi area. In the Quetta area figs were mildly infested with the FIG BORER (Batocera rufomaculata). Apple trees in the Quetta Region, west Pakistan were severely infested with the CODLING MOTH (Carpocapsa pomonella) and the HAIRY CATERPILLAR (Euproctis signata). The same pests extended their distribution into the Peshawar Region, west Pakistan, but there the infestations were very light. WOOLLY APPLE APHID (Eriosoma lanigerum), a BLACK APHID (Pterochlorus persicae), GREEN PEACH APHID (Myzus persicae) and Anuraphis sp. were distributed throughout the fruit producing areas of the Quetta and Peshawar Regions, west Pakistan, infesting peach, pear, plum and apple in varying degrees ranging from moderate to heavy. SAN JOSE SCALE (Aspidiotus perniciosus) on apple, peach and plum, OLIVE SCALE (Parlatoria oleae) on pears, and a SCALE (Lecanium coryli) on peach and plum were

distributed throughout the fruit-producing areas of Quetta and Peshawar, varying in degree of infestations from moderate to heavy. PEACH FRUIT FLY (Dacus zonatus) population was reduced through previous control during the year to only a mild infestation.

Citrus Fruit Insects: CITRUS LEAF MINER (Phyllocnistis citrella) and CALIFORNIA RED SCALE (Aonidiella aurantii) were reported as having moderate populations throughout the citrus producing areas of Sind, Punjab and Peshawar, west Pakistan. Sind recorded a serious infestation of the CITRUS BLACKFLY (Aleurocanthus woglumi) and the CITRUS WHITEFLY (Dialeurodes citri) but the infestation was mild in other citrus-producing areas. The Punjab was the only area reporting serious outbreaks of the CITRUS PSYLLA (Diaphorina citri).

Tobacco Insects: The only serious tobacco pest found in the tobacco producing areas of west Pakistan was AN APHID (Aphis sp.)

Tea Insects: No serious pests of tea were reported in 1957, probably because tea production is organized on a commercial basis with regular plant protection measures being carried out. Only A MIRID (Heliopeletis theivora) was recorded as a mild infestation in the plantation around Sylhet, east Pakistan.





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FEBRUARY 28, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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 Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

ALFALFA WEEVIL adults in Nevada, spraying underway. (P. 144).

MEXICAN FRUIT FLY scarce in Rio Grande Valley of Texas. (p. 145).

BEET LEAFHOPPER controls being applied on 25,000 acres in Imperial Valley of California. (p. 145).

Surface debris inspection in lower Rio Grande Valley of Texas indicates lightest carryover of PINK BOLLWORM in several years. (p. 145).

New distribution records for IMPORTED FIRE ANT. (p. 147)..

SUMMARY OF INSECT CONDITIONS - 1957 - Rhode Island (p. 148), Connecticut (p. 151), Virginia (p. 152), Alabama (P. 157).

INSECTS not known to occur in the United States. (p. 161).

Reports in this issue are for the week ending February 21 unless otherwise designated.

WEATHER OF THE WEEK ENDING FEBRUARY 24

For the third consecutive week the weather was unusually warm in the Far West and extremely cold in the East, despite a pronounced temperature rise east of the Rockies late in the week. Heavy precipitation was mostly limited to the Pacific States and Louisiana and Texas with 4 to 6 inches of rain during a 3-day period causing floods in southern portions of the latter State. The storm which blanketed the Northeast with heavy snow at the end of the previous week was responsible for cold, gusty winds up to 50 m.p.h. on the 17th and 18th. Drifting snow blocked roads throughout the Northeast and many rural areas were isolated. Warmer weather melted much of this snow cover elevations in the middle Atlantic States, but in New England reports in the 24th indicated depths ranging from 2 to 4 feet in northern sections, 10 to 20 inches in the South and under 10 inches along the coast. Extreme depths ranged up to 30 inches in northwestern Connecticut and 62 inches at Limestone, Maine. In the Southeast, the week was extremely cold. At Corinth, Miss., the temperature averaged for the week 2.5° lower than for any previous week on record. Ice jams were causing trouble in some streams in North Carolina. This was Florida's eighth consecutive cold week and frost or freezing extended southward into the Everglades region on 5 days. In some sections of Florida, it is already evident that the winter of 1957-58 will be the coldest on record. At Tampa where an almost unbroken temperature record dates back to 1825, this winter, even if temperatures are normal or slightly above the last few days (Continued on page 147)

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*) - NEW MEXICO - None found in 37 grain fields checked, Quay, Curry, Roosevelt, Lea and Eddy Counties. (N. Mex. Coop. Rept.). KANSAS - Very light populations present in some winter wheat fields in southwestern areas. (DePew).

BROWN WHEAT MITE (*Petrobia latens*) - KANSAS - Very light populations present in winter wheat fields, southwestern area. (DePew).

ALFALFA WEEVIL (*Hypera postica*) - NEVADA - Adults active in Churchill, Douglas, Lyon and southern Washoe Counties. Spraying in progress in these areas. (Bechtel, et al).

CLOVER LEAF WEEVIL (*Hypera punctata*) - NEVADA - Larvae active and beginning to damage young alfalfa shoots in Reno area, Washoe County. (Bechtel, Lauderdale).

CORN EARWORM (*Heliothis zea*) - OKLAHOMA - Intensive tests conducted during 1957 at 4 representative corn-growing locations showed an average yield reduction of 1.9 percent in field corn. (Arbuthnot).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - One very light infestation found in an alfalfa field near Hagerman, Chaves County. None found in alfalfa fields in Lea and Eddy Counties. (N. Mex. Coop. Rept.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - ARKANSAS - Twenty additional infestations involving 788 acres found in Mississippi County. Soil sampling was confined to approximately 4,690 acres, Craighead and Mississippi Counties, during the period. NORTH CAROLINA - One property totaling 15 acres found in Pender County. (PPC, So. Reg., Jan. Rept.).

FRUIT INSECTS

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - WASHINGTON - Winter females active on undersides of lower limbs of apple trees at Pullman, Whitman County, during record high temperature, February 19. (Johansen).

SOFT SCALE (*Coccus hesperidum*) - CALIFORNIA - Medium to heavy infestations on prune trees, Colusa County. Treatment complicated by presence of high bee population on blossoming mustard cover crop. (Cal. Coop. Rept.).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - OREGON - Overwintering adults active within pear buds. Eggs number few to as many as 154 within a single bud, February 17. (Gentner).

APPLE MEALYBUG (*Phenacoccus aceris*) - OREGON - Increasing abundance on filberts in restricted area near Gervais, Marion County, causing concern to growers. Female "crawlers" present on trunks and larger limbs and immature males in cottony masses in bark crevices, week of February 16. (Goeden).

APPLE APHID (*Aphis pomi*) - OREGON - Eggs present on approximately 5 percent of apple trees in many orchards inspected February 17 at Milton-Freewater. (Brown).

AN ARMORED SCALE (*Epidiaspis* sp.) - CALIFORNIA - Heavy infestation on plum trees, San Luis Obispo County. (Cal. Coop. Rept.).

SHOT-HOLE BORER (*Scolytus rugulosus*) - NEW MEXICO - Damaging peach trees in orchard at Ft. Sumner, De Baca County. (N. Mex. Coop. Rept.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Light infestations on 153 trees on 23 properties in States of Tamaulipas and Nuevo Leon. (PPC, Mex. Reg., Jan. Rept.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - No collections were made in 5 Rio Grande Valley counties during January. Total of 784 traps were operated. Believed that infestation is slow developing because of generally light infestation in Mexico together with unusual cold weather that prevailed in recent months. Only one adult trapped this season compared with 69 in 1956-57. (PPC, Sou. Reg.). MEXICO - No specimens collected in north-western area during January. (PPC, Mex. Reg.).

SIX-SPOTTED MITE (Eotetranychus sexmaculatus) - FLORIDA - Infestations increased sharply on citrus, week ending February 14. Will be severe when new growth becomes general. (Pratt, Thompson, Johnson).

TRUCK CROP INSECTS

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Based on index of populations, control treatment of approximately 25,000 acres in Imperial Valley was begun February 19. (Cal. Coop. Rept.).

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) - CALIFORNIA - Damaging artichokes in northern Santa Barbara County. (Cal. Coop. Rept.).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - Inspections of blooms and gin trash in Culiacan, Sinaloa zone were negative. Surface debris inspections in States of Tamaulipas and Nuevo Leon resulted in 21 live larvae found in total of 4,212 bolls from 287 fields. (PPC, Mex. Reg., Jan. Rept.) TEXAS - Surface debris inspections in Willacy, Cameron, and southern parts of Hidalgo and Starr Counties indicate that the carryover is the lightest in a number of years. (PPC, So. Reg., Jan. Rept.). OKLAHOMA - Inspections of 2 lint cleaners and 3 gin stands in 5 southern counties revealed 4 larvae, January 27 - February 5. (Fed.-State PBW Comm.).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Control measures applied to all known infested pines. (Young).

TIP MOTHS - TEXAS - Adults emerging in Jasper County. (Young).

AN ARBORVITAE APHID (Cinara tujafilina) - NEW MEXICO - Attacking arborvitae in Dona Ana, Grant, Curry and Roosevelt Counties. (N. Mex. Coop. Rept.).

CHEMIDS - TEXAS - Causing galls on yaupon holly, Harris County. (Garner).

ROSE APHID (Macrosiphum rosae) - NEW MEXICO - Infesting roses in Dona Ana and Grant Counties. (N. Mex. Coop. Rept.).

OLEANDER SCALE (Aspidiotus hederæ) - CALIFORNIA - Medium infestation on mulberry trees, San Luis Obispo County. (Cal. Coop. Rept.).

SOFT SCALE (Coccus hesperidum) - CALIFORNIA - Heavy on aralia in El Centro, Imperial County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - UTAH - Numerous in many feed lot cattle, Iron County. Common in Uintah and Duchesne Counties. Peak numbers not yet reached in most counties. (Knowlton). NEW MEXICO - Hypoderma sp. adults beginning to chase cattle at Deming, Luna County. (N. Mex. Coop. Rept.). SOUTH DAKOTA - Grubs, mostly H. lineatum, averaged 20-30 per head in calves in central areas. (Hantsbarger).

MOSQUITOES - NEVADA - Survey of major breeding areas east of Pitman and Whitney, Clark County, revealed numerous egg rafts and larvae. (Zoller). CALIFORNIA - Heavy populations Anopheles freeborni hibernating females continue to annoy residents of cities along the Sacramento River. Warm weather and heavy rains causing unusually early break in hibernation. (Fowler).

CATTLE LICE - UTAH - Numerous in Iron County herds and abundant in Duchesne County. Some herds severely infested. Infestations moderate to severe, Uintah County. Some heavy infestations reported from Cache and Boxelder Counties. Serious problem in many range herds, San Juan and Juab Counties. (Knowlton).

A COCKROACH (Blattella vaga) - CALIFORNIA - Infesting a house in Oakdale, Stanislaus County. Not a common species in the State. (Cal. Coop. Rept.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - MEXICO - Eight new infestations, totaling 883,378 cubic feet, found during January in Mexicali Valley of Baja California. (PPC, Mex. Reg.).

INDIAN-MEAL MOTH (Plodia interpunctella) - SOUTH DAKOTA - Heavy infestations on stored corn in Moody County. (Hantsbarger).

STORED GRAIN PESTS - OREGON - Inspections of 10 grain storage elevators during week of February 16 disclosed low to moderate infestations of grain pests. There were heavy infestations of LESSER GRAIN BORER (Rhyzopertha dominica) in barley and MEALWORMS and SAW-TOOTHED BEETLES in cracked corn at Grants Pass and MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) in shelled corn at Eugene. (Krantz, Capizzi).

BENEFICIAL INSECTS

LADY BEETLES - WASHINGTON - Adults of Stethorus picipes and Hippodamia convergens active in apple orchard at Pullman, Whitman County, February 19. (Johansen).

LIGHT TRAPS

	Hel. zea	Pseud. unip.	Plath. scab.	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subt.	Prod. ornith.
<u>FLORIDA</u>								
Quincy 2/11		4						
<u>LOUISIANA</u>								
Baton Rouge 1/8-2/20		22			17	9	13	6
Franklin 1/2-2/8		9			12	2	1	1
<u>TEXAS</u>								
Brownsville 2/9-14	2	4		6	5	2	20	
Weslaco 2/1-15		93		14	11	22	24	19

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Counties reported infested for the first time during January are Blount, Fayette and Shelby Counties, ALABAMA; Leon County, FLORIDA; Dooly, Marion, Miller and Laurens Counties, GEORGIA; and Berkeley and Marion Counties, SOUTH CAROLINA. The Laurens County, Georgia, infestations will cover approximately 350 acres. Other Georgia infestations are light. Treatments have been applied to heavily infested section of highway north of Montgomery, Alabama. Twelve nurseries treated in Hillsborough County and 130 acres in Marion County, Florida. In Decatur County, Georgia, 12,208 acres were treated by airplane and in 17 Louisiana parishes, 1,189 acres were treated. (PPC, So. Reg., Jan. Rept.).

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - NEVADA - Reproductive forms swarming in Reno-Sparks area, Washoe County. (Lauderdale, Ting).

A POWDER POST BEETLE (Lyctus brunneus) - CALIFORNIA - Heavily infesting bamboo blinds in house in Oakland, Alameda County. (Cal. Coop. Rept.).

CLOVER MITE (Bryobia praetiosa complex) - NEW MEXICO - Invading homes in Lincoln, Curry and Lea Counties. (N. Mex. Coop. Rept.). NEVADA - Causing increased annoyance to homeowners in Reno-Sparks area, Washoe County. (Bechtel, Lauderdale).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Entering house and causing annoyance in city of Baltimore. (U. Md., Ent. Dept.).

(Continued weather report)

of February, appears to be about 2° colder than any previous winter. West of the Continental Divide temperatures remained abnormally high in all areas for the third consecutive week. On the 22d the mercury rose to 67° at Boise, Idaho, the highest temperature ever recorded there in February during an 83-year record. In Oregon, the season is 2 to 4 weeks ahead of normal, with numerous flowers and trees blooming in the western part of the State. (Summary supplied by U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1957

RHODE ISLAND

Reported by W. N. Stoner

Weather Conditions: Climatic conditions were not at all usual this year. Early high temperatures and progressive drought caused an advance of the usual dates of appearance of some species. As the drought continued through the summer there was a general depressing effect on many species, due, it is believed, to a reduction of numbers and quality of wild and cultivated hosts. At the same time, however, dry conditions were favorable to certain species that may not normally be considered of great importance. Estimates of damage caused by insects this year were greatly complicated, and in some cases impossible to assess, due to the profound effects of the prolonged drought.

Cereal and Forage Crop Insects: STALK BORER (*Papaipema nebris*) was active earlier than usual by about three weeks. It attacked an extremely wide host range and caused some early damage in field, forage, and sweet corns. EUROPEAN CORN BORER (*Pyrausta nubilalis*) was not as severe as expected from the 1956 fall incidence survey, in field and forage corn that was not irrigated. In plantings of forage corn with adequate moisture of sweet corn under irrigation attack was very pronounced in localized areas, especially in late varieties. APHIDS were adversely affected by high temperatures and drought and not until late in the season did populations begin to increase but too late to cause direct loss. The CORN EARWORM (*Heliothis zea*) was only a problem in sweet corn produced without control measures. The CLOVER ROOT CURCULIO (*Sitona hispidula*) and A CLOVER WEEVIL (*Sitona flavescens*) were found in red clover, alfalfa, ladino clover, and white clover. Relatively large numbers of the grubs were present and causing some root damage. Foliage feeding of adults was severe in localized areas.

Fruit Insects: Because of the early high temperatures fruit growers paid particular attention to spray schedules and in general obtained good control of the usual fruit insects. In unprotected home plantings and in abandoned orchards depredations of APPLE MAGGOT (*Rhagoletis pomonella*), PLUM CURCULIO (*Conotrachelus nenuphar*), CODLING MOTH (*Carpocapsa pomonella*) and early in the season ROSY APPLE APHID (*Anuraphis roseus*) were very severe and neglected trees constituted a heavy source of infestation throughout the season. MITES were well under control in most areas with indications of injury on apples late in the season where spraying was discontinued too soon. Grapes in small plantings suffered considerable foliar attack by the GRAPE PHYLLOXERA (*Phylloxera vitifoliae*) and foliar, stem and tendril damage from A GRAPE TOMATO GALL (*Lasioptera vitis*). Late in the season as fruit ripened GRAPE BERRY MOTH (*Paralobesia viteana*) caused severe injury in very localized areas. APPLE MAGGOT (*Rhagoletis pomonella*) emerged in June about three weeks early. ORIENTAL FRUIT MOTH (*Grapholitha molesta*) caused considerable shoot damage to peach trees in certain areas as many growers discontinued spraying after late frosts practically eliminated peach fruits. One extremely severe infestation of STRAWBERRY WHITEFLY (*Trialeurodes packardii*) was noted in mid-July and was not entirely eliminated by repeated, careful spraying by first frost.

Truck Crop Insects: COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*), IMPORTED CABBAGEWORM (*Pieris rapae*), CABBAGE LOOPER (*Trichoplusia ni*) and TOMATO HORNWORM (*Protoparce quinquemaculata*) ordinarily a problem in wide distribution, were fewer in numbers and damage was quite localized. STALK BORER (*Papaipema nebris*) was abundant in potatoes and peppers. There was considerable loss to peppers from borers invading newly set plants

necessitating extensive resetting in many cases. MEXICAN BEAN BEETLE (Epilachna varivestis) developed large localized populations in market garden plantings of various types of beans abandoned due to drought. SQUASH BUG (Anasa tristis) and SQUASH VINE BORER (Melittia cucurbitae) were relatively abundant, causing usual amount of damage. STRIPED CUCUMBER BEETLE (Acalymma vittata) adults were present in relatively large numbers early in the season causing heavy damage to emerging seedlings. Serious damage was also caused by eating out ovaries of early bloom of cucurbits eliminating some of the early production. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) appeared very late in the season and in exceedingly small numbers.

Both SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) and ASPARAGUS BEETLE (Crioceris asparagi) adults were present very early in the season. Considerable damage was caused by larvae hatching from eggs laid by the early emerging adults. What appeared to be second generation adults and the larvae from their eggs both caused severe foliar damage to asparagus from July to September. Damage to early potatoes and tomatoes was severe from foliage feeding by POTATO FLEA BEETLE (Epitrix cucumeris) and what appeared to be the 1957 season's brood caused foliar injury to potatoes relatively late in the season. One note of special interest was the general distribution and high populations of the THREE-LINED POTATO BEETLE (Lema trilineata) throughout the summer. Ordinarily this insect is present in negligible numbers, but in 1957 it probably caused more foliar injury to potato than the COLORADO POTATO BEETLE. Three species of BLISTER BEETLES (Epicauta pestifera, E. pennsylvanica and Epicauta sp.) were taken on tomato and potato in larger numbers than usual. Epicauta pestifera caused economic loss on early tomato fruits. CABBAGE MAGGOT (Hylemya brassicae) occurred in widely scattered locations very early in the season causing severe losses in early turnips and radishes. SPINACH LEAF MINER (Pegomya hyoscyami) occurred early and generally. Foliar damage from larvae was encountered all through the 1957 season in garden beets and swiss chard with as many as 6 larvae per burrow and as much as one half of the leaf area destroyed.

Forest Ornamental and Shade Tree Insects: The number of species causing damage was less this year, but there was some rather severe damage from apparently above normal populations of particular insects. Early in the season BIRCH LEAF MINER (Fenusa pusilla) caused extreme foliar damage to birch statewide. Trees appeared scorched and a second strong attack followed later in replacement foliage. GYPSY MOTH (Porthetria dispar) was light to moderate in some locations but well controlled by timely spray applications. SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) was about as active as in 1956 with only a very slight increase in incidence of Dutch elm disease. Experiments conducted on emergence indicate a starting date in the last week of May. PINE NEEDLE MINER (Exoteleia pinifoliella) severely infested pitch pine in southern half of State and in local areas in northern half by mid-season. Injury was extensive with some needle drop and a general browning of all foliage. Many species of oaks were severely injured by loss of foliage due to SOLITARY OAK LEAF MINER (Cameraria hamadryadella) and GREGARIOUS OAK LEAF MINER (Cameraria cincinnatiella). Burrows of the former were most numerous. Larvae of ORANGE-STRIPED OAKWORM (Anisota senatoria) began feeding on leaves of bottom branches of various species of oak around the first of August, stripping 30 percent of foliage from trees by the end of September in many localized areas.

COOLEY SPRUCE GALL APHID (Chermes cooleyi) was reported early in May and continued as one of the most serious pests on ornamental spruce throughout the State. FALL WEBWORM (Hyphantria cunea) distribution was statewide around the first of August and caused considerable foliar damage on a wide host range including apple, wild cherry, elm, and maple and on bayberry on Block Island. OYSTERSHELL SCALE (Lepidosaphes ulmi) populations were heavy statewide on willows, pachysandra, lilac, and poplar. EASTERN TENT CATERPILLAR (Malacosoma americanum) occurred in large numbers from April to July in a

statewide distribution, principally on wild cherry. PINE NEEDLE SCALE (Phenacaspis pinifoliae) was statewide in widespread infestations on various varieties of ornamental pines. WHITE-PINE WEEVIL (Pissodes strobi) damage to pines and spruces for 1957 was considerably less than usual. Root attacks of BLACK VINE WEEVIL (Brachyrhinus sulcatus) on taxus were fairly widespread, but much lighter than usual. ROSE CHAFER (Macrodactylus subspinosus) appeared early in June in unusually large number, attacking an extremely wide host range including many ornamentals. Inquiries were more numerous in 1957 than those on JAPANESE BEETLE (Popillia japonica) which was not the problem that it generally is. Foliage of the hackberry tree was very heavily galled statewide by HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma). Severe infestations of the EUONYMUS SCALE (Unaspis euonymi) occurred on euonymus and pachysandra in several widely scattered locations. Infestations of MAPLE BLADDER-GALL MITE (Vasates quadripedes) were widespread and often on many different species of maple. STALK BORER (Papaipema nebris) severely attacked ornamentals such as phlox, dahlia, and forsythia. In most cases this was in conjunction with attacks on corn, peppers, potatoes, and, in some cases, weeds in garden plots.

Turf Insects: Injury from turf insects was either less severe than usual or somewhat masked because of the drought. ASIATIC GARDEN BEETLE (Autoserica castanea) adults were not nearly as numerous as usual in 1957 nor were JAPANESE BEETLE adults. CLOVER MITE (Bryobia praetiosa) caused considerable annoyance to householders in widely scattered locations early in the season. MEADOW SPITTLEBUG (Philæenus leucophthalmus) occurred in relatively large numbers early in the season on various turf plants, but many nymphs failed to reach maturity because of the drought. Populations of certain leafhoppers also suffered, but one LEAFHOPPER, Draeculacephala antica was found in several widespread locations all season where the turf remained green. One report was made of a medium adult population of SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons). Field symptoms of aster-yellows virus were quite distinct in aster, carrot, lettuce and celery in this area. One report of a localized outbreak of ARMYWORM (Pseudaletia unipuncta) late in the season was received from Newport and a single heavy infestation of SOD WEBWORMS (Crambus spp.) was observed in Kingston in late July.

Insects Affecting Man and Animals: There was a general lack of complaints or reports in 1957. NORTHERN HOUSE MOSQUITO (Culex pipiens) and Aedes excrucians flared up in short-lived local infestations in May and the last of August. BROWN SALT-MARSH MOSQUITO (Aedes cantator) and Aedes canadensis were active around the first of June in annoying numbers in a very few widely scattered locations. Occurrence of EQUINE ENCEPHALOMYELITIS was very rare this season. AMERICAN DOG TICK (Dermacentor variabilis) was reported the end of March and continued in high populations over a wide area until the end of June. Specimens from the Smithfield area may mean a northward extension of the range of this pest. Populations of the HOUSE FLY (Musca domestica) were lower than usual with small peaks in June and September. One confirmed report of a single sheep infested with Chorioptes caprae occurred in July. One extremely heavy and annoying infestation of HUMAN FLEA (Pulex irritans) was reported in a home at Wakefield in July.

Household Pests: WHARF BORER (Nacordea melanura) was found infesting an old building in Providence in June. Species causing annoyance by invasion of homes were FIELD CRICKET, TWO-SPOTTED LADY BEETLE, CLOVER MITE, ELM LEAF BEETLE, and EUROPEAN EARWIG, the latter species being reported from many areas. Damage to timbers in homes by EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) was reported from many locations. BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus) was also frequently reported damaging timbers in homes. OLD HOUSE BORER (Hylotrupes bajulus) was reported not only in old homes, but in new construction and even lumber. BLACK CARPET BEETLE (Attagenus piceus) adults and larvae were found in moderate to heavy infestations in homes in many localities.

Miscellaneous: An outbreak of CHAIN-SPOTTED GEOMETER (*Cingilia catenaria*) occurred over a 30 acre area near Matunuck in incredible numbers, feeding on practically all plants, even conifers.

SUMMARY OF INSECT CONDITIONS - 1957

CONNECTICUT

Compiled by William D. Tunis

Forage Crop Insects: ALFALFA WEEVIL (*Hypera postica*) was found for first time in 1957. Highest populations appear to be in Fairfield and Litchfield Counties; however, no damage was observed in 1957. POTATO LEAFHOPPER (*Empoasca fabae*) was very abundant on alfalfa.

Fruit Insects: PLUM CURCULIO (*Conotrachelus nenuphar*) was serious on apples throughout the State. APPLE MAGGOT (*Rhagoletis pomonella*) high populations continued for the third year; unusually abundant late in season, flies easily detected during harvest. CODLING MOTH (*Carpocapsa pomonella*) was generally light throughout the State. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) was also generally light except for moderate infestations in some orchards. APHIDS were generally light on fruit. EUROPEAN RED MITE (*Panonychus ulmi*) and TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) were severe throughout State. Unusually dry summer favored buildup. Phosphate-type insecticides generally gave poor control. SAN JOSE SCALE (*Aspidiotus perniciosus*) continues to buildup, rapidly becoming a serious problem in some orchards. PEAR PSYLLA (*Psylla pyricola*) populations moderate throughout the State. CUTWORMS on strawberries were severe in scattered locations. CYCLAMEN MITE (*Steneotarsonemus pallidus*) on strawberries was severe in a few locations. GRAPE BERRY MOTH (*Paralobesia viteana*) was generally abundant.

Vegetable Insects: MEXICAN BEAN BEETLE (*Epilachna varivestis*) showed unusually light populations for second consecutive year. LEAFHOPPERS were very abundant on beans and lettuce. SPINACH LEAF MINER (*Pegomya hyoscyami*) was abundant on beet, chard, and spinach. CABBAGE MAGGOT (*Hylemya brassicae*) was moderate throughout the State. CABBAGE APHID (*Brevicoryne brassicae*) was generally moderate. CABBAGE LOOPER (*Trichoplusia ni*) and IMPORTED CABBAGE-WORM (*Pieris rapae*) were generally abundant on cole crops. EUROPEAN CORN BORER (*Pyrausta nubilalis*) and CORN EARWORM (*Heliothis zea*) were moderate to severe throughout the State. STRIPED CUCUMBER BEETLE (*Acalymma vittata*) population was moderate. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) was generally light. FLEA BEETLES on potato were light to moderate. APHID populations on potato were moderate to severe.

Livestock Insects: HOUSE FLY (*Musca domestica*) populations were light to moderate with heavy populations reported in local areas where sanitation was poor. HORN FLY (*Siphona irritans*) and STABLE FLY (*Stomoxys calcitrans*) populations were generally light. LICE on cattle were generally light. MITES and LICE on poultry were generally light except for severe infestations in scattered localities.

SUMMARY OF INSECT CONDITIONS - 1957

VIRGINIA

Reported by A. P. Morris

Cereal and Forage Insects: **CORN EARWORMS** (*Heliothis zea*) were responsible for heavy damage, or large expenditures to prevent damage, to Virginia crops during 1957. They were especially expensive to soybean growers in the southeastern and eastern part of the State and also damaged peanuts, milo, sorghum, and corn. Larval damage to soybeans began to be serious enough to warrant control during the week of August 23 and continued until the crops were mature. As soybeans were later than usual, they were especially susceptible to damage by earworms. Most fields in the eastern and southeastern areas were treated by airplane. In some fields not treated early enough the bean crop was lost. Heaviest light trap catches of adults at Norfolk were made August 2, 5, and 13. **ALFALFA WEEVIL** (*Hypera postica*) was again very destructive to alfalfa or costly to control in practically the entire State. The pest continued to spread and is now found in all but 10 counties in the southwestern corner of the State. Controls had to be applied in most alfalfa fields in approximately 70 counties. The peak of larval activity was reached about April 20 in most parts of the State. In untreated fields plants appeared white as the result of leaf tissue being almost completely consumed. The net value of alfalfa weevil control is estimated to be \$2,356,992 for 1957. **ARMYWORM** (*Pseudaletia unipuncta*) outbreaks occurred in all parts of the State but were not general in the areas involved.

FALL ARMYWORM (*Laphygma frugiperda*) outbreaks occurred to some extent in all parts of the State but were far from general in the areas involved. Crops damaged were pastures, peanuts, small grains for cover crops, milo, soybeans, ryegrass, corn, vetch, grasses, and crimson clover. **VELVETBEAN CATERPILLARS** (*Anticarsia gemmatilis*) were a serious economic problem on soybeans in southeastern and eastern Virginia for the first time during 1957. This species damaged peanuts also, but to a much smaller extent than soybeans. During the week of September 20 large numbers of adults were caught in the light trap at Norfolk. All fields of soybeans surveyed during the week of September 28 were infested and most infestations were heavy. Infestations continued heavy in most fields through the week of October 18. **PEA APHID** (*Macrosiphum pisi*) populations needed controls in a few isolated fields scattered over the State during April and May. **CUTWORMS** damaged corn and peanuts in widely separated parts of the State during the year. **MEADOW SPITTLEBUG** (*Philaenus leucophthalmus*) nymphs were heavy in many southwest alfalfa and clover fields and also in some scattered fields in other parts of the State. Nymphs appeared on alfalfa after the first cutting in some instances and did noticeable damage. **EUROPEAN CORN BORER** (*Pyrausta nubilalis*) infestations were lighter than for a number of years in two areas surveyed. The average number of borers per 100 plants was 117 for the southwestern and the northern areas and 63 percent of the stalks in the fields were infested. Very heavy damage to corn was reported in the eastern and southeastern areas. European corn borer also heavily damaged some fields of wheat in Charles City and King George Counties. **CLOVER LEAF WEEVIL** (*Hypera punctata*) required very few applications of insecticides during 1957. **CORN ROOT WEBWORM** (*Crambus caliginosellus*) caused 50 percent damage to corn in some areas of Pittsylvania County. **LESSER CORNSTALK BORER** (*Elasmopalpus lignosellus*) damaged corn to a small extent in Nansemond County and lightly damaged peanut fields in Sussex and James City Counties. **GREEN CLOVERWORMS** (*Plathypena scabra*) were a problem in a few fields of soybeans in southeastern and eastern Virginia. **POTATO LEAFHOPPERS** (*Empoasca fabae*) were heavy in some areas on peanuts in southeastern Virginia, and many growers made insecticidal applications to control them. Populations were present on alfalfa in all parts of the State by May 31

and built up to heavy populations in some fields. CLOVER ROOT BORERS (*Hylastinus obscurus*) were present in large numbers in some clover and alfalfa fields. SPOTTED ALFALFA APHIDS (*Therioaphis maculata*) were not a problem in Virginia during 1957, although 2 or 3 heavy populations were seen. No specimens of this species were found in Virginia fields before the middle of June. SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) was not as much of a problem in peanut fields in southeastern Virginia as usual. BEAN LEAF BEETLES (*Cerotoma trifurcata*) were a problem on soybeans in Norfolk County in August. THRIPS damaged corn in some fields in Culpeper, Fauquier, and Botetourt Counties. They were heavy in some fields of peanuts in southeastern Virginia. Both corn and peanut plants outgrew the damage, however. SPIDER MITES became quite general on soybeans on the Eastern Shore, and by August 23 many fields had sections nearly defoliated. RICE WEEVIL (*Sitophilus oryza*) infestations were heavy in corn fields in southeastern Virginia during September. THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) damaged alfalfa in Amherst County during July. A LOOPER (*Pseudoplusia includens*) was numerous on soybeans in some Westmoreland County fields on September 28.

Fruit Insects: RED-BANDED LEAF ROLLERS (*Argyrotaenia velutinana*) were more of a problem in Virginia apple orchards than usual, partly because of resistance to the primary insecticide used to control them. Resistant populations may now be present in nearly all parts of the State. Three to five applications were applied in some northern Virginia orchards and populations were still present. CODLING MOTH (*Carpocapsa pomonella*) infestations were below normal in apple orchards during 1957 but caused more than the usual trouble in a few scattered orchards. UNSPOTTED TENTIFORM LEAF MINERS (*Callisto geminatella*) were of minor importance in apple orchards during 1957. APPLE APHIDS (*Aphis pomi*) were slightly more of a problem in apple orchards in northern Virginia during 1957 than in previous years. Infestations were present throughout the growing season, and controls were applied. ROSY APPLE APHIDS (*Anuraphis roseus*) did little commercial damage. WOOLLY APPLE APHIDS (*Eriosoma lanigerum*) have hardly been in evidence in orchards for the last three years, and populations were still lower again this year. EUROPEAN RED MITES (*Panonychus ulmi*) were about normal in apple orchards in northern Virginia but were heavy in a few apple orchards in the Piedmont area and caused some trouble. This species, however, was troublesome in peach orchards in the Piedmont area and in eastern areas. Infestations were more persistent and heavier than usual on peach trees. STRAWBERRY SPIDER MITES (*Tetranychus atlanticus*) were severe on strawberry plants in southeastern and eastern Virginia during the spring and were very hard to control. ORIENTAL FRUIT MOTH (*Grapholitha molesta*) was responsible for more damage to peaches than for a number of years. LESSER PEACH TREE BORERS (*Synanthedon pictipes*) were heavier than previously in peach orchards and are building up more every year in all parts of the State. PLUM CURCULIOS (*Conotrachelus nenuphar*) were not a problem in apple orchards but caused light commercial injury in peach orchards. APPLE FLEA WEEVIL (*Rhynchaenus pallicornis*) damaged foliage heavily in two Wise County apple orchards, was medium in one, and light in others. Infestations are slowly spreading and increasing in the county. PERIODICAL CICADA (*Magicicada septendecim*) heavily damaged apple trees in some orchards in Wise County but were not a problem in orchards elsewhere in the State. JAPANESE BEETLES (*Popillia japonica*) were heavier than usual in northern Virginia but did not damage apple orchards. They heavily damaged ripening peaches in some peach orchards.

Truck Crop Insects: MEXICAN BEAN BEETLE (*Epilachna varivestis*) was serious on the bean crops where insecticidal applications had not been made by June 21. By July 19 populations were about as heavy as they had been for some year, were causing severe injury where controls had not been adequate and new adults were ovipositing heavily on snap and lima beans. CORN EARWORMS (*Heliothis* sp.) damaged tomatoes, snap and lima beans, sweet corn, kale, collards, and other cruciferous crops in southeastern and eastern truck cropping areas during 1957. Damage was usually heavy only on these crops where insecticidal applications were not used or inadequately used.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) infestations on potatoes were heavier than in 1956, and the insect seemed to be present in large numbers about 2 weeks earlier than usual this year. SPIDER MITES (largely Tetranychus telarius) became severe on snap and lima beans, tomatoes, eggplants, cucumbers, cantaloupes, and black-eyed peas in southeastern and eastern truck cropping areas, heaviest on the Eastern Shore. CABBAGE LOOPER (Trichoplusia ni), IMPORTED CABBAGEWORM (Pieris rapae), and DIAMONDBACK MOTH (Plutella maculipennis) heavily damaged cabbage, broccoli, and cauliflower crops in the truck cropping areas of southeastern and eastern Virginia from early July through October. Much of the damage by these insects was the result of improper timing of insecticidal applications or no insecticidal applications. HORNWORM (usually Protoparce quinquemaculata) damage to tomatoes on the Eastern Shore and in Hanover County was heavy. EUROPEAN CORN BORERS (Pyrausta nubilalis) heavily damaged sweet corn and did considerable damage to potato plants on the Eastern Shore. POTATO FLEA BEETLE (Epitrix cucumeris) damaged tomato, potato and young cole crops in the southeastern truck cropping areas and on the Eastern Shore during 1957. Most of the damage occurred in the fall. BEAN LEAF BEETLES (Cerotoma trifurcata) did considerable damage to young snap beans in the Norfolk area during May. JAPANESE BEETLES (Popillia japonica) injured sweet corn, snap beans, and other truck and garden crops to a small extent during 1957. Populations were higher in many areas than they have been for the last three or four years. POTATO TUBERWORM (Gnorimoschema operculella) damage was heavy to potato plants in some Eastern Shore fields during the first half of July. SERPENTINE LEAF MINERS (Liriomyza sp.) damaged truck crops extensively on the Eastern Shore during the last half of August. POTATO LEAFHOPPER (Empoasca fabae) outbreaks on potatoes on the Eastern Shore and on snap and lima beans in southeastern Virginia were the worst encountered in recent years during late June and early August. PICKLEWORM (Diaphania nitidalis) did considerable injury to some plantings of cantaloupes in southeastern Virginia in July but were only light on late cucumbers, pumpkins, and squash late in September.

Tobacco Insects: HORNWORMS (Protoparce sexta and P. quinquemaculata) damaged flue-cured, dark-fired, and burley tobacco in 1957 but to a lesser degree than usual. Populations of the first generation were heavy enough to justify controls by the middle of June. Second-generation larvae required controls about the first of August. TOBACCO FLEA BEETLE (Epitrix hirtipennis) caused little trouble in tobacco in 1957, not as much trouble as in 1956. WIREWORMS were not generally a problem during 1957, but several heavy infestations caused considerable damage in a few spots in tobacco-growing areas. TOBACCO BUDWORMS (Heliothis sp.) were unusually light on tobacco plants in most fields and very little insecticide was used. GREEN PEACH APHIDS (Myzus persicae) were generally light and controls were needed in very few fields. Natural enemies and the weather combined kept infestations low. VEGETABLE WEEVIL (Listroderes costirostris obliquus) adults fed so heavily on the leaves and stalks of newly set tobacco plants in a one acre field in Halifax County that the field had to be replanted 3 times. GREEN JUNE BEETLE (Cotinis nitida) larvae were heavy in a 1400 square foot tobacco plant bed, and MIDGE LARVAE were medium to heavy in 700 square yards of plant bed in Pittsylvania County.

Forest Ornamental and Shade Tree Insects: IPS BARK BEETLES were the worst killers of pine forest and shade trees in Virginia during 1957. Principle species apparently were Ips calligraphus and I. avulsus. Much of the damage was to scattered small groups of trees on large plantations. The peak of the apparent damage occurred during September. SOUTHERN PINE BEETLE (Dendroctonus frontalis) damaged and killed pine trees in all areas. Single shade trees up to scattered groups of several trees on large plantations were killed. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) also killed many pine forest and shade trees; damage was widespread. Plantations and shade trees in the central, south central, southeastern and eastern areas were hard hit, as were a few plantations in 2 or 3 of the northern counties.

NANTUCKET PINE MOTH (*Rhyacionia frustrana*) did considerable damage to loblolly and Virginia pines in a large area during 1957 and damage is increasing all over the State. Several species of SCALE INSECTS were of importance usually on individual or small groups of ornamental plants, throughout the State. Outbreaks of PINE BARK APHIDS (*Pineus strobi*) began to show up as early as January in 1957, and the number of infestations increased as the season progressed until the fall. WHITE PINE WEEVIL (*Pissodes strobi*) damaged the terminals of pine seedlings, young pines, and plantations in scattered areas. MIMOSA WEBWORM (*Homadaula albizziae*) damage to mimosa trees became obvious by the middle of June and continued until the cold weather. The species is present all over the State. PINE SAWFLY larvae began defoliation of pine trees in April and did considerable damage through October. Damage was heaviest in central, eastern, southeastern and south central areas. *Neodiprion lecontei* is believed responsible for most of the damage although *Neodiprion t. taeciae* is known to have been responsible for extensive defoliation of pines in scattered areas in Mathews County. Increases in the number of infestations in the south central and southeastern counties may mean an epidemic in these areas in 1958. JAPANESE BEETLES (*Popillia japonica*) damaged forest and shade trees, ornamental plants, and flowers in all the infested areas of the State. From reports received, it is judged that populations were heavier in some areas than they have been during recent years. One large airfield, comprising several thousand acres, was treated in the southeastern part of the State to eradicate an infestation and to prevent spread. PALES WEEVIL (*Hylobius pales*) heavily damaged pine seedlings or pine trees in 4 scattered spots. FALL WEBWORM (*Hyphantria cunea*) was usually light but heavy in some instances. VARIABLE OAK LEAF CATERPILLAR (*Heterocampa manteo*) defoliated oaks in one large area in Warwick County. ELM LEAF BEETLE (*Galerucella xanthomelaena*) damaged leaves of elm trees throughout the State. GREEN JUNE BEETLE (*Cotinis nitida*) larvae damaged lawns in spots in all parts of the State. GIANT HORNET (*Vespa crabro germana*) stripped the bark from lilac bushes and apple twigs in many places but was usually controlled before plants were extensively damaged. PERIODICAL CICADA (*Magicicada septendecim*) began emerging about May 7, became heavy enough to damage forest and shade trees in Lee, Scott, Wise, Buchanan, and Dickenson Counties. ROOT COLLAR BORERS (*Euzophera ostricolorella*) have done extensive mining in yellow poplar stands in southwest Virginia in the past and the damage is now being noticed. They were also active and widespread in tracts in Southampton, Greenville, and Princess Anne Counties.

Insects Affecting Man and Animals: HOUSE FLIES (*Musca domestica*) were heavy around homes, barns and other such places. MOSQUITOES were heavy in the southeastern and eastern areas. CATTLE GRUBS (*Hypoderma lineatum* and *H. bovis*) began appearing in the backs of cattle as early as January 4, and were quite heavy by February. Practically all herds in the state were affected to some degree. SHEEP SCAB MITES (*Psoroptes equi ovis*) are a year round problem on sheep in northern and southwestern Virginia but are more of a problem during the winter months. Over 8,200 head of sheep were found scabby in 1957, and approximately 8,600 head were treated. In addition, an unidentified species of scab mite was found on 22 head of cattle in Fauquier County and treated. TICKS were not a problem on cattle but did cause trouble in some homes. SECONDARY SCREW-WORM (*Callitroga macellaria*) was very heavy in the skin of five sheep on a farm in Montgomery during late September. Three of the sheep died and the larvae are believed to have been responsible. CHIGGERS (*Eutrombicula alfreddugesi*) heavily damaged the legs of bronze turkeys on a farm in Rockingham County during July. One farmer lost approximately \$1,500 because of lowering of grade. Larvae of A GREEN BOTTLE FLY (*Phaenicia sericata*) were found in the canal of a man's ear in Radford. TABANIDS became heavy on livestock of southeastern area in summer. STABLE FLY (*Stomoxys calcitrans*) was not a problem on cattle.

Cotton Insects: BOLL WEEVIL (Anthonomus grandis) rate of survival for overwintering adults was 29 percent for four southern Virginia counties. There was an average of 1,210 weevils per acre for the entire cotton-growing area of the State. Infestations became heavy by July, and many farmers applied insecticides from one to four times. Losses were fairly heavy. BOLLWORMS (Heliothis sp.) appeared late and caused only light damage. SPIDER MITES became heavy in a few cotton fields. THRIPS damage to young seedling cotton was medium in most fields.

Household Insects: COCKROACHES are the number one household insect pests in the State. BROWN-BANDED ROACH (Supella supellectilium) appears to be most troublesome and abundant species at present.

Structural Wood Insects: TERMITES were the number one insect pests of structural wood in Virginia during 1957. Many requests for control measures were received. A number of specimens and reports of infestations involved public buildings, although a majority involved private homes or building establishments. WOOD-BORING BEETLES were probably the number two insect pests of structural wood in Virginia during 1957. Where specimens were obtained, OLD HOUSE BORERS (Hylotrupes bajulus) were present most of the time and Lyctus beetles present several times. CARPENTER BEES (Usually Xylocopa virginica) damaged lumber in buildings in Floyd, Roanoke, Stuart, Patrick, and Henrico Counties and in Richmond.

Stored Food Insects: RICE WEEVILS (Sitophilus oryza) and GRANARY WEEVILS (Sitophilus granarius) were again responsible for considerable damage to corn and small grains stored on farms throughout the State and to grains in commercial and government leased elevators. These weevils are the number one insect destroyers of grain in Virginia. ANGOUMOIS GRAIN MOTHS (Sitotroga cerealella) are considered second to the grain weevils in importance as destroyers of stored grain. POTATO TUBERWORMS (Gnorimoschema operculella) damaged potatoes stored in homes and in potato storage houses in the State. LARDER BEETLE (Dermestes lardarius) damaged stored hams in Rockbridge and Augusta Counties. A KHAPRA BEETLE (Trogoderma granarium) survey in Virginia covered a total of 203 mills with no positive infestations found so far.

Beneficial Insects: Cocoons of parasites (probably Apanteles militaris) were very numerous in a number of fields following armyworm outbreaks in the spring. LADY BEETLES were responsible for holding down populations or reducing heavy populations of aphids on alfalfa, corn, tobacco, and various species of trees during 1957.

SUMMARY OF INSECT CONDITIONS - 1957

ALABAMA

Prepared by Walter H. Grimes

Highlights: Insect infestations were outstanding as far as major crops were concerned. EUROPEAN CORN BORER continued its southward spread into nine additional counties. Damage by FALL ARMYWORM was heavy in some areas almost completely destroying some fields of corn. VELVETBEAN CATERPILLAR was particularly injurious to soybeans and peanuts in southern parts of the State. CABBAGE LOOPER caused considerable damage to the foliage of cotton in central and southern areas. COWPEA CURCULIO caused heavy damage in several areas of the State. SCREW-WORM was present in large numbers. Other insects that were conspicuously troublesome were CORN EARWORM, MEXICAN BEAN BEETLE, SORGHUM WEBWORM, STRIPED BLISTER BEETLE, YELLOW-STRIPED ARMYWORM, RICE WEEVIL, ANGOUMOIS GRAIN MOTH, BOLL WEEVIL, BOLLWORM, APHIDS, COTTON LEAFWORM, SPIDER MITES, IMPORTED FIRE ANT, CAT FLEA, and BROWN DOG TICK.

Cereal and Forage Insects: FALL ARMYWORM (*Laphygma frugiperda*) cost farmers an estimated \$451,600 during 1957 damaging principally corn, (\$205,200) peanuts (\$225,525) and grain sorghum, (\$4,275) and was extremely destructive to pasture and clover crops in localized areas causing severe damages (\$16,600). CORN EARWORM (*Heliothis zea*) caused an estimated loss of \$1,520,270 to field and sweet corn and \$32,500 damage to grain sorghum. EUROPEAN CORN BORER (*Pyraustanubilalis*) appeared in 9 additional counties in 1957, bringing the number of infested counties to 24, all in northern area. Damage was primarily to corn, estimated to be \$125,000, and to grain sorghum \$25,000. SORGHUM WEBWORM (*Celama sorghiella*), LEAF-FOOTED BUG (*Leptoglossus phyllopus*) and STINK BUG infestations were light to medium in grain sorghum over the entire State with damages estimated at \$20,900. In the southern and central parts of the State VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) caused an estimated loss of \$267,500 to peanuts and \$119,250 to soybeans. CABBAGE LOOPER (*Trichoplusia ni*) and CORN EARWORM also damaged soybeans. STRIPED BLISTER BEETLE (*Epicauta* sp.), SPOTTED ALFALFA APHID (*Therioaphis maculata*) and THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) caused moderate to heavy damage to alfalfa. The spotted alfalfa aphid was found for the first time in Alabama in 1956. During 1957 this insect was found in 11 counties and is believed to have spread over the entire State. Surveys over limited acreage revealed that MEXICAN BEAN BEETLE (*Epilachna varivestis*) and SOUTHERN GREEN STINK BUG (*Nezara viridula*) were very damaging to the young pods of soybeans and are becoming increasingly important to the soybean industry. WHITEFLIES were also noted in epidemic proportions on soybeans in the south-central area. GRASSHOPPERS of various species were found in unusually high numbers in pasture crops during the early part of September in Dallas and Wilcox Counties. LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*), CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) and STALK BORER (*Papaipema nebris*) attacked corn, grain sorghum, peanuts, and other crops in localized areas causing damage estimated at \$550,000. PINK SCAVENGER CATERPILLAR (*Pyroderces rileyi*) was numerous on corn in Lee County during October. VELVETBEAN CATERPILLAR severely damaged kudzu and alfalfa in central part of State during early fall. ALFALFA CATERPILLAR (*Colias philodice eurytheme*) and GREEN CLOVERWORM (*Plathypena scabra*) caused light damage to alfalfa in Lee County in early October. Infestations of CORN LEAF APHID (*Rhopalosiphum maidis*) were lighter than in 1956. SOUTHERN CORNSTALK BORER (*Diatraea crambidoides*)

lightly damaged corn in localized area. Light damage to oats was caused by the GREENBUG (Toxoptera graminum) during late October. In mid-November PEA APHID (Macrosiphum pisi) caused light damage to vetch in areas of Lee County. RAPID PLANT BUG (Adelphocoris rapidus) caused considerable damage in these areas. In late November and early December WHITE GRUBS were present in economic proportions in sodded areas in northern counties. TOBACCO THRIPS (Frankliniella fusca) caused considerable stunting of peanuts in Houston, Henry, and Coffee Counties.

Fruit Insects: FALL WEBWORM (Hyphantria cunea) was general in pecan trees over the State from early summer to fall. SHOT-HOLE BORER (Scolytus rugulosus) was numerous in dead limbs of reclining peach trees in Lee County during late July. APPLE APHID (Aphis pomi) and WOOLLY APPLE APHID (Eriosoma lanigerum) infestations were heavy on water sprouts of apple trees in late July in Lee County, and the latter was also found on the roots of apple trees. BLACK PECAN APHID (Melanocallis caryaefoliae) infestations were heavy in early summer but light during late July and early August. Light infestations of GRAPE FLEA BEETLE (Altica chalybea) damaged muscadines in Madison County during early August. Light infestations of FLANNEL MOTHS were observed on apple trees in Morgan County during mid-summer. ORIENTAL FRUIT MOTH (Grapholitha molesta) heavily damaged photinia in Lee County. Damage by PEACH TREE BORER (Sanninoidea exitiosa) was relatively light as was damage by the GRAPEVINE APHID (Aphis illinoisensis)

Truck Crop Insects: CORN EARWORM (Heliothis zea) and FALL ARYWORM (Laphygma frugiperda) were particularly injurious to sweet corn during early season. Severe damage was again recorded in fields of late sweet corn. TOMATO FRUITWORM caused considerable damage to the tomato crop in the southern part of State. SQUASH VINE BORER (Melittia cucurbitae) inflicted moderate damage in several counties. MEXICAN BEAN BEETLE (Epilachna varivestis) caused severe damage to pole and snap beans as early as mid-June in southern areas. Infestations were higher statewide than for past several years. COWPEA CURCULIO (Chalcodermus aeneus) damage to pole and snap beans and peas was the most severe on record for Cullman and Lee Counties. Other areas also suffered considerable damage. Unusually heavy damage to field pea foliage was caused by the BEAN LEAF BEETLE (Cerotoma trifurcata). In early July a LEAF MINER (Liriomyza gyttoni) appeared in large numbers on the leaves of squash, butterbeans, tomatoes, cucumbers, and cantaloupes. ASPARAGUS BEETLE (Crioceris asparagi) infestations were high in localized areas. STRIPED BLISTER BEETLES (Epicauta sp.) caused considerable damage to tomato plants Lee, Clay, and Shelby Counties during July. PICKLEWORM (Diaphania nitidalis) infestations were light in late June and early July, increasing to severe on cantaloupes and squash during mid-July in Lee and St. Clair Counties. STRIPED TORTOISE BEETLE (Agroiconota bivittata) caused early light damage to sweetpotatoes in Cullman County. Damage to sweetpotatoes by MOTTLED TORTOISE BEETLE (Deloyala guttata) and GOLDEN TORTOISE BEETLE (Metriorhina bicolor) was prevalent in Lee County in October. MARGINED BLISTER BEETLE (Epicauta pestifera) caused light damage to tomatoes. YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) caused light damage to tomatoes in the southern part of the State during late July and August and light damage to sweetpotatoes in Geneva County during August. SPIDER MITES were severe on several truck crops in localized areas especially in Lee County on pole lima beans. LEAF-FOOTED BUG (Leptoglossus phyllopus) was common on okra in Lee County during late October. TURNIP APHID (Rhopalosiphum pseudobrassicae) and YELLOW-MARGINED LEAF BEETLE (Microtheca ochroloma) caused light to moderate damage to turnips during November.

Cotton Insects: Cotton insects in general were not as abundant in 1957 as they were in 1956. Farmers treated 585,967 acres or 57 percent of the total acreage planted in the State for insect control. BOLL WEEVIL (Anthonomus grandis) infestations were high during early part of growing season. However, by mid and late season infestations were below those for corresponding periods of 1956. Damage was general and it is estimated that the loss was \$12,000,000.

BOLLWORMS (Heliothis spp.) were of importance in some areas. For the first time on record CABBAGE LOOPER (Trichoplusia ni) was of major importance for its defoliation of cotton in the central and southeast areas. SPIDER MITES and THRIPS were of minor importance but caused some damage. There was a general buildup of COTTON APHID (Aphis gossypii) over the State. Infestations in general were higher than since 1954. It is estimated that \$23,900,000 were saved through control of cotton insects during 1957.

Forest Insects: A cooperative survey with the Southern Forest Experiment Station revealed a moderately severe infestation of SOUTHERN PINE BEETLE in Tallapoosa County. Areas of pine up to 3 acres were killed. U. S. Forest Service personnel reported southern pine beetle conditions in Alabama National Forests were static in 1957, as compared to previous years, which is believed to be due to a combination of intensive control measures and near normal rainfall for the period. PINE WEEVILS (Pachylobius picivorus and Hylobius pales) caused some loss of seedlings in newly established pine plantations planted too soon following clear-cutting operations. In one area in Baldwin County, about 50 percent of the stand was destroyed. Light to moderate infestations of PINE TIP MOTH (Rhyacionia frustrana) were reported from a large part of the State. Ips calligraphus, Ips grandicollis and Ips avulsus were present in moderate numbers in Lee County. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) was moderate in cut timbers in Lee County. AMBROSIA BEETLES (Platypus spp.) were fairly common in the bark of stumps in east central Alabama. ELM LEAF BEETLE (Galerucella xanthomelaena) caused unusually heavy damage to elm trees in localized areas. Heavy populations of CATALPA SPHINX (Ceratonia catalpae) larvae were noted in Butler County. Most were parasitized. WHITEFLIES were numerous on gardenia and privet in Lee County. COTTONY-CUSHION SCALE (Icerya purchasi) and A WAX SCALE (Ceroplastes ceriferus) were not as numerous in the fall of 1957 as usual. Heavy infestations of a MEALYBUG on magnolia leaves were reported in mid-October from Lee County. A KERMES SCALE (Kermes galliformis) and AN OAK LECANIUM (Lecanium quercifex) were unusually light on water oak in Lee County. SPIREA APHID (Aphis spiracecola) caused severe damage to new shoots of spirea in Lee County. A WOOLLY PINE SCALE (Pseudophilippia quaintancii), PINE TORTOISE SCALE (Toumeyella numismaticum) and A PINE PITCH MIDGE (Retinodiplosis resinicola) were not as abundant as in previous years. COTTONY-MAPLE SCALE (Pulvinaria innumerabilis) caused slight damage to mimosas in Henry County.

Stored-Product Insects: RICE WEEVIL (Sitophilus oryza) caused light damage to early maturing corn in Wilcox and Baldwin Counties, and will cause an estimated \$4,200,000 damage to stored grain. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was found in very large numbers in stored grain during early November. It is estimated that the damage will exceed \$1,900,000. Other stored grain insects of lesser importance include DARK MEALWORM (Tenebrio obscurus), YELLOW MEALWORM (Tenebrio molitor) CADELLE (Tenebroides mauritanicus), RED FLOUR BEETLE (Tribolium castaneum), SQUARE-NECKED GRAIN BEETLE (Cathartus quadricollis) and HIDE BEETLE (Dermestes maculatus). CIGARETTE BEETLE (Lasioderma serricorne) and INDIAN-MEAL MOTH (Plodia interpunctella) were also found damaging stored grain.

Insects Affecting Man or Animal: Infestations of SCREW-WORM (Callitroga hominivorax) were heavier in 1957 than since 1950. Reports were as early as June 25 from Houston County. Infestations gradually spread over the entire State and damage continued until late October and November. Farmers treated 204,000 animals and it is estimated that \$351,180 was lost from attacks of this insect. HORN FLY (Siphona irritans), COMMON CATTLE GRUB (Hypoderma lineatum) and CATTLE BITING LOUSE (Bovicola bovis) were moderate to severe on cattle. It is estimated that 847,000 cattle were treated for control of these insects. HORSE FLIES were noted in moderate numbers on cattle throughout the Black Belt area during late summer and early fall. CAT FLEA (Ctenocephalides felis) and DOG FLEA (Ctenocephalides canis) were abundant in central Alabama during late summer. BROWN DOG TICK (Rhipicephalus sanguineus) was present in large numbers during August and September in Lee and surrounding counties. EARWIGS were annoying in homes in Montgomery County.

Miscellaneous Insects: A CHINCH BUG (Blissus leucopterus insularis) caused extensive damage to lawns of St. Augustine grass in southern and central Alabama throughout the summer. BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus) was found in dwelling houses in Elmore County. GERMAN COCKROACH (Blattella germanica) control presented problems in several areas of the State. IMPORTED FIRE ANT (Solenopsis saevissima richteri) caused considerable trouble to pasture crops in the Black Belt section. Positive identifications have been made in 44 counties.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

COMMON CRANE FLY (Tipula oleracea L.)

Economic Importance: The larvae of this tipulid attack many agricultural crops. Cereals and crucifers have been heavily damaged in many areas of Europe. The pest is especially serious in southern Europe and in years of severe outbreaks in Italy, it may destroy entire seedbeds of rice, necessitating resowing. In Scotland, as much as two-thirds of the cereal crops may be lost. Estimates in Germany show that a larval population of 42 per square yard will cause serious injury to crops in arable land, but in grassland, twice that number can be supported. During years of mass increase, several times as many are usually present. Tipula oleracea, which is predominantly a Southern European species, is one of several economically important crane flies occurring in Europe. Larvae of a European Tipula have been taken several times near St. Johns, Newfoundland, Canada. Larvae of Tipula sp. have also been intercepted in soil or on plant roots at U. S. ports of entry on occasions.



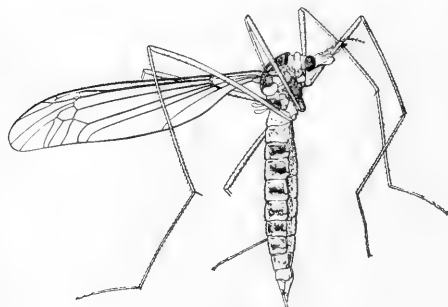
Damage to Small Grain
by Tipula Larvae

Distribution: Occurs generally throughout southern and central Europe, including the British Isles and the Mediterranean region. There have been several records of the species occurring in North Africa.

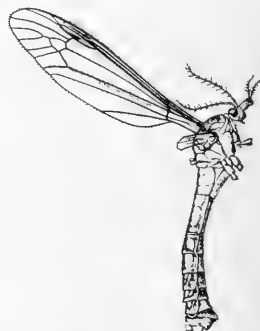
Hosts: Larvae attack crucifers, cereals and other grasses, legumes, potatoes, beets, strawberries, raspberries and various ornamentals.

Life History and Habits: Generally the adults can be found from July to late September and the larvae from the second half of August to mid-July of the following year. There are two generations a year where climate permits. Under these conditions, there is a brood of adults in May-June and another in August-September. Females normally lay about 750 eggs, but may lay up to 1,300 eggs under favorable conditions. The oviposition period lasts for approximately 10-20 days. Larvae hatch in about 14 days and normally remain active for 9-12 months before pupation, but the larval period may last up to 15 months if development is slow. Feeding occurs throughout the stage, taking place at anytime of the day underground, and above ground at night, especially when conditions are humid. The young larvae prefer green leaves of young plants to the roots. Overwintering larvae remain near the surface of the soil (6 to 8 inches) and migrate deeper only when the soil dries in the spring. Pupation takes place from mid-July to September in soil at a depth of about 2 inches. When there is only one generation, pupation lasts for 10 to 25 days.

Description: Adult male is generally silvery or dusty-gray. Eyes black, proboscis brownish; antennae 13-jointed, dark, at least first three segments testaceous; palpi brown. Thorax brownish with four pale indistinct brown stripes; metathorax and pectus grayish-white; halteres brown, blackish at ends. Abdomen slaty-gray, testaceous near tip which is upturned. Wings gray-brown, clear, wing streak whitish and rather distinct. Legs brownish; femora and tibiae darker at tips; tarsi black. Female similar to male, wings larger, longer than abdomen which is tawny at tip. Length 15 to 23 mm. Egg black, shining, reticulate, elongate-oval in shape, somewhat asymmetrical. Size 1 x 0.3 mm. Larva uniform earthy gray; shape rather conical towards head and rounded posteriorly; head black; antennae prominent; mandibles conspicuous. Length 40 mm. when fully extended. Pupa pale at transformation, darkening to blackish-brown. There is a yellow marginal streak extending along thoracic and abdominal segments and also double line of light gray crossing the segments dorso-ventrally. Abdominal spines situated on posterior margin of each segment, those at dorsal surface being smaller; caudal end spiny and pointed. Length 20-25 mm. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8 (9) 2-28-58



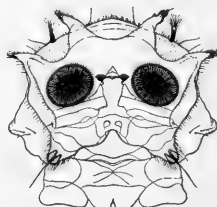
Female



Male



Larva



Posterior Extremity
of Larva

Adults and Larvae of Tipula oleracea





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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BEEF LEAFHOPPER host plants unusually numerous in desert area of California. (p. 166).

Lower number of ASPARAGUS BEETLES in hibernation in New Jersey than last year. (p. 166).

TOMATO PSYLLID damaging tomatoes in San Diego County, California. (p. 167):

VEGETABLE WEEVIL light to moderate on tobacco plant beds in Georgia. (p. 167).

Distribution of BIRCH LEAF MINER in the United States. (p. 182).

SUMMARY OF INSECT CONDITIONS - 1957 - Florida (p. 170), Oklahoma (p. 173), Mississippi (p. 178), Arizona (p. 179).

CORRECTION (p. 169).

Reports in this issue are for the week ending February 28 unless otherwise designated.

WEATHER BUREAU 30-DAY OUTLOOK

MARCH 1958

The Weather Bureau's 30-day outlook for March calls for temperatures to average below seasonal normals over the southern half of the nation except for near normal over the South Atlantic States and above normal along the California coast. Temperatures are expected to average above seasonal normals in the Northeast and over the Great Lake Region, and also in the Pacific Northwest. In areas not specified, near normal temperature averages are indicated. Precipitation is expected to exceed normal over the eastern half of the nation and in the Northern Plains. Subnormal amounts are predicted for the southwest quarter of the country and the North Pacific coast. In the remaining area about 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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING MARCH 3

Sharp temperature changes, widespread precipitation with heavy rain and snow, glaze, high winds, tornadoes, and floods highlighted the week's weather. A storm moved out of the Northwest on February 25, crossed the central Great Plains to the Ohio Valley and Great Lakes region on the 26th and 27th and remained there with decreasing intensity during the remainder of the week. The storm produced general precipitation in the Far West, with heavy rains in parts of the Pacific States. In northern California, rains up to 5 inches produced flooding in the Russian River, and on the Sacramento side of the Coast Range where rains totaled 8 inches or more, streams were unusually high. Up to 5 feet of new snow was reported from some mountain areas of Utah. As the storm crossed the Great Plains many stations in Kansas and Oklahoma recorded their lowest pressure on record. Snowfall ranging from 3 inches in northern Oklahoma up to 17 inches at Pierre, South Dakota, was preceded by a belt of glaze in Nebraska and South Dakota. Winds up to 50 m.p.h. or more caused heavy drifting, and roads were blocked in many sections of Kansas, Nebraska, and South Dakota. Blizzard conditions continued in South Dakota through March 2. On the night of Wednesday, February 26, 4 tornadoes occurring in Mississippi caused 13 deaths, 80 injuries, and although no large towns were hit, property damage was believed to be near \$1 million. Another storm area moved up the middle and north Atlantic Coast on the 26th, 27th, and 28th producing moderate to heavy rains in middle and south Atlantic Coastal States and heavy rain and snow in New England. One to 2 inches of rain plus snowmelt caused some flooding in southeastern New England, and high tides produced by 50 m.p.h. winds occurred along the southwest Connecticut coast where 500 people were evacuated. Four to 8 inches of new snow fell in northern New England.

Temperatures dropped sharply in the Far West on the 26th, the first cold snap there in February, and frost and freezing occurred in nearly all sections of Washington and Oregon on the 28th. Temperatures for the week averaged below normal in the southwestern third of the country by as much as 6°, and above normal elsewhere with departures ranging up to 18° or more in the upper Mississippi Valley. In the Southeast, this was the first mild week this year. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - CALIFORNIA - Survey conducted on predator activity in egg beds, Contra Costa County. Eggs have not coagulated. No meloid predators were present. (Cal. Coop. Rept.).

GREENBUG (*Toxoptera graminum*) - OKLAHOMA - A general, light infestation in small grains continues in Hennessey area. Light to medium numbers in a few fields. (Wood). None found in several fields examined, Alfalfa and Major Counties. Scattered colonies average 0-90 per linear foot of row in barley, southern Garfield County. (Coppock).

AN APHID (*Rhopalosiphum subterranean*) - OKLAHOMA - Light numbers in small grains in Hennessey area, Kingfisher County. (Wood).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Light infestation in alfalfa at Malaga, Eddy County. (N. Mex. Coop. Rept.). OKLAHOMA - Populations unchanged in Stillwater area. (Bieberdorf). Only an occasional aphid per alfalfa crown in several fields examined, Garfield County. None found in a few fields. (Coppock).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - NEBRASKA - Average 1 per linear foot of wheat, Box Butte County, 0.5 per linear foot in Garden and Deuel Counties. (Pruess). OKLAHOMA - Light infestations of early instar larvae in 2 of several fields examined averaged 0.3 and 0.5 per square yard, eastern Major County. None were found in small grains in Garfield and Alfalfa Counties. (Coppock).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Light populations in barley, average 0-20 per linear foot in southern Garfield County. (Coppock).

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - CALIFORNIA - Now occurring in coastal areas and a heavy infestation is damaging alfalfa in Camerillo area, Ventura County. (Cal. Coop. Rept.).

ALFALFA WEEVIL (*Hypera postica*) - IDAHO - Overwintering adults becoming active in Dietrich Butte area, Lincoln County. (Portman, Manning).

VIRGINIA - Some eggs present in alfalfa stems at this time. Too early to determine percent of viable eggs. (Morris).

PALE WESTERN CUTWORM (*Agrotis orthogonia*) - NEBRASKA - Eggs hatching in Box Butte County. Population extremely light, averaging 1 per 6 linear feet in wheat. All first or second-instar larvae. (Pruess).

LYGUS BUGS - UTAH - Active in warmer areas of Washington County. (Knowlton).

FRUIT INSECTS

CLOVER MITE (*Bryobia praetiosa* complex) - NEW MEXICO - Eggs on apple trees in many orchards in San Juan, Sandoval, Rio Arriba, Santa Fe, Valencia and Bernalillo Counties. (N. Mex. Coop. Rept.).

GREEN PEACH APHID (*Myzus persicae*) - NEW MEXICO - Eggs on fruit trees, Valencia County. (N. Mex. Coop. Rept.).

OYSTERSHELL SCALE (*Lepidosaphes ulmi*) - CALIFORNIA - Heavy populations on walnut, San Luis Obispo County. (Cal. Coop. Rept.).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - NEW MEXICO - Light to moderate infestations on apple trees at Velarde, Rio Arriba County, and Bernalillo,

Sandoval County. (N. Mex. Coop. Rept.).

TREEHOPPERS - NEW MEXICO - Heavy oviposition injury on apple trees at High Rolls, Otero County, and Hondo, Lincoln County. (N. Mex. Coop. Rept.).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - FLORIDA - No new finds in the State since November 26, 1957, making 87 "fly-free" days. (February 21, Bittner).

TRUCK CROP INSECTS

BEET LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Survey and check continued in Imperial Valley. Control operations mostly completed with ground spraying of 1,900 acres of desert area and aerial spraying of 19,800 acres. Unusual amounts of rain have produced more succulent host plants. A higher population now exists in the desert area than in many years. (Cal. Coop. Rept.).

ASPARAGUS BEETLES (*Crioceris* spp.) - NEW JERSEY - Survey of the number of hibernating beetles collected in 1957-58 shows a large reduction in numbers from 1956-57. In 1956-57 a total of 2,399 *C. asparagi* were taken from 46 fields averaging 52.2 beetles per field. In 1957-58 only 183 were taken from 45 fields for an average of 4.1 beetles per field. There was a like reduction in numbers of *C. duodecimpunctata*. Of these 45 fields, all but 7 were identical locations. (Ins.-Dis. Newsltr.).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Medium infestation on lettuce in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

CABBAGE APHID (*Brevicoryne brassicae*) - GEORGIA - Infestations light-moderate on cabbage in Colquitt, Thomas and Lowndes Counties, moderate on collards, Cook County. (Johnson).

CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Damaging in Capistrano area, San Diego County. Rain has prevented insecticide application. (Cal. Coop. Rept.).

TOMATO RUSSET MITE (*Vasates lycopersici*) - CALIFORNIA - Medium infestations on night shade in Lomita area, Los Angeles County. Night shade acts as reservoir of the mite in tomato growing areas. (Cal. Coop. Rept.).

FALSE CHINCH BUGS - CALIFORNIA - *Nysius* sp. heavy on lettuce in Holtville area, Imperial County. (Cal. Coop. Rept.).

GREEN PEACH APHID (*Myzus persicae*) - CALIFORNIA - Damaging spinach in Capistrano area, San Diego County. (Cal. Coop. Rept.).

IMPORTED CABBAGEWORM (*Pieris rapae*) - GEORGIA - Light infestations on cabbage, Colquitt and Lowndes Counties. (Johnson).

SEED-CORN MAGGOT (*Hylemya ciliocrura*) - OKLAHOMA - Adults moderately active at Bixby, Tulsa County. (Walton, Galeotti).

STRAWBERRY CROWN MOTH (*Ramosia bibionipennis*) - CALIFORNIA - Light infestation damaging strawberries in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

SUGAR-BEET WIREWORM (*Limonius californicus*) - CALIFORNIA - Severely damaging small onion crops in La Puente area, Los Angeles County, with as

8 wireworms in one onion. (Cal. Coop. Rept.).

TOMATO PSYLLID (Paratrioza cockerelli) - CALIFORNIA - Medium infestation damaging tomato crops in Otay area, San Diego County. (Cal. Coop. Rept.).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - CALIFORNIA - Causing considerable damage in large plantings of turnips in Norwalk area, Los Angeles County. (Cal. Coop. Rept.).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Light infestations on tobacco plant beds in Thomas, Lowndes, Ware and Tattnall Counties. (Johnson).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light to moderate infestations on tobacco plant beds, Tift, Cook, Colquitt, Thomas, Lowndes, Ware, Pierce, Wayne and Tattnall Counties. (Johnson).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Inspection of 2 lint cleaners and 1 gin stand recovered 4 larvae in Tillman County and none in Bryan County. (Fed.-State PBW Comm.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

GYPSY MOTH (Porthetria dispar) - CONNECTICUT - Scouting indicates about 10,000 acres of woodland in southeastern Litchfield and northeastern New Haven Counties moderately infested and some defoliation may be expected. This indicates a sharp decrease from 1956, when some 55,000 acres were sprayed. (Turner).

PINE WEBWORM (Tetralopha robustella) - GEORGIA - Severely infested 75 percent of 20-acre planting of slash pine, Pierce County. (February 17, Lund).

ROSE APHID (Macrosiphum rosae) - NEW MEXICO - Infesting roses in northern part of State. (N. Mex. Coop. Rept.). OREGON - Light to heavy populations actively feeding on rose foliage during February. Damage evident in Umatilla, Washington and Benton Counties. (Capizzi).

WALNUT SCALE (Aspidiotus juglans-regiae) - CALIFORNIA - Populations heavy on Lombardy poplar in La Mesa area, San Diego County. (Cal. Coop. Rept.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - FLORIDA - Eggs and larvae on rosaceous trees at Gainesville, Alachua County. Eggs were hatching locally on February 24, which is 3-4 weeks later than hatching dates in this area for past 11 years. (Hetrick).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - NORTH CAROLINA - Larvae mining American boxwood locally, Guilford County. (Scott, Farrier).

TULIP BULB APHID (Anuraphis tulipae) - NORTH CAROLINA - Numerous on a group of imported tulip bulbs at a location in Surry County on January 21. (February 7, Green, Smith).

INSECTS AFFECTING MAN AND ANIMALS

A COCKROACH (Periplaneta fuliginosa) - GEORGIA - Infested a home in DeKalb County. Det. H.G.Scott. (CDC Ent. Mus.).

CATTLE GRUBS (Hypoderma spp.) - NEW MEXICO - Adults attacking cattle near watering troughs, Sierra County. (N. Mex. Coop. Rept.). OKLAHOMA - Counts at Ft. Reno averaged 2 per animal in 29 yearling heifers, 1.4 in 21 two-year old cows and 2.4 in 18 head of 3-year old cows, February 21. (Allison). Counts on yearling steers averaged approximately 1 per animal in Harper County, February 28. (Howell). UTAH - Very abundant in Washington County (Hughes, Knowlton). Heavy in Kane County. (Rose, Knowlton). NORTH CAROLINA - None found in 12 dairy cows examined, Montgomery County. (Jones). Averaged 10-50 per calf of 60 Angus and Hereford calves examined February 7, Ashe County. (Gardner). VIRGINIA - During last half of January 67 percent of all grubs collected were H. lineatum and 23 percent H. bovis, and in last half of February 88 percent were H. bovis and 12 percent were H. lineatum, in Augusta County. (Turner).

CATTLE LICE - NEW MEXICO - Moderate infestation on stock in feeding pens, Socorro County, probably Bovicola bovis. One light infestation on range cattle, Sierra County. (N. Mex. Coop. Rept.). UTAH - Numbers numerous to average, Washington, Kane, Sevier and Sanpete Counties. (Knowlton).

SHEEP BOT FLY (Oestrus ovis) - NEW MEXICO - Larvae now in third instar. (N. Mex. Coop. Rept.).

SHEEP SCAB MITE (Psoroptes equi v. ovis) - VIRGINIA - Found on 163 of 1,484 sheep inspected during January. This 163 head were dipped. (Morris).

WINTER TICK (Dermacentor albipictus) - NEW MEXICO - Moderate infestation on cattle, McKinley County. (N. Mex. Coop. Rept.).

STORED-PRODUCT INSECTS

YELLOW MEALWORM (Tenebrio molitor) - OKLAHOMA - Heavy infestation in one granary of stored wheat, eastern Major County. (Coppock).

BENEFICIAL INSECTS

LADY BEETLES - IDAHO - Large numbers leaving hibernation quarters along lower Clearwater drainage area and other parts of Latah and Nez Perce Counties. (Gittins, Barr).

MISCELLANEOUS INSECTS

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Troublesome in homes at Kanab, Kane County. Also causing some annoyance in other counties. (Knowlton).

A COLYDIID (Aglenus brunneus) - CALIFORNIA - A medium infestation in chicken feed debris reported in the Anaheim area of Orange County. This species is not commonly found in California. (Cal. Coop. Rept.).

CLOVER MITE (Bryobia praetiosa complex) - NEW MEXICO - Invading homes throughout the State. (N. Mex. Coop. Rept.). UTAH - Causing annoyance in

several areas of the State. (Knowlton). IDAHO - Active in and around dwelling in Moscow area, Latah County. (Manis).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - NORTH CAROLINA - Alate forms emerging in a home, Mecklenburg County. (Jones, Wright).

PAVEMENT ANT (Tetramorium caespitum) - GEORGIA - Large numbers invading homes, DeKalb and Fulton Counties. Det. H.G. SCOTT. (CDC Ent. Mus.).

CORRECTION: In CEIR 8(8):140 under Pakistan change Hispa armigera to read Diçladispa armigera.

LIGHT TRAP COLLECTIONS

	<u>Pseudaletia</u> <u>unipuncta</u>	<u>Agrotis</u> <u>ypsilon</u>	<u>Feltia</u> <u>subterranea</u>	<u>Prodenia</u> <u>ornith.</u>
FLORIDA				
Monticello 2/19-25	5	3	5	
Quincy 2/19-25		3	5	2
LOUISIANA				
Baton Rouge 2/21-27	5	7	3	1
Franklin 2/9-25	6	1		

SUMMARY OF INSECT CONDITIONS - 1957

FLORIDA

Prepared by J. C. Denmark

Highlights: POTATO TUBERWORM (Gnorimoschema operculella) caused severe damage to a shipment of out-of-State potatoes at Jacksonville. AMERICAN GRASSHOPPER (Schistocerca americana) was reported causing damage to citrus plantings in several isolated locations over the State and some bahia grass pastures. FRUIT SCARRINGWORMS (Platynota spp.) were on citrus in southern and central parts of the State, January through September. Larvae fed on small green fruit, causing fruit to drop prematurely. Chemical controls were applied but very little control was achieved. Generally, FOREST INSECT activity in the northern portion of Florida seems to be at a minimum. ASIATIC RED SCALE (Aonidiella taxus) has spread to five additional counties from the original two counties in which the scale was discovered in 1955. This scale has been found only on Podocarpus and Taxus spp. Applications of scalicides normally found effective have drastically reduced the scale population, but has not eliminated this scale from infested nurseries. In an effort to eliminate or prevent the further spread of this scale, research has been instigated and nurseries have been quarantined. ROYAL PALM BUG (Xylastodoris luteolus) was reported causing damage to Royal Palms in the southern section of the State. This is the first severe outbreak of this insect since 1921. CATTLE FEVER TICK (Boophilus microplus) was discovered on a ranch in the southern part of Okeechobee County, April 23. Ticks have been found on three more ranches in that county and on one ranch in Dade County. Cattle and horses in the infested area were dipped in a tickicide at regular intervals. The last outbreak was in Okeechobee County in 1945. YELLOW FEVER MOSQUITO (Aedes aegypti) in larval stage was reported from Key West, Monroe County. This is the first discovery of this species from this area since November 1943. IMPORTED FIRE ANT (Solenopsis saevissima richteri)- At the end of 1957 the imported fire ant has been found infesting nineteen counties. Three of the nineteen counties had only single infestations that have been treated. Numerous nurseries in the quarantined area and out of the quarantined area have treated their premises to prevent being quarantined. KHAPRA BEETLE (Trogoderma granarium) inspections were made of the larger feed and seed stores in Florida and no beetles were found. An ERINOSE MITE (Aceria litchii) was found infesting six lychee trees at Nokomis, Sarasota County. A survey has been instigated to determine the distribution of this mite and eradication measures will be taken. SOYBEAN CYST NEMATODE (Heterodera glycines) has not been found on the root samples taken of suspected host plants. BURROWING NEMATODE (Radopholus similis) - All citrus nurseries have been sampled and infested rootstock has been treated by the hot water method prior to movement. Ornamental nurseries shipping plants into citrus producing areas have been checked for the presence of burrowing nematode and are restricted to ship only plants that are free of the burrowing nematode. Push-and-treat program, on an area clean-up basis, is still in operation in commercial groves that are infested with burrowing nematode.

Cereal and Forage Insects: A CHINCH BUG (Blissus leucopterus insularis) was a problem on St. Augustine grass in coastal and central sections of the State. Severe damage was believed to be aided by lack of adequate rainfall during the past three years. However, rainfall was abundant in 1957 and populations persisted with severe damage noted. Resistance to controls applied in north central section of the state in February resulted in changing formulations and increasing dosages. This insect was the most expensive to control in 1957, placing it first on the list of the ten most important insects or mites. The estimated loss of St. Augustine grass by this pest was \$23,500,000, which is estimated to be a little over half the combined

losses of citrus and vegetable crops. CORN EARWORM (Heliothis zea) occurred on corn in February in southern sections and again in September on the fall crop. In several instances corn acreage was reduced due to difficulty in control. Estimated crop loss was valued at \$1,200,000. Mild winter and abundant rain favored GRASSLOOPERS (Mocis spp.). Infestations were spotted, especially on well kept pastures. Chemical controls were difficult due to the excessive rain and danger of insecticidal residue. A TROPICAL WEBWORM (Pachyzancla phaeopteralis), FALL ARMYWORM (Laphygma furgiperda) and BLUEGRASS WEBWORM (Crambus teterrellus) damaged ornamental lawns. RHODESGRASS SCALE (Antonina graminis) infestations on Bermuda grass and St. Augustine grass were light, but the number of reports increased. Spotted infestations were reported on golf courses. YELLOW SUGARCANE APHID (Sipha flava) was abundant on pastures due to excellent new growth stimulated by the rainy weather. Very little chemical controls were applied. Sugarcane was heavily infested in the Okeechobee area. No controls were used as harvesting operations had already started. A BILLBUG (Calendra venatus vestita) caused damage to zoysia grass lawns wherever grown. As many as 57 larvae were found per square foot of sod.

Fruit Insects: CITRUS RUST MITE (Phyllocoptruta oleivora) occurred in the citrus belt almost twelve months in the year with a heavy population reaching a peak in July and gradually decreasing by September. Estimated loss to the citrus crop was approximately \$6,000,000. FLORIDA RED SCALE (Chrysomphalus aonidum) and PURPLE SCALE (Lepidosaphes beckii) infested citrus almost twelve months in the year. Purple scale increased gradually from January to November. Florida red scale reached a peak in July and gradually declined in the following months to the expected low. The estimated losses were approximately \$18,000,000.00. CITRUS RED MITE (Panonychus citri) infested citrus in early spring, reaching a peak in June with a gradual decline well below the average of preceding year, but caused an estimated loss of \$12,000,000. GULF WIREWORM (Conoderus amplicollis) infested strawberries at Plant City, Hillsborough County. Large numbers of larvae were present in the fruit, resulting in loss of crop value, and chemical controls were necessary in order to maintain quality. A LEAFHOPPER (Homalodisca triquetra) was present in outbreak numbers during late April on citrus at Largo, Pinellas County. FALL WEBWORM (Hyphantria cunea) severely defoliated pecan trees in the northern and western sections of the State. This insect appeared earlier than in previous years. BLACK PECAN APHID (Melanocallis caryaefoliae), a YELLOW HICKORY APHID (Monellia sp.) and PECAN NUT CASEBEARER (Acrobasis caryae) infested pecan trees in the northern section of the State. Moderate to light damage, due to the light crop, was caused by the pecan nut casebearer. The yellow hickory aphid was reported infesting pecan in the northwestern section of the State.

Truck Crop Insects: SOUTHERN ARMYWORM (Prodenia eridania) and SERPENTINE LEAF MINER (Liriomyza sp.) were reported infesting tomatoes wherever this crop was grown. Wherever chemical controls were used judiciously, leaf miners and armyworms were not a serious problem. The estimated loss of crop value due to the southern armyworm was \$76,000.00, and \$127,000.00 loss due to the serpentine leaf miner. BEAN LEAF ROLLER (Urbanus proteus) and POTATO LEAFHOPPER (Empoasca fabae) were reported from southern and central parts of the State. Bean leaf roller infestations on snap beans in southwestern coastal counties were very persistent throughout the growing season. Leafhoppers were more severe in the southwestern section than last year. Estimated crop losses were \$2,700,000. MELON APHID (Aphis gossypii) and SERPENTINE LEAF MINER infested watermelon in the Immokalee area in February and March. Southern sections reported troublesome infestations, but north central sections were not troubled as much as last year. Crop loss was \$2,100,000. GREEN PEACH APHID (Myzus persicae), SERPENTINE LEAF MINER and SOUTHERN ARMYWORM infested potatoes in the spring and early summer along the southeast coast. Heavy infestations of leaf miners and aphids were reported in Dade County, while very little trouble

was experienced in the north central section. Estimated crop loss was \$1,400,000. MELON APHID, SERPENTINE LEAF MINER, MELONWORM (*Diaphania hyalinata*) and PICKLEWORM (*D. nitidalis*) were reported on cucumbers in the southern part of the State in February and March, with scattered high infestations from each of these pests. A combined spray program gave fairly good control to all except the cotton aphid. These insects did an estimated \$220,000 damage. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) heavily infested eggplant in the Plant City area. Also infested tomatoes and potatoes in Polk and Alachua Counties. A SLUG (*Veronicella floridana*) was reported causing damage to beans and tomatoes in the Homestead area. Five thousand acres surveyed to determine damage were not totally infested, but areas in some fields were replanted due to the feeding of this pest. CABBAGE LOOPER (*Trichoplusia ni*) was more abundant in January in the Sanford area than in the past four years due to warm weather during December 1956.

Tobacco Insects: STINK BUGS (*Euschistus* spp.) were not as severe on tobacco as in 1956. Wilting caused by the feeding of these insects was not as severe in 1957 due to sufficient soil moisture. GREEN PEACH APHID (*Myzus persicae*) infested tobacco in Alachua and Bradford Counties, but is no longer a serious problem with the new chemical control.

Forest, Ornamental & Shade Tree Insects: An aerial survey in May indicated only a light BARK BEETLE incidence throughout the northern area. Ground checks indicate that the ips engraver beetle was the chief cause of mortality, being present two or three times more often than the black turpentine beetle. Ground checks also revealed a rather high incidence of green trees under beetle attack, and in this case the black turpentine beetle was the chief offender. Survey findings in October indicated a very light incidence of BARK BEETLE activity in this area. PINE SAWFLIES (*Neodiprion lecontei*, *N. exitans*, *N. abbotii* and *N. nanulus*) damaged *Pinus* spp. in north and northwestern sections of the State. *N. lecontei* was reported in March through December with damage severe on several spotted infestations. In Suwannee County 30 acres codominant and intermediate size loblolly pine trees were completely defoliated by *N. exitans* by November 11. Evidence of attack was found on 3,000 acres in Okaloosa County, ranging from light on the fringes to moderate and heavy in the central portion. COCONUT SCALE (*Aspidiotus destructor*) was present on a wide range of host plants, including coconut palms, but it did not develop to epidemic proportions as in 1956. An OLEANDER CATERPILLAR (*Syntomeida epilais jucundissima*) was reported infesting oleander and a wide range of ornamental plants. YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) was reported in large numbers on foliage plants, annuals and gladiolus, being reported in southern sections in February and moving northward as late as October. MELON APHID (*Aphis gossypii*) and BLACK CITRUS APHID (*Toxoptera aurantii*) infested ornamentals, cut flowers and succulent plants. FLORIDA RED SCALE was reported on a wide range of ornamentals and shade trees every month in the year, but was less prevalent than in 1956.

Arthropods Affecting Man and Animals: SCREW-WORM (*Callitroga hominivorax*) infestations were generally more severe than in the past several years. Almost all calves were treated at birth and periodic inspections were necessary. These concerted efforts of the livestock growers to protect their animals resulted in increased production costs. The mild winter probably was a contributing factor. HORN FLY (*Siphona irritans*) was extremely bothersome in the southern and central areas of the State again this year. Controls were applied to livestock during the summer and early fall months. COMMON CATTLE GRUB (*Hypoderma lineatum*) was reported from the southern part of the State in January, February and March. Of herds inspected, up to 95 percent of the animals were infested. Control measures were applied to some dairy cattle in all areas.

SUMMARY OF INSECT CONDITIONS - 1957

OKLAHOMA

Reported by Stanley Coppock, Jr.

Highlights: Heavy migration of Melanoplus bilituratus took place in the northwestern and panhandle counties during the fall. This migration from out-of-state increased the potential grasshopper damage for 1958 from a light to a light-threatening situation in those areas. The FALL ARMYWORM was unusually abundant in 1957 on corn, sorghums, and legumes. Heavy populations of the VARIEGATED CUTWORM were present during late May and early June throughout the State. Damage to legumes was heavy; to small grains light-heavy. SPOTTED ALFALFA APHID numbers in all sections were lower than for any year since the pest was discovered in the State (spring of 1954). The RED-NECKED PEANUTWORM did considerable damage in peanut-growing areas. This is the first year that this insect has been of economic importance in the State. The COTTON LEAFWORM caused extensive defoliation of cotton in all cotton producing areas. A new TERMITE for Oklahoma, a dry-wood species (Kaloterms minor) was collected in Guthrie during August.

Cereal and Forage Insects: GRASSHOPPERS - State-wide populations as a whole were lighter than for some years. Hatching was late in all sections. Range, crop, and marginal populations in all areas except the northwestern and panhandle sections were light - very light and remained so all year. Range populations in the northwest and panhandle generally ran from 2-8 adults per square yard at mid-summer; marginal and roadside numbers in the same area commonly averaged from 5-12 per square yard. The most abundant species in western range areas were Melanopus bilituratus, Phlibostroma quadrimaculatum, Aeloplides turnbulli, Aulocara elliotti, and Syrbula sp. The chief marginal and roadside species were M. differentialis, M. bivittatus, M. packardii, M. bilituratus, and Aeloplides turnbulli. In late October and early November heavy migrations of M. bilituratus took place in the extreme northwestern and panhandle counties. These grasshoppers originated in states north of Oklahoma. At the peak of migration, populations in "resting areas" generally ran 10-20 per square yard compared with summer populations in the same areas of 2-8. This migration of M. bilituratus from out-of-state increased the potential danger for 1958 (as determined by egg census) from a light to a light-threatening situation. Destruction of fall-seeded small grains in the panhandle was heavy, approximating 5-10 percent. FALL ARMYWORM (Laphygma frugiperda) was one of the most important insect problems on sorghum. Because of unusually heavy precipitation early in the season the crop was planted much later than usual. Damage to sorghum whorls was severe in most areas in summer. Late-planted corn became heavily infested in mid-summer also. Some broomcorn in Garvin County showed heavy numbers by late August. In September, the fall armyworm was becoming fairly abundant in the heads of sorghums in the central and eastern areas with up to 4 larvae per head in some fields in Hughes County. Head infestation was light and scattered in the northwest and panhandle counties; Alfalfa County having the heaviest infestation with up to 12 percent of the heads containing larvae. All other counties were lower. Scattered, light populations of the fall armyworm were present in alfalfa during late summer. Small to very small numbers of SPOTTED ALFALFA APHID (Therioaphis maculata) were present during the first 3 months of the year. In early April, an explosive situation occurred in Beckham and Harmon Counties. From 5,000 to 10,000 aphids per square foot of alfalfa crown were common with considerable honeydew present. In areas other than the southwest, the aphid populations remained low, in fact, lower than at any time since the spring of 1954. Extremely heavy rains occurring state-wide in late spring induced heavy mortality in most areas. A light general buildup in numbers occurred during July in the

southern half of the State and was followed by a sharp increase in predators. From late September to the end of the year, only light to very light populations were found. Damage to alfalfa throughout the State was only a small percent of that occurring in 1956. ARMYWORM (*Pseudaletia unipuncta*) damaged heading barley in the southern and southwestern areas during May. Some head clipping and considerable aerial spraying was undertaken in Tillman County. Other small grains and alfalfa were also infested, the heaviest occurring in the southern one-half of the State. By June 15, populations were reduced to a non-economic level. Disease and heavy parasitism were undoubtedly largely responsible for the rapid decline. Populations of the VARIATED CUTWORM (*Peridroma margaritosa*) became heavy in legumes during late May and early June. Counts of 6-8 larvae or more per square foot were common throughout the State; heaviest in the southern and central areas. Scattered light to heavy infestations also occurred in small grains. Chemical control was initiated, especially in the southwest. By June 1, pupation was common. During January, light scattered infestations of the ARMY CUTWORM (*Chorizagrotis auxiliaris*) were found in Custer, Garfield, and Kingfisher Counties. Early in February, 15 of 51 fields examined in 12 western counties contained cutworms. In March, a few fields in Major County averaged 12 larvae per square yard with light to moderate damage. Some chemical control measures were applied in this area. CORN EARWORM (*Heliothis zea*) populations on corn and sorghums were considerably lighter than in 1956. Heavy spring rains undoubtedly slowed an early population build-up. By mid-summer larvae were common, statewide, but populations remained light. Intensive tests conducted during 1957 at 4 State locations by research entomologists placed the reduction in corn yield due to corn earworm feeding at 1.9 percent. SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) infestations were generally light. Overwintering larvae (1957-1958) infested up to 10 percent of the corn plants in the northeastern area. WEBWORMS (*Loxostege* spp.) did considerable damage to alfalfa and soybeans during mid-summer especially in the eastern, southern and central regions. Twenty to 50 larvae per 10 sweeps were common in many fields. Control measures were applied largely in the southwest and northeast. Damage was light in sorghum heads. GREENBUG (*Toxoptera graminum*) populations were of minor importance during 1957; only light scattered infestations. The BROWN WHEAT MITE (*Petrobia latens*) was not a factor in the 1957 wheat crop. Heavy rains in spring of 1957 reduced all stages to an extremely low level. Winter (1957-1958) populations of this mite are lowest in years. Heavy numbers of CHINCH BUG (*Blissus leucopterus*) were noted in isolated fields of sorghum and corn during summer in the northeastern section. Some late-planted fields suffered damage. The 1957 fall survey showed 32 of the State's 77 counties to have a potential rating of severe to very severe. Light-medium populations of ENGLISH GRAIN APHID (*Macrosiphum granarium*) occurred statewide in small grains early in the year. The WINTER GRAIN MITE (*Penthaleus major*) was more abundant on small grains than during the past several years, probably due largely to the greater precipitation in 1957. During both spring and fall scattered populations were present in many fields throughout the State. Isolated light damage occurred in the northeastern and southwestern counties. The CORN LEAF APHID (*Rhopalosiphum maidis*) was present on barley in most sections during the fall, however populations were light. Numbers were light to moderate in sorghum whorls throughout the State. A scattered light infestation of APPLE GRAIN APHID (*Rhopalosiphum fitchii*) was reported, the highest being 0-3000 per linear foot of rye in southwestern Oklahoma. FALSE WIREWORM (*Eleodes* spp.) populations were very light with no economic damage noted. PEA APHID (*Macrosiphum pisi*) built up rapidly during May in most sections followed by a decline to non-economic proportions by late June. East central counties supported the highest populations. The RED-NECKED PEANUTWORM (*Stegasta basqueella*) did considerable damage to peanuts throughout the State. Up to 100 percent of the buds in many fields showed feeding damage. Four or five generations developed. This is the first year that this insect has been of economic importance in the State. Minor damage to broomcorn in August was caused by larvae of an insect tentatively

identified as a weevil (Anacetrinus deplanatus). Adults were found in the stubble fields and larvae in the canes. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) seriously damaged peanuts in the Stratford area; scattered light infestations were reported from other areas. LEAFHOPPERS, especially the six-spotted leafhopper (Macrosteles fascifrons) and (Aceratagalia uhleri) were abundant in legumes, small grains, and grassland throughout the State. Populations were reduced with the onset of summer. A SNOOT BEETLE (Compus auricephalus) did considerable local damage to seedling corn in the Pauls Valley area. The BLACK CUTWORM (Agrotis ypsilon) was numerous in seedling corn in Nowata County. TARNISHED PLANT BUG (Lygus lineolaris) was more abundant than usual throughout the State on legumes; 10-40 nymphs and adults per 10 sweeps were common. Populations of LEAFHOPPERS (Empoasca spp.) occurred statewide and were more abundant than usual. Numbers persisted until fall. Ten to 40 per 10 sweeps were typical in alfalfa. GREEN CATERPILLAR (Plathypena scabra) was plentiful on alfalfa throughout the growing season. Light populations of EUROPEAN CORN BORER (Pyrausta nubilalis) were reported in corn in Nowata, Ottawa, Muskogee, and Payne Counties and from one field of peppers in Muskogee County.

Fruit Insects: PECAN NUT CASEBEARER (Acrobasis caryae) damage in 1957 was only a small percent of the 1956 loss. Egg-laying was exceptionally late (June 10 in central and southern areas). Damage to nut clusters by mid-summer generally ran 3-7 percent in east central areas, up to 9 percent in Stillwater area. The WALNUT CATERPILLAR (Datana integerrima) caused general light damage to walnut and pecan foliage, severe defoliation in local areas. Severe damage to native plums by the EASTERN TENT CATERPILLAR (Malacosoma americanum) occurred in April in Major and Beckham Counties. Two species of SCARAB BEETLES (Cotinus nitida and Euphoria sp.) damaged ripe cherries in the Stillwater area. PEACH TREE BORER (Sanninoidea exitiosa) did considerable damage to peach trees in Pontotoc County. In the Stillwater area the damage was normal to slightly above normal. Scattered damage to apple trees by the FLATHEADED APPLE TREE BORER (Chrysobothris femorata) was noted during the spring in central counties. Drought-weakened trees were frequently attacked and killed. The SHOT-HOLE BORER (Scolytus rugulosus) was common in peach and apple trees in Pontotoc County during April. The most severe damage occurred in trees weakened by drought. PECAN WEEVIL (Curculio caryae) infestations were negligible.

Truck Crop Insects: SEED-CORN MAGGOT (Hylemya cilicrura) caused heavy damage to sweet corn and beans in Marshall County during April. Fall populations on spinach foliage in Bixby area average from 12-20 larvae per 100 plants. Populations of GREEN PEACH APHID (Myzus persicae) on commercial spinach in the Bixby area were unusually low. The MELON APHID (Aphis gossypii) did severe damage to 500 acres of watermelons in Jefferson County. Some other heavy infestations were also reported from additional counties. SQUASH BUG (Anasa tristis) damage was abnormally low. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) caused moderate damage to a few fields of potatoes in Muskogee County. Limited scattered damage in tomatoes was caused by HORNWORMS (Protoparce sp.). CORN EARWORM (Heliothis zea) populations in sweet corn were widespread, however, damage was lighter than usual. Local heavy damage to tomatoes occurred in Pushmataha County. SOUTHERN BEET WEBWORM (Pachyzancla bipunctalis) - A heavy infestation in 70 acres of spinach in Haskell County rendered it unmarketable. The TOMATO RUSSET MITE (Vasates lycopersici) caused considerable damage to greenhouse tomatoes in the Stillwater area during spring. A TORTOISE BEETLE (Metricona sp.) averaged 2-3 adults per sweetpotato plant in the Bixby area during June.

Cotton Insects: The COTTON LEAFWORM (Alabama argillacea) was one of the most troublesome pests of cotton during 1957. Activity began unusually late, about the end of July in the southern and southwestern areas. By mid- and late August heavy infestations occurred in all cotton-producing areas. Control measures were only partially effective. Leafworm numbers

declined rapidly in September. BOLLWORMS (*Heliothis* sp.) - Egg-laying began late and was generally light during July. An increase in egg-laying and resultant larval damage was reported from all areas during August. Very little damage to squares occurred after September 1. Boll damage was generally light; however, it was widespread. A minimum of damage took place in irrigated cotton due to persistent control measures. Late winter debris samplings in eastern Oklahoma for the PINK BOLLWORM (*Pectinophora gossypiella*) showed a very low overwintering survival. Samplings in the southwestern counties indicated a somewhat higher survival rate there. The first reported moths for the season were taken at Chickasha May 20. During August, over 33, 000 blooms were inspected in southwestern counties - no larvae were found. Likewise, inspection of approximately 36,000 blooms in eastern counties failed to reveal any larvae. During the fall and early winter of 1957, inspections of gin trash, green bolls, dry bolls, lint cleaners, and gin stands indicated a very light pink bollworm infestation, in fact, lighter than in 1956. CABBAGE LOOPER (*Trichoplusia ni*) - Populations began building up in southern areas in late July. During late August and early September, heavy populations were found in most southwestern fields; other areas had lighter numbers. Damage to cotton was minimized due to the late seasonal buildup. Generally, insecticidal control was unsatisfactory. BOLL WEEVIL (*Anthonomus grandis*) damage in the State was negligible except in some eastern and southeastern counties. Late in the season, a light infestation of larvae in green bolls was noted in some southwestern fields. COTTON APHID (*Aphis gossypii*) infestations were generally light with only localized heavy populations. COTTON FLEAHOPPER (*Psallus seriatus*) numbers were light early in the season. During late July and early August, a rapid increase took place in many southwestern fields. Peak populations there ran from 10-200 fleahoppers per 100 terminals. Other regions of the State had light populations. THRIPS were not abundant in any section during 1957. Scattered fields in the southwest supported heavy populations of WHITEFLIES during August and September. Light scattered MITE populations occurred throughout the State; heavy in some fields in Caddo, Kiowa, and Jackson Counties.

Forest, Ornamental and Shade Tree Insects: Populations of IPS BEETLES (*Ips* spp.) in shortleaf pine in the southeast area were generally light compared with 1956. A few scattered medium-heavy infestations were noted during mid-summer in Pushmataha and McCurtain Counties. BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) infestations in the southeast were lighter than in 1956. RED-HUMPED CATERPILLAR (*Schizura concinna*) defoliated native sumac in Latimer County during September. Many catalpa trees in McCurtain County were severely defoliated by CATALPA SPHINX (*Ceratonia catalpae*). LEAFHOPPERS were very abundant on native elm trees in most areas. Predominant species were *Erythroneura dumosa* and *Erythroneura basilaris*. An ARBORVITAE APHID (*Cinara tujaefilina*) was numerous on hedges in the Stillwater area during late winter and early spring. A CEDAR SCALE (*Cryptaspidotus shastae*) was reported from the central area. Over 90 percent of pine twig terminals in the Stillwater area were infested with the pupae of NANTUCKET PINE MOTH (*Rhyacionia frustrana*). SPIDER MITES damaged privet shrubbery in central Oklahoma during mid-summer. A heavy local infestation of the ELM LEAF APHID (*Myzocallis ulmifolii*) occurred on native elm in the Healdton area. The LOCUST BORER (*Megacyllene robiniae*) did severe damage to a stand of locust trees in the Valliant area. Isolated heavy populations of the HACKBERRY NIPPLE GALL (*Pachypsylla celtidis-mamma*) on hackberry occurred in the central area.

Insects Affecting Man and Animals: COMMON CATTLE GRUB (*Hypoderma lineatum*) - Most of the grubs had emerged from the backs by February 1. The first report of heel fly activity was in Choctaw and Pushmataha Counties March 23. Fall 1957 infestations were slightly higher than in 1956. HORN FLY (*Siphona irritans*) populations were light throughout the spring. In June a very rapid increase in all except the western areas was noted. Mid-June

populations in the central area commonly ran 2,000 -5,000 flies per cow; 10,000-20,000 on bulls. Lighter numbers were present in other state areas. Beginning in July a marked decline occurred statewide. TABANIDS remained common from early June through October. In general, numbers were light except at mid-summer in northeastern and north central counties where from 15-20 flies per animal were common. Chief species represented were Tabanus equalis, T. atratus, T. fairchildi, and T. lineola complex. MOSQUITOES were heavy in all sections during June. Abundant rainfall provided a very favorable breeding habitat. Many cities initiated control measures. Populations of LONE STAR TICK (Amblyomma americanum) larvae were greater than for the past three years in Atoka County. Populations of SCREW-WORM (Callitroga hominivorax) did not build up until very late (September and October) The overall picture was worse than in 1956. FLEAS in dwellings were reported from most sections. BROWN DOG TICK (Rhipicephalus sanguineus) was troublesome in homes throughout the year. EAR TICK (Otoebius megnini) populations in Custer County were the heaviest in years.

Stored-Product Insects: SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) was generally light. Heavy local populations of the LESSER GRAIN BORER (Rhyzopertha dominica) occurred in eastern area but overall numbers were down from last year. INDIAN-MEAL MOTH (Plodia interpunctella) was light in feed and seed establishments. RED FLOUR BEETLE (Tribolium castaneum) showed scattered light to heavy infestations in mills, warehouses, and farm-stored grain in all sections. Only light populations of the CONFUSED FLOUR BEETLE (Tribolium confusum) were noted. Light, general infestations of DERMESTIDS occurred throughout the State. CADELLE (Tenebroides mauritanicus) was very light. RICE WEEVIL (Sitophilus oryza) was lighter than 1956. The FLAT GRAIN BEETLE (Laemophloeus pusillus) was one of the most abundant pests of stored grain during 1957.

Beneficial Insects: CONVERGENT LADY BEETLE (Hippodamia convergens) populations in alfalfa were low throughout the State. This was perhaps due largely to the light spotted alfalfa aphid infestation in 1957. LACEWINGS (Chrysopa spp.) were generally light in all sections. SYRPHID FLY larvae were locally abundant in the Frederick area small grains during May. The HONEY BEE (Apis mellifera) was observed bringing in the season's first pollen store February 23 in the Stillwater area.

Miscellaneous Insects: Heavy infestations of A FLY (Chrysomya demandata) were noted in three warehouses in Oklahoma City during May. A DRY-WOOD TERMITE (Kaloterms minor) was taken from a house in Guthrie during August. This was a new record for Oklahoma. A TERMITE (Reticulitermes hageni) was found swarming in Tulsa, October 26. A roadside census of A HARVESTER ANT (Pogonomyrmex sp.) in Cimarron County during May showed an average of 95 hills to the mile within the road right-of-way.

SUMMARY OF INSECT CONDITIONS - 1957

MISSISSIPPI

Prepared by R. E. Hutchins

Cereal and Forage Insects: On April 23 ARMYWORMS (Pseudaletia unipuncta) were counted in three oat fields in Washington County. In two fields first instar larvae numbered 7 and 8 per square foot, while in a third field larvae in the second to fourth instar numbered 11 per square foot. By May 10 most armyworms in oat fields had been controlled with chemicals. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) larvae injured small bean and cowpea plants in Harrison County in May and again in July. EUROPEAN CORN BORER (Pyrausta nubilalis) infested corn in Holmes, Humphreys, Issaquena, Tallahatchie, Tippah, Tunica, Yazoo and Webster Counties in June and August. SOUTHERN CORNSTALK BORER (Diatraea crambidoides) infested corn in Holmes County in August. A CHINCH BUG (Blissus leucopterus insularis) was feeding on lawn grass in the counties bordering on the Gulf of Mexico in May and June, and by August was reported to have almost reached epidemic proportions. This species was reported from Marion County in September and from Warren County in November. GROUND PEARLS (Margarodes sp.) were collected in Harrison County on St. Augustine grass in May, in Marion County in September and on centipede grass in Harrison County in October. SORGHUM WEBWORM (Celama sorghiella) infested heads of milo maize in a 60-acre field in Grenada County in October.

Fruit and Nut Tree Insects: ORIENTAL FRUIT MOTH (Grapholitha molesta) larvae were found in apple twigs from Noxubee County in May. WALNUT CATERPILLAR (Datana integerrima) damaged pecan trees in Jackson and Harrison Counties in June. FALL WEBWORM (Hyphantria cunea) was numerous on pecan and other trees in Jackson, Oktibbeha and Tate Counties in June. MAY BEETLES (Phyllophaga spp.) adults were feeding on pecan trees in Oktibbeha County early in May.

Vegetable Crops: MEXICAN BEAN BEETLE (Epilachna varivestis) fed on beans in Oktibbeha County in May. More damage to beans in Panola County than for several years was reported. There was also damage in Oktibbeha and Tallahatchie Counties. SOUTHERN ARMYWORM (Prodenia eridania) damaged potatoes in Jackson and Harrison Counties in May, tomato plants in Jackson, Harrison, Pearl River and Stone Counties, gardens in Lincoln, Neshoba, and Perry Counties, and sweet potatoes in Panola and Yalobusha Counties in September, and Forest County in October. SOUTHERN GREEN STINK BUG (Nezara viridula) caused injury to cowpeas in Perry County in May, to beans and tomatoes in Tallahatchie County in June, to beans in Lauderdale County in July. A WHITE-FRINGED BEETLE (Graphognathus peregrinus) adult from an infested part of Jasper County was sent to the Extension Entomologist. SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) was found in Adams County in October.

Cotton Insects: The first adult BOLL WEEVIL (Anthonomus grandis) was observed in Oktibbeha County on May 31. By the middle of July heavy infestations were general over the southern two-thirds of the State. BOLLWORM (Heliothis zea) infested cotton in Lauderdale County in June and Adams County in August. TOBACCO BUDWORM (Heliothis virescens) larvae were also found infesting cotton in Adams County in August. BEE T ARMYWORM (Laphygma exigua) fed on cotton near field edges in Lauderdale and Oktibbeha Counties. SOUTHERN ARMYWORM (Prodenia eridania) was feeding on cotton in Jones County in July.

Forest and Shade Tree Insects: EASTERN TENT CATERPILLAR (Malacosoma americanum) infested wild cherry trees in Choctaw, Oktibbeha and Webster Counties early in April. Cottonwood trees 1 - 6 years from cutting in a nursery in Washington County were injured by a TWIG BORER. NITIDULID larvae feeding on the sap oozing out of grub holes in oak trees were reported to kill patches of cambium, resulting in defects in lumber made from the trees. ARCTIID larvae found feeding on male cones on loblolly pines were reared and one adult was identified as Haploa sp. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) infested pine trees in Oktibbeha County, while Ips calligraphus in Adams County was suspected of killing pine trees. NANTUCKET PINE MOTH (Rhyacionia frustrana) larvae were received from Coahoma County in August and from Webster County in September. SOUTHERN PINE SAWYER (Monochamus titillator) was taken from dying pine trees in Attala County. RED-HEADED PINE SAWFLY (Neodiprion lecontei) larvae were infesting small pine trees in Lauderdale County in October. The first adults of EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) received in 1957 came from Lauderdale County on March 15, while others were received from Oktibbeha County on March 29. Workers were received from Newton County with the information that they had killed a three-year old apple tree.

Ornamental Plant Insects: A larva of UNICORN CATERPILLAR (Schizura unicornis) was feeding on rose leaves in De Soto County. A TEA SCALE (Fiorinia theae) and CAMELLIA SCALE (Lepidosaphes camelliae) infested Ilex burfordi in Sunflower County. AZALEA BARK SCALE (Eriococcus azaleae) infested azalea plants in Hinds County. SOUTHERN BEET WEBWORM (Pachyzancla bipunctalis) was damaging grass in Jackson County in September.

Insects Affecting Man and Animals: GULF COAST TICKS (Amblyomma maculatum) sent from Marion by a physician who suspected that tick bites were causing sickness. PUSS CATERPILLAR (Megalopyge opercularis) stung a boy who was sent to a hospital in Monroe County. CATTLE TAIL LOUSE (Haematopinus quadripertusus) was reported from Wilkinson County in February. IMPORTED FIRE ANT (Solenopsis saevissima richteri) was reported from Attala County in February and March.

Stored-Product Insects: Larvae feeding in cracked soybeans on the floor of a seed house in Leflore County were reared and identified as MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella). Some small beetles that emerged in large numbers from stored oats and possibly from student insect collections were identified as Trogoderma sternale.

SUMMARY OF INSECT CONDITIONS - 1957

ARIZONA

Arizona Cooperative Report

Highlights: SPOTTED ALFALFA APHID less troublesome than in 1956 but with a mid-summer peak in Maricopa Co. PEA APHID as damaging to alfalfa as spotted alfalfa aphid in Yuma County early in the season. LYGUS BUGS rated as the number one pest of cotton. COTTON LEAFWORM invaded State and caused moderate damage to cotton.

Cereal and Forage Insects: Alfalfa - SPOTTED ALFALFA APHID (Therioaphis maculata) built up to high populations at Yuma during January but was dramatically reduced by a fungus (Entomophthora sp.) late in the month. A general increase came in Yuma County during mid-April and elsewhere in the southern part of the State in early May. A reduction occurred throughout

the area in late May and early June. Maricopa County had a mid-summer rise the middle of July, with a drop early in August. The over-all picture was of decreased populations from previous years, with scattered heavy damage. PEA APHID (Macrosiphum pisi) reached the highest numbers seen in 5 years in Yuma County from March to May. Damage was equal to that of spotted alfalfa aphid. Lygus hesperus and, perhaps, others reached abnormally high populations in Yuma and Maricopa Counties and high populations in all areas during June and July. CLOVER SEED CHALCID (Bruchophagus gibbus) populations were generally low in Yuma County. ALFALFA CATERPILLAR (Colias philodice eurytheme) became very abundant in the Yuma area in August but with fewer larvae than expected from the adults present. A LEAF ROLLER (Platynota stultana) was abundant in Yuma County from July to September, serious in September. EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) was more abundant at Yuma than for past two years but damage was slight. It was reported as severe in some fields at Peoria, Maricopa County, February 28. STINK BUGS became abundant in most alfalfa seed fields at Yuma early in August. GRAINS-CORN EARWORM (Heliothis sp.) apparently exacted its normal toll of ears of both sweet and field corn. SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) infested one fifth to one half of the stalks in a field of grain sorghum at Tolleson, Maricopa County in mid-June. LESSER CORNSTALK BORER (Elasmopalpus lignosellus) damaged one third of grain sorghum plants in one field in Maricopa County the last week in June. BEET ARMYWORM (Laphygma exigua) damaged grain sorghum in Pinal and Pima Counties during May. CABBAGE LOOPER (Trichoplusia ni) infestation heavy on grain sorghum in one field in Pinal County in mid-May. STINK BUG (Euschistus impictiventris) adults averaged 8 - 10 per 100 sweeps on grain sorghum at Yuma in early April. An unidentified species reported as heavy on barley west of Buckeye, Maricopa County, March 28. DESERT CORN FLEA BEETLE (Chaetocnema ectypa) infestation was medium on wheat at Peoria, Maricopa County, February 28 and damaging young grain sorghum at Yuma May 24. ENGLISH GRAIN APHID (Macrosiphum granarium) populations developed late on winter grains but became heavy in some fields of barley and wheat in Maricopa and Pinal Counties in late March and early April.

Fruit Insects: COTTONY-CUSHION SCALE (ICerya purchasi) built up to large numbers on citrus in the area east of Phoenix early in April but apparently was reduced in most areas by the activities of the VEDALIA BEETLE (Rodolia cardinalis) this year. CITRUS THRIPS (Scirtothrips citri) built up on citrus at Yuma in March and again from July to September. YUMA SPIDER MITE (Eotetranychus yumensis) webbing was extensive in citrus at Yuma in March and April, with some groves showing discolored leaves. Many groves treated in April. WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) damaged grape in several locations in Maricopa and Pinal Counties from July to September but was lighter than usual at Safford, Graham County. WOOLLY APPLE APHID (Eriosoma lanigerum) reported in large numbers on apple at Safford, Graham County early in the summer.

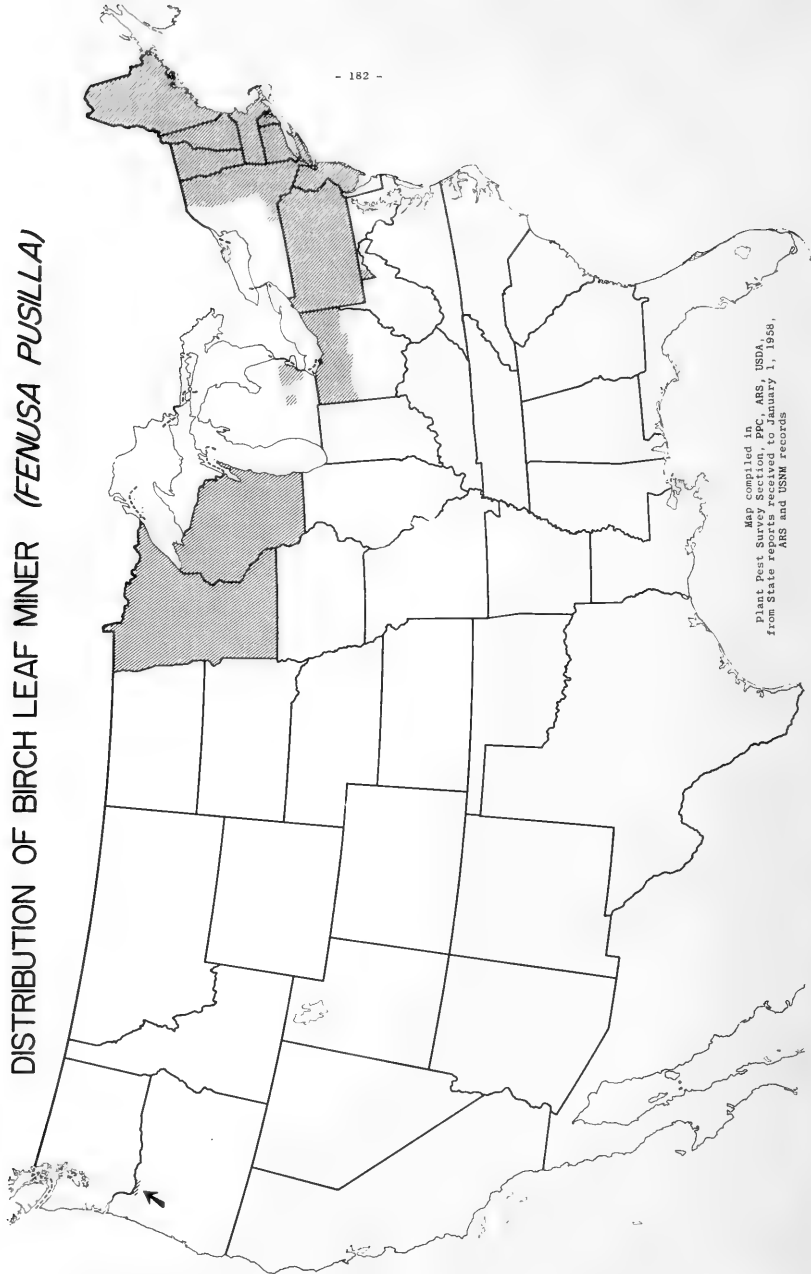
Truck Crop Insects: A LEAF MINER (Liriomyza sp.) damaged cotyledons of cantaloup at Yuma in March but did not develop large populations later. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) caused damage to one field of cantaloup at Yuma late in May. A SPIDER MITE was reported very serious on watermelon at Yuma early in July. A LEAF ROLLER (Platynota stultana) was serious on watermelon in western Maricopa County late in July. TENEBRIONIDS (Blapstinus spp.) damaged watermelons at Tucson early in May. DIAMONDBACK MOTH (Plutella maculipennis) moderately damaged 20 acres of cabbage in Maricopa County in mid-January. GREEN PEACH APHID (Myzus persicae) exceptionally numerous in some lettuce seed fields at Yuma May 24. BEET ARMYWORM reported light on lettuce at Phoenix early in February and numerous on Papago peas at Yuma in mid-April. TOMATO FRUITWORM (Heliothis sp.) was reported numerous on tomato at Yuma late in May. POTATO PSYLLID (Paratrioza cockerelli) became abundant on potato in Pinal County in April.

Cotton Insects: THRIPS (mainly Frankliniella occidentalis) damage was unusually heavy early in season because of cool weather. APHIDS were reported more damaging than usual early in the season because of cool weather. TENEBRIONID BEETLES (Blapstinus spp.) did damage in many parts of Maricopa County early in May. BEET ARMYWORM caused some injury in Maricopa and Pima Counties in May. LYGUS BUGS (Lygus spp., mainly hesperus) began building up in Yuma and Maricopa Counties early in June becoming sufficiently numerous in all areas by the end of the month to necessitate chemical control in most fields. This was rated as the number one cotton insect in Arizona during most of the summer. FLEAHOPPERS (Spanogonicus albofasciatus and Psallus seriatus) became abundant in most areas by early July and were chemically controlled with Lygus. STINK BUGS were reported from all parts of Maricopa County in July and August. BOLLWORM (Heliothis sp.) became abundant in many fields by early August and remained damaging into September but was generally rated second to Lygus in damage. COTTON LEAFWORM (Alabama argillacea) invaded this area in 1957 and became damaging by the third week in August in Greenlee County, with more spotty damage in Graham and Cochise Counties and lighter damage in Pima and Pinal Counties. COTTON LEAF PERFORATOR (Bucculatrix thurberiella) built up in same areas previously infested, in western Maricopa, Yuma and Pinal Counties by early August and also caused some concern in Pima County by September. CABBAGE LOOPER (Trichoplusia ni) populations were high in scattered areas of Maricopa and Pinal Counties in August. A virus disease reduced numbers in some areas. A LEAF ROLLER caused some damage in western Maricopa County early in July. SALT-MARSH CATERPILLAR (Estigmene acrea) normal high populations were present in Yuma and Maricopa Counties in September. FIELD CRICKET (Acheta assimilis) damaged blooms and young bolls at Gadsden and San Luis, Yuma County early in August. SPIDER MITES caused damage to scattered fields in Yuma and Pima Counties from late May to end of September, with high numbers in parts of Maricopa and Pinal Counties in September. PINK BOLLWORM (Pectinophora gossypiella) reached higher numbers than in recent years in Greenlee and Graham Counties.

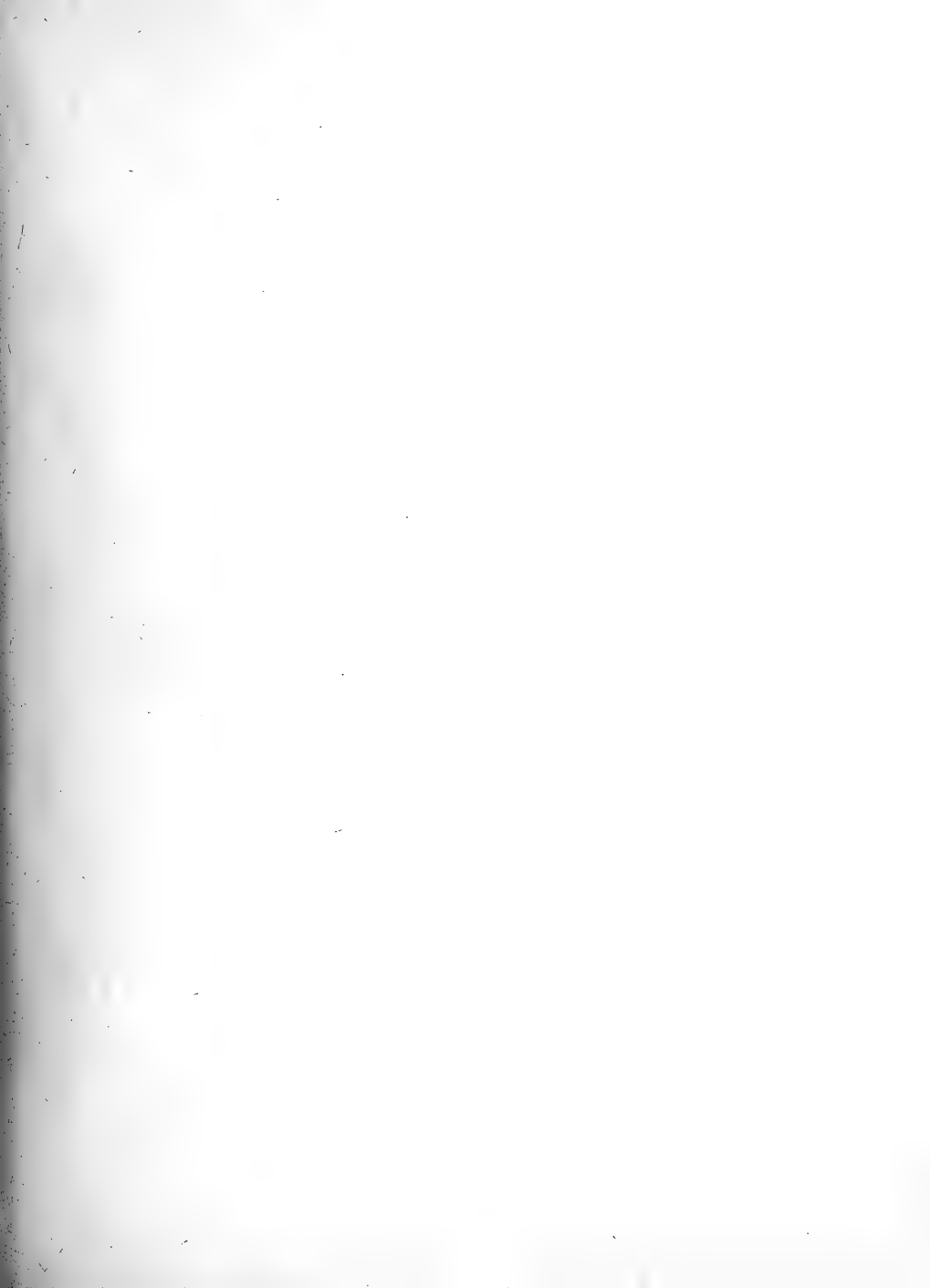
Insects Affecting Man and Animals: An EYE GNAT (Hippelates collusor) became annoying in Yuma area about February 26. BROWN DOG TICK (Rhipicephalus sanguineus) was abundant and annoying in the larger southern cities during the summer. MOSQUITOES were annoying in irrigated areas of Maricopa and Pinal Counties during the summer.

Miscellaneous Insects: SAY STINK BUG (Chlorochroa sayi) was heavy on more than 1000 acres of sugar beet seed fields early in June.

DISTRIBUTION OF BIRCH LEAF MINER (*FENUSA PUSILLA*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA,
from State reports received to January 1, 1958,
and USNM records





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MAR. 14, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

**PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE**

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG locally heavy in some fields in central Oklahoma, moderate in areas of Alabama and light in one Georgia county. (p.185).

Economic infestations of ARMY CUTWORM appearing in some counties of Oklahoma. (p. 185).

CHINCH BUG survey indicates very severe infestation potential in western Missouri, eastern Kansas, central Oklahoma and in a small area of east central Illinois. (p. 186).

Outlook for BEET LEAFHOPPER in the Intermountain Region calls for moderate to heavy movement into crop areas. (p. 188)

VEGETABLE WEEVIL light to moderate in tobacco plant beds in Georgia areas. (p. 188)

Over 88,000 acres treated in IMPORTED FIRE ANT eradication program. (p. 190).

SUMMARY OF INSECT CONDITIONS - 1957 - Illinois (p. 192), Wisconsin (p. 194), Kansas (p. 199), Colorado (p. 201).

INSECT LOSS estimates tabulated for some States. (p. 205).

CORRECTIONS and ADDITIONAL NOTES. (p. 190).

WEATHER OF THE WEEK ENDING MARCH 10

Heavy snowfall in the central Great Plains was the only unusual feature of last week's weather. These snows, without drifting, fell both early and late in the week, with weekly totals ranging up to 14 inches in Colorado and 20 inches in Kansas and western Oklahoma. On the 8th a few stations in Kansas still reported 30 inches on the ground. The snowfall moved into the Mississippi Valley over the weekend, and 2 to 9 inches fell over the northern half of Missouri and 3 to 6 inches across central Illinois. Rain and snow produced rather heavy moisture totals in Arizona and New Mexico and rainfall was mostly moderate to heavy in other southern areas. Weekly totals were greatest in east Gulf coastal sections where they ranged up to 8 inches. In northern areas and most of the Far West, amounts were light, except for an inch or more west of the Cascade Mountains. Soil moisture is now adequate to excessive in the South and ample elsewhere, except in some small areas of eastern Montana and the Far Southwest.

Temperatures averaged as much as 9° below normal in the central Great Plains where heavy snowfall occurred, and about 3° below normal in the Ohio Valley. Elsewhere east of the Rockies temperatures were mild for the season, except along the north-central Border and in northern New England where they were unusually mild with weekly averages ranging up to 12° above normal. Colder air, however, which started moving into the Northeast the latter part of the period reduced temperatures to about normal levels over the weekend. West of the Continental Divide temperatures averaged 3° to 6° below normal. This was the first time in several weeks that temperatures have averaged below normal in the Pacific Northwest. The week's temperature regime for the entire country showed little day to day change and was without any unusual extremes. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - ALABAMA - Moderate infestations in wheat and oats in southeastern and central areas, with counts of 15 per 10 sweeps. (Grimes). GEORGIA - Light infestations on small grain, Houston County. (Johnson, March 3). OKLAHOMA - Locally heavy in some fields in central area. Few fields average 40-60 per linear foot of row, with most considerably less, Logan County. Few fields averaged 100-150 per linear foot with damage evident, Cleveland County. Numbers rare-occasional in other southern and southwestern counties. Lady beetles feeding on aphids in Cleveland County. (Coppock, Owens).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Abundant in some fields, Tillman and Cotton Counties. Lighter in adjacent counties. (Coppock, Owens).

GRASSHOPPERS - NEW MEXICO - Few first and second-instar nymphs in Rio Grande River Valley near Las Cruces, Dona Ana County. Moisture conditions favorable with possibility hatch may occur earlier than in past several years. It is estimated there will be requests for cooperative control programs on approximately 150,000 acres in Union County. (N. Mex. Coop. Rept.)

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - Larvae half grown in some fields in Rockingham County. Small larvae present in alfalfa fields in Montgomery and Wake Counties. (Farrier, Neunzig). DELAWARE - Few small larvae feeding in folded alfalfa leaflets and buds, New Castle and Kent Counties. (MacCreary, Conrad).

CLOVER LEAF WEEVIL (Hypera punctata) - OKLAHOMA - Beginning to appear in scattered fields in south central area. (Coppock, Owens).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Numbers average over 100 per linear foot in a few scattered wheat fields in Cotton County. Populations occasional to light in most fields in central and southern areas. (Coppock, Owens).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OKLAHOMA - Economic infestations in Greer, Kiowa, Caddo and Canadian Counties. Feeding damage light. Most larvae in early instars. Populations averaged 0.25-3.3 larvae per square yard of surface area. (Coppock, Owens).

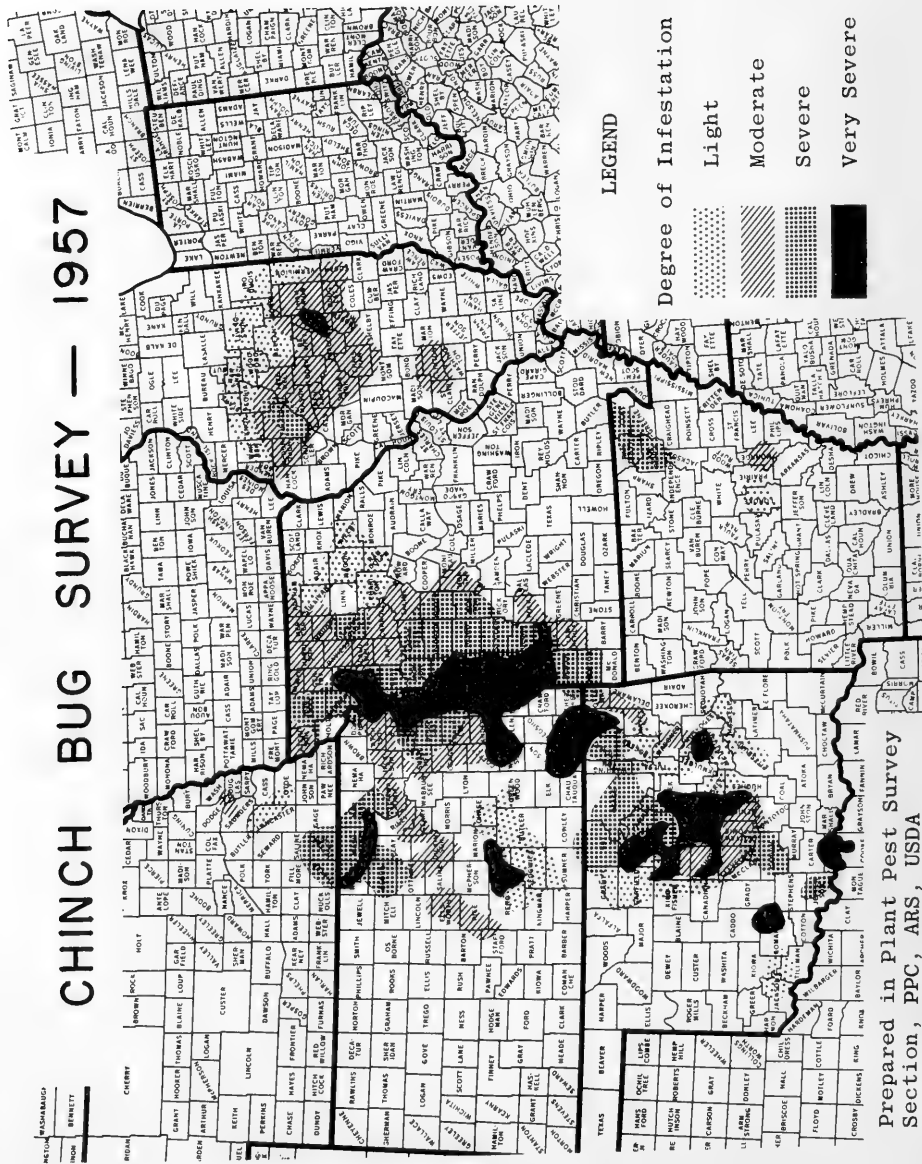
A CUTWORM - NEW MEXICO - Moderate infestation in alfalfa near Fairacres, Dona Ana County. (N. Mex. Coop. Rept.).

PEA APHID (Macrosiphum pisi) - OKLAHOMA - Average 10-30 per crown in alfalfa, Garvin County. (Coppock, Owens).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Very light infestations in most field checked in southern part of State. No apparent damage. (N. Mex. Coop. Rept.). OKLAHOMA - Populations remain light to very light throughout the State. Heaviest infestation was 10 per alfalfa plant in 1 field, Tillman County. (Coppock, Owens). Averaged about 15 per 10 sweeps, 2 fields in Ft. Cobb area, Caddo County. One field had 15-20 per linear foot of row, Jackson County. (Hudson, Hatfield).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - ALABAMA - Light infestations in fields of oats and wheat. (Grimes).

CHINCH BUG SURVEY — 1957



LEGEND

Degree of Infestation

- Light
- Moderate
- Severe
- Very Severe

Prepared in Plant Pest Survey Section, PPC, ARS, USDA

FRUIT INSECTS

ROSY APPLE APHID (Anuraphis roseus) - OREGON - Winter eggs were hatching February 28 in Jackson County. Fairly abundant. (Capizzi).

APPLE APHID (Aphis pomi) - OREGON - Eggs began hatching on apple shoots March 3, Jackson County. Not as abundant as in 1957. (Capizzi).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OREGON - Winter eggs have been hatching on pear trees since March 1 in Jackson County. (Gentner).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - OREGON - Appearing in pear fruit buds, Jackson County. (Capizzi, March 4).

SPIDER MITES - CALIFORNIA - Medium infestation of Tetranychus telarius and Panonychus ulmi adults and eggs on Barlett pear in Courtland area, Sacramento County. (Cal. Coop. Rept.).

SAN JOSE SCALE (Aspidiotus perniciosus) - LOUISIANA - Present in damaging numbers in some areas. (Spink). OKLAHOMA - Heavy infestation on scattered trees in 1 native pecan orchard, Garvin County. (Coppock, Apt).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Inspection of 300 pecan branch tips for overwintering hibernacula was negative, Garvin and Lowe Counties. (Coppock, Owens).

LESSER PEACH TREE BORER (Synanthedon pictipes) - LOUISIANA - Present in damaging numbers in several orchards in Ruston area, Lincoln Parish. All stages from first instar larvae to pupae present. (Spink, March 2).

COTTONY-CUSHION SCALE (Icerya purchasi) - CALIFORNIA - Medium infestations on dooryard lemons in Sacramento, Sacramento County. (Cal. Coop. Rept.).

TRUCK CROP INSECTS

BEEF ARMYWORM (Laphygma exigua) - CALIFORNIA - Light populations in cabbage at National City, San Diego County. (Cal. Coop. Rept.)

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Infestations light-moderate on collards and cabbage, Colquitt, Lowndes and Cook Counties. (Johnson, March 4).

GREEN PEACH APHID (Myzus persicae) - OKLAHOMA - Populations range 1-12 per plant in 2 spinach fields at Bixby, Tulsa County. (Walton).

ONION THRIPS (Thrips tabaci) - NEW MEXICO - Light to moderate infestations on fall and spring onions, Dona Anan and Luna Counties. (N. Mex. Coop. Rept.).

SEED-CORN MAGGOT (Hylemya cilicrura) - OKLAHOMA - No eggs found on spinach at Bixby, Tulsa County. (Walton).

BEEF LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Survey reveals very few nymphs hatching in the Los Banos, Buena Vista and McKittrick Hills area of the San Joaquin Valley. Spring rains have caused good growth of winter vegetation, however, large areas remain favorable for spring breeding. (Cal. Coop. Rept.).

Beet Leafhopper Conditions in Utah, Western Colorado, Southern Nevada, Southeastern California and Central Arizona - 1958

The beet leafhopper spring movement from the southern desert breeding grounds to the cultivated districts of southern and south central Utah, southern Nevada, western Colorado, central Arizona and southeastern California is expected to be heavy. The movement to northern Utah is expected to be moderate to heavy. The local movement from the breeding grounds of northern and eastern Utah to the adjacent cultivated districts of northern Utah and western Colorado is expected to be moderate to heavy. This statement is based upon present conditions. The movement of the leafhopper into cultivated districts of central and southern Arizona and southeastern California is expected to start by late February to early March. The movement of the leafhopper into the cultivated districts of southern Nevada and southern Utah is expected to start by late March to early April. The movement to central Utah and western Colorado is expected to start by mid-April and will reach its peak by mid-May. The local movement to northern Utah and western Colorado is expected to start by late May and reach its peak in mid-June. The abundance of the population engaged in these movements will depend upon unpredictable weather fluctuations during the next two months. However, as a result of experience in previous seasons, conditions as observed in 1958 are similar to 1940 and have been associated with a heavy movement of leafhoppers to the cultivated districts. A later statement will be issued on beet leafhopper conditions based on additional information obtained from field studies now in progress. The distant southern breeding ground estimated to be 50,000 square miles was studied in mid-February, 1958, in co-operation with state or federal officials. Host plants were found to be present in 70 percent of the 385 ten-mile sampling points in the entire area breeding grounds in 1958 in comparison to 14 percent in 1957, 3 percent in 1956, 36 percent in 1955, and 48 percent in 1952. The average leafhopper population in the approximately 35,000 square miles studied where plants were present averaged 1.0 per square foot of weed host and was four times higher than in 1952. The plants present and the stand are favorable for beet leafhopper breeding. Additional leafhoppers may be present in northern Mexico where it has been reported good host plant conditions exist. Beet leafhoppers collected from various annual host plants in the southern breeding grounds in February, 1958, showed about 25 percent to be viruliferous or capable of transmitting the virus that causes curly top disease. This is in comparison to 6 percent in 1957, 10 percent in 1956, 20 percent in 1955 and 10 percent in 1952. The percentage of viruliferous beet leafhoppers that overwintered in 1958 in northern Utah breeding ground has not been determined. On the basis of the acreage of host plants, the beet leafhopper population and the percentage of the insects that are viruliferous, it is estimated 235 billion infective leafhoppers were present in the southern breeding grounds in the February study. By comparison the population in 1957 was estimated at 158 million and 1952, 7 billion. (Dorst, Knowlton).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - GEORGIA - Light infestation on tobacco plant beds in Colquitt County. (Johnson, March 5).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - GEORGIA - Infestations on tobacco plant beds light to moderate in Colquitt, Mitchell, Grady, Lowndes and Cook Counties. (Johnson, March 5).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

EASTERN TENT CATERPILLAR (Malacosoma americanum) - LOUISIANA - Hatching on plum and cherry in Lincoln and Claiborne Parishes, February 28-29. (Spink).

A CEANOETHUS SCALE (Lepidosaphes ceanothi) - CALIFORNIA - Light infestator at Montrose, Los Angeles County. This is a new location in the State. (Cal. Coop. Rept.).

AZALEA BARK SCALE (Eriococcus azaleae) - NORTH CAROLINA - Local infestations on azalea, Chatham County. (Scott, Farrier).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Heavy infestation on jasmine in Sacramento, Sacramento County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - NORTH CAROLINA - Moderate to severe infestation in Ashe County. Infestations found in 4 of 5 herds examined in Buncombe County, with 50 percent of the infested animals averaging 1-2 grubs. Very few animals infested in 1 of 4 herds examined in Henderson County. None found in over 300 head examined in Union County. Severe infestations occurred two to three years ago in Buncombe and Henderson Counties. (Jones). UTAH - Infestations approaching peak in several counties. Peak of infestation past in Washington County. (Knowlton). NEW MEXICO - Annoying range cattle in Hidalgo County. (N. Mex. Coop. Rept.). OKLAHOMA - Averaged 1.6 grubs per animal on 28 head of yearling steers, Woodward County. (Allison, February 28).

CATTLE LICE - NEW MEXICO - Some light infestations on range cattle, Luna and Hidalgo Counties. (N. Mex. Coop. Rept.).

FOWL TICK (Argas persicus) - GEORGIA - Infesting chicken house in Appling County. (Jordan, March 4).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - One new infestation in Wasco area, Kern County. To date 77,000 inspections and reinspections have been made by cooperating agencies in the State. (Cal. Coop. Rept.).

CARPET BEETLES - DELAWARE - A mixed infestation of Anthrenus verbasci and Attagenus piceus heavily damaging woolen garments and lightly damaging adjacent rayon garments. (MacCreary, Conrad).

DRUG-STORE BEETLE (Stegobium paniceum) - NORTH CAROLINA - Adults and larvae destroying Japanese-made toys in a store in Wake County. (Jones, Spilman, February 6).

BENEFICIAL INSECTS

HONEY BEE (Apis mellifera) - CALIFORNIA - Sampling for Nosema disease began February 27 with samples from 18 hives. An infection of 2 percent was found in 1 hive only. (Cal. Coop. Rept.).

DAMSEL BUGS (*Nabis* spp.) - NEW MEXICO - Numerous in many fields in Dona Ana and Luna Counties. (N. Mex. Coop. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - Total acreage treated in eradication program to February 28, 1958, is 88,353. Breakdown by States is as follows: Alabama, 8,576; Arkansas, 11,211; Florida, 3,000; Georgia, 50,500; Louisiana, 11,537; Mississippi, 3,209; North Carolina, 82; South Carolina, 212; Texas 26. All infested land in North Carolina now treated. Treatments have begun in Opelousas district of Louisiana and in Autauga, Montgomery and Perry Counties, Alabama. (PPC, Sou. Reg.).

AMERICAN COCKROACH (*Periplaneta americana*) - GEORGIA - Massive infestation of a large milling company in Fulton County. Det. A. J. Brooks. (CDC Ent. Mus.).

BOXELDER BUG (*Leptocoris trivittatus*) - UTAH - Again annoying in several localities. (Knowlton). MARYLAND - Entering homes and causing annoyance to homeowners, Montgomery and Somerset Counties. (U. Md., Ent. Dept.).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - NORTH CAROLINA - Numerous on a fire place mantle, Warren County. (Reams, Farrier).

CORRECTIONS In CEIR 8(8):129 delete Santa Clara County, California from map of *Diabrotica balteata*.

LIGHT TRAP COLLECTION

	<i>Pseudaletia unipuncta</i>	<i>Agrotis ypsilon</i>	<i>Peridroma margaritosa</i>	<i>Feltia</i> subsp.	<i>Prodenia</i> orn.
<u>LOUISIANA</u>					
Baton Rouge 2/28-3/6	5	6	5	1	
Franklin 2/26-3/4		1		1	1
<u>SOUTH CAROLINA (County)</u>					
Charleston 2/24-3/9	31	19	8	7	3

ADDITIONAL NOTES

NEVADA - SPOTTED ALFALFA APHID populations very light in Moapa and Virgin Valleys, Clark County, and in Pahrump Valley, Nye County. PEA APHID infestation very light on alfalfa in Moapa and Virgin Valleys, Clark County, and light to medium in Pahrump Valley, Nye County. (Hoff, Zoller). CUTWORM populations light to medium in alfalfa at Mesquite, Clark County. (Zoller). LYGUS BUGS present in alfalfa in small numbers in Moapa and Virgin Valleys, Clark County. A DIPTEROUS LEAF MINER causing considerable damage to alfalfa in Virgin Valley, Clark County. (Hoff). LADY BEETLES very abundant in alfalfa in Pahrump Valley, Nye County. (Zoller). CLOVER MITE continuing to enter homes in Reno-Sparks area, Washoe County. (Bechtel, et al.). CARPET BEETLES causing damage in Reno, Washoe County. (Gardella).

SUMMARY OF INSECT CONDITIONS - 1957

ILLINOIS

Prepared by C. E. White

Highlights: EUROPEAN CORN BORER numbers decreased considerably since 1956 generally, but in some west-southwest counties some increase was observed. A protozoan disease (Perezia pyraustae) was very abundant in September. FALL ARMYWORM was common, doing some damage to corn in the southern half of the State. SPOTTED ALFALFA APHID and PEA APHID were relatively light throughout the year. MEADOW SPITTLEBUG was numerous and increased in abundance in northern counties.

Clover and Alfalfa Insects: PEA APHID (Macrosiphum pisi) was low throughout Season. Greatest number up to August 28 was 160 per sweep compared with 1,600 in 1956. Approximately 18,000 acres were treated in 1957 compared with 75,000 in 1956. SPOTTED ALFALFA APHID (Therioaphis maculata) was first found June 12 in Hancock County. Populations were relatively light with very few fields reaching 1,000 per sweep. Last year populations of 1,000 to 7,000 per sweep were very common. Heavy and timely rains kept populations down. An estimated 2,407 acres were treated at an estimated profit of \$12,000. SWEETCLOVER APHID (Myzocallidium riehmi), first taken in 1956, was found in 10 widely scattered counties ranging from Hamilton and Monroe Counties in the south to Jo Daviess and Kendall Counties in the north. CLOVER LEAF WEEVIL (Hypera punctata) populations in early April were about three times greater than at a similar period in 1956, averaging 19.5 per square foot or slightly greater than in 1955. An estimated 22.5 percent of the clover fields could have profitably been treated at that time. Disease was important in reducing populations in late April and early May; however, they remained economic in some fields May 2-8 with 13 percent of the larvae pupated. It is estimated that only 18,190 acres were treated at a profit of \$45,475. CLOVER ROOT BORER (Hylastinus obscurus) averaged 40 adults per 100 sweeps in the northeast section April 25 to May 1, with as many as 230 per 100 sweeps in one field. This is apparently the heaviest population ever recorded in Illinois. GARDEN FLEAHOPPER (Halticus bracteatus) did moderate damage to a few alfalfa fields in southern area. GARDEN WEBWORM (Loxostege similalis) populations reached 240 per 100 sweeps in some alfalfa fields during August. From 50 to 100 percent of the plants were infested with webbing in some fields. GRASSHOPPERS (Melanoplus spp.) were not quite as abundant as in 1956. However, an estimated 22,878 acres (including fence rows, ditch banks, waterways, etc.) were treated for control with profits from treatment estimated at \$114,390. The fall adult survey showed a light infestation in western and northwestern sections with non-economic populations everywhere else in the State. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) was more abundant than in 1956. An average of about 50 percent of red clover stems were infested by larvae May 2 to June 15 compared with 28 percent in late May 1956. Many fields had 100 percent of the stems infested. MEADOW SPITTLEBUG (Philaenus leucophthalmus) populations increased this year. A few fields in northern sections averaged more than 2 nymphs per stem May 10 to 15, and populations of 1 nymph per stem were found in many fields from late April to early June. However only an estimated 9,896 acres were treated for control, with profits from treatments estimated at \$19,750. The fall adult survey showed a severe population in most of the northwest section and approximately half of the northeast section. A small area in Boone, McHenry, and Winnebago Counties was very severe. The eastern border from Clark County northward was mostly moderately infested. ALFALFA PLANT BUG (Adelphocoris lineolatus) and TARNISHED PLANT BUG (Lygus lineolaris) populations were about the same as

in 1956 with an undetermined amount of damage done to red clover seed fields. POTATO LEAFHOPPER (*Empoasca fabae*) populations were heavier than in 1956. An estimated 30 to 50 percent of the alfalfa fields in the southern half to two-thirds of the State could have profitably been treated to control this pest in the second crop. Damage in southern fields was moderate to very severe. An estimated 25,262 acres were treated at a profit of \$50,520. This pest caused an estimated \$1,363,600 worth of damage by reducing yield of alfalfa hay. When quality of hay produced is also considered the total damage is estimated at \$4,500,000. An est. 12,172 acres were treated against SWEETCLOVER WEEVIL (*Sitona cylindricollis*) at a profit of about \$12,000. An estimated \$328,400 worth of damage was done to clover hay yields by all insects this year.

Corn Insects: CHINCH BUG (*Blissus leucopterus*) populations were fairly low although some isolated fields were damaged. An estimated 4,598 acres (includes small grain fields treated) were treated at a profit of \$22,890. There were 200 acres of corn destroyed. An estimated loss of \$12,000. A survey October 3-9 in five southeast counties showed some damage to 90.4 percent of ears by CORN EARWORM (*Heliothis zea*) and FALL ARMYWORM (*Laphygma frugiperda*) with an average of 15 corn earworm and 7 fall armyworm larvae per 100 ears. A survey in Lawrence and Marion Counties showed some damage to 68 percent of ears with an average of 5.2 earworms and 47.6 fall armyworms per 100 ears. CORN FLEA BEETLE (*Chaetocnema pulicaria*) populations were low during May and June and little if any damage was done. Very few fields averaged as much as one beetle per plant this year. CORN LEAF APHID (*Rhopalosiphum maidis*) was very abundant on corn. CUTWORMS, mostly the BLACK CUTWORM (*Agrotis ypsilon*) did much damage to corn although not as much as in 1956. An estimated 16,146 acres were treated at a profit of \$80,730 and an additional 15,000 acres required replanting at an estimated loss of \$150,000. EUROPEAN CORN BORER (*Pyrausta nubilalis*) populations were lower than in the last 5 years. However, populations in some west-southwest counties showed an increase. Diseased and dead borers were more abundant this fall than in past years. An estimated 165,408 acres were treated returning profits estimated at \$661,630. It has also been estimated that the corn borer caused \$11,085,000 worth of damage to corn grown for grain this year. FALL ARMYWORM (*Laphygma frugiperda*) was present in early July and by the middle of August was scattered throughout the State. However, most damage occurred in the southern half of the State. Late planted corn was most heavily infested with damage occurring before the tassel emerged from the whorl. After tassels emerged and ears began to develop as many as 200 larvae per 100 ears were found. NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) severely damaged some untreated fields which had been planted to corn 2 or more years in succession. THRIPS were very numerous in east-southeast sections. Silvering of corn leaves was very noticeable in some fields in July. WHITE GRUBS (*Phyllophaga* spp.) damaged several corn fields in the central section with as much as 50 percent of the plants damaged and an average of two grubs per plant. WIREWORMS caused some damage in central and southern Illinois. An estimated 657,267 acres were treated returning a profit estimated at \$1,643,100. Disregarding the above figures it is estimated that soil insects caused a loss of approximately 25,529,600 bushels of corn valued at \$27,141,932, and approximate 4.8 percent loss.

Grass Insects: A WEEVIL (*Centrinaspis* sp.) averaged 1 to 2 per sweep and was causing damage to red top fields the middle of May.

Small Grain Insects: ARMYWORM (*Pseudaletia unipuncta*) was scarce throughout the season with no serious damage. CHINCH BUG (*Blissus leucopterus*) although relatively scarce did a small amount of damage to grain fields in eastern sections. The fall survey showed only two counties rated as severe or very severe compared with 6 counties in 1956, 9 in 1955 and 19 in 1954. HESSIAN FLY (*Phytophaga destructor*) populations at wheat harvest in 1957 were slightly less than half the 1956 populations. The reduction was probably

due to heavy spring rains.

Sorghum Insects: CORN LEAF APHID (Rhopalosiphum maidis) was very abundant in many grain sorghum fields. Some fields were treated. SORGHUM WEBWORM (Celama sorghiella) was present in many sorghum fields and did some damage this year.

Soybean Insects: BEAN LEAF BEETLE (Cerotoma trifurcata) was very numerous in southeastern areas where it caused noticeable defoliation in some fields. The overall damage, however, was very light. GREEN CLOVERWORM (Plathypena scabra) appeared in many soybean fields in late July and August but in most cases were effectively held in check by disease. An average of 34.4 percent of all larvae found in eastern sections were dead August 8-14.

Forest, Turf, Ornamental and Shade Tree Insects: BAGWORM (Thyridopteryx ephemeriformis) populations, although fairly numerous in some locations, were not nearly as abundant nor as destructive as in 1956. YELLOW-NECKED CATERPILLAR (Datana ministra) was very abundant in the northern half of the State and seriously defoliated many trees. WALNUT CATERPILLAR (Datana integerrima) was also very abundant and completely defoliated many walnut trees in the northern half of the State. WHITE-PINE SAWFLY (Neodiprion pinetum) completely defoliated several white pines in a Christmas tree planting in northern Illinois. An ACROLOPHID (Acrolophus sp.) was reported as damaging 2 or 3 lawns in eastern Illinois.

Insects Affecting Man and Animals: MOSQUITOES were more abundant and more troublesome in 1957 than for several years. CLUSTER FLY (Pollenia rudis) was very annoying in many homes during March. Probably more abundant than for several years.

SUMMARY OF INSECT CONDITIONS - 1957

WISCONSIN

Prepared by Wis. Ins. Survey

Highlights: Several insect populations failed to increase as expected, notably first-brood EUROPEAN CORN BORER, ARMYWORM, GRASSHOPPERS, and PEA APHID. POTATO LEAFHOPPER feeding toxicity caused severe yield and quality losses in alfalfa. SIX-SPOTTED LEAFHOPPER, through the transmission of aster yellows virus, caused losses to truck crops that were the highest of any year in the past decade. Some APHID populations were exceptionally high early in the season. The first observation and identification of BLACK CHERRY FRUIT FLY was made from specimens on Door County cherries. A LOOPER, identified as Rachiplusia ou, was observed damaging mint and tobacco. This is the first identification of this insect as a pest in Wisconsin.

Weather and Insect Activity: The first readily noticeable outdoor insect activity began on a few scattered warm nights in March, but was curtailed by cooler weather until mid-April, when warm weather revived activity and continued to advance the season until about the second week in May. From this time on and throughout most of the summer temperatures were slightly cooler than normal. Also, frequent precipitation averaged heavier than normal during the growing season. These conditions tended to limit the importance of some insects which normally are a problem. Also, it may explain the importance of some species which are infrequently a problem. Weather adverse to normal corn planting appears to have had an influence on

first-brood European corn borer populations. Favorable weather for insect flight continued intermittently until December, as evidenced by blacklight trap catches.

Cereal, Forage, Potato, Pea and Tobacco Insects: POTATO LEAFHOPPER (Empoasca fabae) was first found on alfalfa in Rock, Grant and Lafayette Counties May 15. Populations increased slowly until the middle of July then became rapid with counts of 8 adults per sweep in Columbia, Dodge and Fond du Lac Counties. By the first of Aug. "yellowing" of alfalfa was noticeable and severe "hopper burn" was noted on unsprayed potatoes. Some commercial bean acreage was treated. During late August populations began to decline. This insect caused more reduction of yield and quality in alfalfa than other forage insects in 1957. Overwintering TARNISHED PLANT BUG (Lygus lineolaris) adults were common after mid-April in the south but were scarce north and east of Dodge County. The hatch occurred in Late July. ALFALFA PLANT BUG (Adelphocoris lineolatus) 1957 population was very high. GRASSHOPPERS first hatched in mid-June, which was later than in 1956. Second and third instar nymphs of Melanoplus bivittatus were present during week of June 24 in Waupaca, Langlade and Oneida Counties. Adults appeared in western areas by July 26. Adults of M. bilituratus were present in mid-August but M. femurrubrum adults appeared later in some sections. In certain areas grasshoppers became numerous enough in early August to justify treatment. Grasshoppers were a problem in northern and southern tobacco growing areas. The 1957 adult survey revealed a high population in the central portion of the State and high egg concentrations were found in the same area. Spittle masses caused by MEADOW SPITTLEBUG (Philaenus leucophthalmus) nymphs were found in Crawford County by April 25 and counts of 2 nymphs per 10 alfalfa stems were present in Grant and Lafayette Counties. The State average was close to 2 per 10 stems. Large numbers of adults were present throughout the summer in most alfalfa growing regions.

A major portion of the southern corn crop was planted later than normal, but EUROPEAN CORN BORER (Pyrausta nubilalis) development appeared to be normal. Although there was a low carryover, winter survival was high. Parasitism, principally by Lydella grisescens, was determined to be 15.7% during the winter 1956-57 compared with 10.4% for 1955-56. Parasitism by the protozoan (Perezia pyraustae) was 5.1% this being the first determination for Wisconsin. In Grant County, first moth flights were noted in mid-June, and egg masses and leaf feeding on June 24. Extended moth flights in the Fond du Lac County area necessitated treatment on sweet corn. Parasitism by Horogenes punctorius was quite high on first-brood borers in some Grant County fields. Second-brood moths were present as early as July 29 in Grant County. Dissections in central Wisconsin revealed that as high as 15 percent of the borer larvae pupated to become second-brood. The 1957 fall survey revealed a population of 36 borers per 100 plants, a 50 percent increase over 1956. Many borer infested shanks were noted. CORN LEAF APHID (Rhopalosiphum maidis) flight activity was noted July 19. The 1957 infestation was higher than that of 1956. FALL ARMYWORMS (Laphygma frugiperda) were noted in Columbia County by August 9 on late planted corn but never exceeded 8 percent infestation. CORN EARWORM (Heliothis zea) moths were caught as early as August 5 in blacklight traps, but major flights were not recorded at the Arlington trap until late August and early September. Infestations were not a major problem in 1957. Subterranean insects in corn fields increased in importance during 1957 due to the prolonged period in which corn seed laid in the ground before and after germination. Surveys in south central regions showed an increase of WIREWORMS from 0.4 per 100 corn seedlings in 1956 to 4.0 in 1957 and were responsible for many uneven stands of corn. SEED-CORN MAGGOT (Hylemya clicicrura) decreased from 7.4 maggots per 100 seedlings in 1956 to 1.2 in 1957. CORN ROOT APHID (Anuraphis maidi-radicis) populations were high in some southern counties. NORTHERN CORN ROOTWORM (Diabrotica longicornis) was observed feeding in corn silks August 2 in Dane, Rock and Green Counties; goose-necked stalks

were observed. PEA APHID (Macrosiphum pisi) populations in alfalfa and peas were low in southern and southwestern areas early in the season, remaining low in peas until mid-July when some treatment was required but a large portion of the crop was harvested by that time. The population in 1957 was the lowest observed for many years. Lady beetles and nabids were scarce during the pea growing season. ARMYWORM (Pseudaletia unipuncta) moth presence in light traps continued for a considerable length of time. Scattered locations of low larval populations were noted by June 28 on corn, small grain and peas. During the week of July 12, the populations in several pea fields in Green Lake, Columbia and Rock Counties became large enough to require treatment. A few small grain fields were treated. Although the spring was cool and wet, parasites prevented populations from becoming as high as expected. TOMATO HORNWORM (Protoparce quinquemaculata) and TOBACCO HORNWORM (Protoparce sexta) were less of a problem in northern and southern tobacco areas in 1957 than in 1956. An unidentified GREEN LOOPER was observed on several crops in the State and were numerous enough on peas in Sheboygan County to justify treatment. A LOOPER identified as Rachiplusia ou was observed damaging mint and tobacco during late June and early July. Potato flea beetle (Epitrix cucumeris), because of resistance to DDT, was a serious problem. Populations were not as high at the beginning of the season as in some years, but increased and later were a general problem except in northern sections. POTATO ROT NEMATODE (Ditylenchus destructor) was recovered from three fields not reported as being infested in 1956. While SPOTTED ALFALFA APHID (Therioaphis maculata) was found in several counties late in 1956, surveys in 1957 were negative indicating it had not overwintered in Wisconsin. APHIDS which transmit "yellow dwarf" virus in small grain had lower populations than in 1956.

Orchard Insects: CODLING MOTH (Carpocapsa pomonella) adults in Door County emerged June 7 compared with the emergence date of June 9 in 1956. Populations in Crawford County were light with occasional stings and new entry holes August 2. Second-brood codling moth populations were high in the Dane County area. The first APPLE MAGGOT (Rhagoletis pomonella) adult was caught June 29 in Dane County. In Door County adults were caught in early July and were less numerous than in 1956. A late flight of adults occurred on August 26 in Dane County. PLUM CURCULIO (Conotrachelus nenuphar) adults were difficult to find during the week of June 21 in Door County. Populations were moderate to heavy in cherry orchards but light in apple orchards. Crawford County infestations were light. APPLE APHID (Aphis pomi) populations were high and a serious apple orchard problem in Door County. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) adults emerged during late April and eggs hatched June 7 in Door County. FRUIT TREE LEAF ROLLER (Archips argyrospila) larvae fed before bloom in Door County. Populations were higher in 1957 than in 1956 but infestations were light in Crawford County. The larval population of EYE-SPOTTED BUD MOTH (Spilonota ocellana) was higher during late May 1957 than in 1956 in Door County. This insect was not a problem in Crawford County. CHERRY FRUITWORM (Grapholitha packardii) adults emerged in Door County June 15 to June 28. EUROPEAN RED MITE (Panonychus ulmi) populations were similar to 1956 in Door County. Populations averaged 20-25 per leaf but began to decrease in August. The first observation and identification of BLACK CHERRY FRUIT FLY (Rhagoletis fausta) was made on Door County cherries.

Truck Crop and Small Fruit Insects: Spring migrations of SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) adults were earlier in 1957 than in 1956; the first adults being collected on April 22. Population built up early in relation to the development of lettuce, carrots and celery. Aster yellows, a virus disease transmitted by this insect, appeared earlier than usual in Kenosha County carrots. By the end of the season, a high acreage of lettuce had been abandoned due to aster yellows. Infection of carrots in some Oconto County commercial fields reduced yield by 50 percent. Celery grown in the central muck region had a 30 percent infection and potatoes grown in

northern Wisconsin had a 60 percent infection. Losses caused by the six-spotted leafhopper were higher in 1957 than any year in the past decade. ONION MAGGOTS (Hylemya antiqua) infested onions by June 28. Emergence was gradual making generations indistinguishable. Infestations were common throughout the State. A high degree of infestation in Kenosha, Racine and Milwaukee Counties seriously affected over 90 percent of some commercial fields. CABBAGE MAGGOT (Hylemya brassicae) on radishes, rutabagas and turnips occurred as early as the onion maggot with heavy infestations on Shawano County radishes. IMPORTED CABBAGEWORM (Pieris rapae) adults were observed by May 17 and were more numerous than in the similar period of 1956. In 1957 there was considerable damage to untreated cabbage, especially in Outagamie County. CABBAGE LOOPER (Trichoplusia ni) was numerous by July 12 when moths caught in blacklight traps indicated a large second generation. The expected infestation occurred but damage was less than in 1956. ONION THRIPS (Thrips tabaci) populations were moderate on Kenosha County onions by June 21. This insect was troublesome for the first time in several years on onions and to a certain extent on cabbage, but in mid-July its population began to decline. STRAWBERRY LEAF ROLLER (Ancylys comptana fragariae) populations were medium to heavy in central sections but lower than in 1956. A very light infestation was reported in the northwest. ASPARAGUS BEETLE (Crioceris asparagi) was more numerous than SPOTTED ASPARAGUS BEE LE.

WHITE GRUB (Phyllophaga spp.) populations of June beetle brood A were medium to heavy throughout the State. Flights of the June beetle brood B were much lighter than 1956 flights of brood A. As early as May 24 medium to heavy populations of CUTWORMS were reported from many areas of the State. MEXICAN BEAN BEETLE (Epilachna varivestis) damage in a small Dane County area was higher than normal. Although this insect is not common in Wisconsin, its presence has been continually reported from this location. A ROOT KNOT NEMATODE was more prevalent in strawberries than in previous years. BLACK-HEADED FIREWORM (Rhopobota naevana), CRANBERRY FRUITWORM (Acrobasis vaccinii) and CRANBERRY TIPWORM (Dasyneura vaccinii) abundance in 1957 was light. Numerous RED-NECKED CANE BORER (Oberea bimaculata) adults appeared on unsprayed raspberry plantings week of June 24. Raspberry cane borer populations were lower in northwestern Wisconsin in 1957 than in 1956.

Forest, Ornamental and Shade Tree Insects: SMALLER EUROPEAN ELM BARK BEETLES (Scolytus multistriatus) were found in Sheboygan and Crawford Counties, locations not previously reported. Confirmed cases of Dutch elm disease increased from 63 in 1956 to 376 in 1957. Preparations were made to treat up to 200,000 acres of forest areas for control of JACK-PINE BUDWORM (Choristoneura pinus) in 1957 but natural control factors caused the outbreak to collapse. Treatment was applied to 18,735 acres in northwestern counties and about 7,400 acres in Oneida County. Survey showed defoliation was light except for some marginal areas of treated blocks. Eggs were difficult to find in most of the area concerned, and a control program is not anticipated in 1958. WHITE-PINE WEEVIL (Pissodes strobi) continued to cause heavy damage in northern and central plantations of white pine, jack pine and Norway spruce. Damage was common on red pine in northern areas. Damage was generally light in south and east central areas. EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) was reported from 23 counties. Damage resulted in a few heavily infested plantations and in some ornamentals. Good control resulted where recommendations were followed. A total of 3 JAPANESE BEETLES (Popillia japonica) were caught at three different locations; two in Milwaukee County and one in Racine County. One was caught in a trap at the same location where the only beetle was caught in 1956. These areas were treated. A total of 525 traps were placed in several locations. EUROPEAN ELM SCALE (Gossyparia spuria) female populations were slightly higher than for past several years in many sections. FOREST TENT CATERPILLAR (Malacosoma disstria) infestation was less in 1957, with heavy defoliation

centered in southeastern Sawyer, Price and northeastern Rusk Counties. Small areas of severe and of light general defoliation were common in the remainder of the northern aspen area. Parasitism and predation were heavy in Sawyer, Price and Oneida Counties.

SARATOGA SPITTLEBUG (*Aphrophora saratogensis*) was light to medium in northwest areas with 153 acres of heavy infestation sprayed in Douglas County. Heavy infestations on 3,879 acres of red pine plantations in the northeast area were sprayed. Most spraying was in Marinette County with smaller acreages sprayed in Oconto, Langlade, Florence and Marathon Counties. An infestation of 25-30 acres was reported from Brown County. SADDLED PROMINENT (*Heterocampa guttivitta*) populations were very low in 1957 as compared with 1956 as a result of natural factors. Moderate to heavy infestations occurred on parts of Washington Island and in isolated areas of Door County. Severe defoliation by high MAPLE WEBWORM (*Tetralopha* spp.) populations occurred in some counties in the northeast, particularly in Florence County. Many dying maples were present in areas where there had been two years of defoliation. PINE ROOT COLLAR WEEVIL (*Hylobius radialis*) heavily damaged Scotch, jack and red pine plantations in areas of light soil with high populations in northwest, central and the lower Wisconsin River Valley counties. A heavy infestation was reported from Shawano County jack and Scotch pine plantations and from red and Scotch pine shelterbelts in Buffalo County. APHID populations on many trees, shrubs and perennials were exceptionally high. Damage to honeysuckle and snowball viburnum was heavy and general, and sooty fungus which developed on aphid "honeydew" was noticeable on many pines. ELM LEAF MINER (*Fenusa ulmi*) populations were heavy prior to June 1. BOXELDER BUG (*Leptocoris trivittatus*), SPRING CANKERWORM (*Paleacrita vernata*) and FALL CANKERWORM (*Alsophila pomataria*) populations were low. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) populations were high on some ornamentals early in the season as were THRIPS. A SAWFLY (*Arge scapularis*) again appeared on elm in Pierce County and MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) was more abundant than for several years. A MOTH (*Calocalpe undulata*) was present in high numbers locally, especially Columbia County. FALL WEBWORM (*Hyphantria cunea*) and EASTERN TENT CATERPILLAR (*Malacosoma americanum*) populations were relatively low.

WALNUT CATERPILLAR (*Datana integerrima*) populations appeared to be low but perhaps were given credit for premature defoliation that may have been due to a leaf disease. Heavy populations of SNOWY TREE CRICKET (*Oecanthus niveus*) were present in several localities. Defoliation by LARCH SAWFLY (*Pristiphora erichsonii*) was more conspicuous over a larger area than in 1956. Defoliation was heavy to complete over much of northern half of State. Many tamarack stands in the east central area were infested, some heavily defoliated. Light infestations were found in Portage, Waushara and Fond du Lac Counties. FRUIT TREE LEAF ROLLER (*Archips argyrospila*) infestations were light-medium in Florence, Marinette and Langlade Counties. Larval parasitism was heavy. WALKINGSTICK (*Diaperomera femorata*) populations were relatively low with light to moderate defoliation in Marathon, Door, Shawano, Oconto, Ashland, Sawyer and Washburn Counties. Heavy defoliation was local in Marinette, Kewaunee and Bayfield Counties. A JACK-PINE SHOOT BORER (*Eucosma sonomana*) was abundant in east central area jack-pine plantations and light to medium in Sauk, Richland, Iowa, Columbia and Oconto Counties.

Insects Affecting Man and Animals: Large numbers of FRESH WATER MIDGES (*Tendipes* spp.) began emergence in the Lake Winnebago area May 8 and were a nuisance for a long period during spring and summer. High populations were also noted along Lake Pepin in early May. BITING FLIES (Tabanidae) were seen in Dane County in early June with moderate to heavy populations reported from various areas by mid-July. Build-up of HOUSE FLY (*Musca domestica*) and HORN FLY (*Siphona irritans*) populations were noted during mid-July and were troublesome until mid-August. MOSQUITOES - *Aedes vexans* emergence began on April 16 in Columbia County, and a heavy brood was observed the latter part

of May in Dane County. In Rusk County biting of *Anopheles* spp. was noted during early April and *Aedes stimulans* and *Aedes cinereus* emerged May 11. Treatment was applied in many instances to heavy mosquito populations which occurred in many localities. Medium to heavy populations of AMERICAN DOG TICK (*Dermacentor variabilis*) were reported as early as May 24 from northern and central Wisconsin. Heavy populations of a forest tent caterpillar PARASITE (*Sarcophaga aldrichii*) were reported from Price County. Major MAYFLY flights began on the night of June 9 in LaCrosse County.

Industrial, Storage, Greenhouse and Household Insects: TERMITES infested buildings in a nine block area in Sheboygan. Continued search in grain handling establishments for KHAPRA BEETLE (*Trogoderma granarium*) was negative. Occasionally COCKROACHES, CARPET BEETLES, SAW-TOOTHED GRAYN BEETLE (*Oryzaephilus surinamensis*), GRANARY WEEVIL (*Sitophilus granarius*) and CONFUSED FLOUR BEETLE (*Tribolium confusum*) were found in flour processing plants, bakeries, candy factories and similar industries. CHEESE MITES were the most important problem of cheese storage while carpet beetles were the important pest in dried milk products. FLIES were troublesome during warm weather. NEMATODES identified as *Tylenchorhynchus claytoni* commonly known as the tobacco stunt nematode, and *T. maximus* were recovered for the first time from Wisconsin greenhouses. SPIDER MITES continued to be the most serious greenhouse pest. WHITEFLIES and APHIDS were present and needed treatment from time to time. Reports of THRIPS on Easter lilies, LEAF MINERS on azaleas and CUTWORMS were received. Occasionally SCALES, CYCLAMEN MITE and MEALYBUG were a problem. Household pest numbers appeared to remain quite stable although inquiries about POWDER POST BEETLE increased.

Beneficial and Miscellaneous Insects: Wintering colonies of HONEY BEES (*Apis mellifera*) reached normal development by May 17, average colonies having 6-10 frames of brood and adequate supplies of honey and pollen in all but the northeast portion of the State. By June 7, bees had built satisfactory populations and since little nectar was available they were feeding on honey dew produced by aphids. During mid-June white, sweet and alsike clover blossoms became abundant resulting in good May buildings and bees produced a honey crop ranking fourth in the nation. Many colonies entered the winter with high populations and inadequate stores. Of 31,489 colonies inspected for American foulbrood (*Bacillus larvae*) 1,098 colonies were destroyed. During mid-July RED-ADMIRAL (*Vanessa atalanta*) were more numerous than for several years in Monroe and Juneau Counties and other sections, especially where nettles grew abundantly.

Blacklight Insect Trap Report: In 1956 it was decided to use blacklight insect traps in Wisconsin. Five traps were placed in different locations. The value indicated by results from these traps in relation to insect survey was confirmed by expansion of this program. In addition to the continuance of the operation of these traps, in 1957 additional traps were operated in new locations. The chief difference was their operation for practical use by private operators which in the main were canning companies but included some private lepidopterists. No less than 34 blacklight traps were known to be operated in 1957. Most of these submitted information.

SUMMARY OF INSECT CONDITIONS - 1957

KANSAS

Prepared by D. L. Matthew and D. E. Gates

Highlights: FALL ARMYWORM infestations were heavier during 1957 than previous years and caused more loss in corn than either CORN EARWORM or EUROPEAN CORN BORER. EUROPEAN CORN BORER increased populations caused estimated loss of \$1,428,000, four times the 1956 loss. WEBWORMS destroyed most of second alfalfa cutting for an estimated 143,000 ton loss. SPOTTED ALFALFA APHID infestations remained generally low throughout the season and although moisture levels were much higher than during 1956, high numbers of CHINCH BUGS were found in hibernation habitat. SMALLER EUROPEAN ELM BARK BEETLE distribution has now moved nearly across the State. Dutch elm disease was reported for first time. POTATO PSYLLID infestations were found for first time in Kansas.

Cereal and Forage Crop Insects: GRASSHOPPER (*Melanoplus* spp.) nymphs began emergence the last of April; however, cool and moist soil and weather conditions retarded the main hatch until the first of June. Populations then developed much as predicted for central, north central and western areas. Dominant crop-feeding species were *M. differentialis*, *M. bivittatus*, *M. bilituratus* and *M. femur-rubrum*. Extremely destructive infestations occurred in localized areas in central and north central counties. Populations were non-economic to light in southeastern counties. Rangeland species, primarily *Ageneotettix deorum*, *M. packardii*, *Mermeria* sp., *Aulocara elliotti*, and *Phliobostroma quadrimaculatum*, failed to build up to expected levels (severe to very severe) across major range areas. Heavy flights of *M. bilituratus* moved into western counties during September and October and caused extensive damage to wheat. A summary of county agent reports indicated that an estimated 1,023,120 acres were sprayed plus 616,480 acres baited for crop protection during 1957. These and other control measures gave an estimated \$12,000,000 saving to Kansas agriculture for the year. FALL ARMYWORM (*Laphygma frugiperda*) showed a marked increase and caused greater loss in corn yields than either European corn borer or corn earworm. Infestations were heavier, more widespread and more destructive than in previous years. Most corn acreage was infested and ear-drop ranged 4-30 percent in many north central and northeast fields. Earlier whorl and stalk feeding caused retarded plant growth and subsequent yield losses. WEBWORM (*Loxostege* spp.) infestations developed rapidly on second-growth alfalfa and were the highest since 1945. Although most eastern alfalfa fields were infested to some degree, heaviest populations were in central and south central areas. An estimated 143,000 tons of alfalfa hay was destroyed and there was damage to corn and sorghum seedlings in several localized areas. Although harvested corn acreage was equal to the 84-year low, yield loss from heavy EUROPEAN CORN BORER (*Pyrausta nubilalis*) infestations was an estimated \$1,428,000, four times the 1956 loss. Heaviest borer populations occurred in northeastern counties averaging 4-90 percent stalk infestation. County averages ranged 4-591 per 100 stalks. CHINCH BUG (*Blissus leucopterus*) populations developed slower than usual because of damp field conditions. Some crop loss occurred in many localized areas of the eastern half of the State. High numbers of adults were found in hibernation during the annual fall survey. County agents report controls applied to 414,730 acres resulting in an estimated \$1,484,000 saving of crops. CORN EARWORM (*Heliothis zea*) was general throughout the State in corn; however, there was practically no infestation in sorghum heads. Activity was associated with fall armyworm which caused the greatest loss. Fewer earworm moths were taken in light traps in 1957 indicating lower populations than during 1956. SPOTTED

ALFALFA APHID (Therioaphis maculata) populations increased slowly during spring and early summer and few infestations were reported as economic. Mid-summer infestations remained low generally because of high predator populations, unfavorable webworm competition, perhaps weather conditions and a later development of a fungus disease. Only a few localized fields required control measures. Few aphids could be found in alfalfa fields during December. FALSE WIREWORMS (Eleodes spp.), although present in most counties of the western half of the State, were less abundant than the previous year. Destructive infestations were reported from a few localized areas in north central counties. ARMYWORM (Pseudaletia unipuncta) continued at low levels and was not considered a problem. ARMY CUTWORM (Chorizagrotis auxiliaris) feeding was observed in southern counties in early March and developed northward across the State. Infestations were less extensive than in previous years. HESSIAN FLY (Phytophaga destructor) continued at non-economic levels. BROWN WHEAT MITE (Petrobia latens) populations were practically non-existent in previously heavily infested areas and WINTER GRAIN MITE (Penthaleus major) appeared in very light numbers in localized areas of southeastern counties. GREENBUG (Toxoptera graminum) infestations were found in a few widely scattered localized areas and were not a serious problem. PALE WESTERN CUTWORM (Agrotis orthogonia) was much less important than in 1956. Infestations were limited to extreme western counties and expected heavy larval populations failed to develop. CORN ROOTWORM (Diabrotica spp.) infestations showed a slight increase in several north central and northeastern counties, particularly in fields with continuous corn plantings where no controls have been applied. PEA APHID (Macrosiphum pisi) failed to develop destructive infestations as in the past four years. Wet cool spring weather retarded development and few economic infestations were found. CORN LEAF APHID (Rhopalosiphum maidis) infestations were rather general on corn and also in localized areas over the State on sorghum seedlings. Infestations, however, were not as widespread or severe as during 1956. ENGLISH GRAIN APHID (Macrosiphum granarium) appeared in higher numbers on wheat and barley than during 1956 but was not a serious problem. SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) was generally light throughout the eastern two-thirds of the State and as far north as Republic and Nemaha Counties. No economic infestations were found or reported.

Fruit Insects: CODLING MOTH (Carpocapsa pomonella) damage was greater than during 1956. Infestations were higher, ranging 65-80 percent infestation in some unsprayed orchards. More late-entry damage occurred than in 1956. PLUM CURCULIO (Conotrachelus nenuphar) damage was light throughout the State. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) caused considerable damage to some orchards early in the season. UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) caused severe yellowing and leaf drop early in the season in some orchards of northeast Kansas where no controls were applied. A STRAWBERRY ROOTWORM (Paria sp.) appears to be increasing in older strawberry plantings in northeast areas. First-generation STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) caused considerable damage to unsprayed fields.

Truck Crop Insects: POTATO PSYLLID (Paratrioza cockerelli) was found for the first time in Kansas on commercial and garden tomatoes in four southwest counties. This was a new record for the State with specimens collected and identified during week of July 26.

Forest, Ornamental and Shade Tree Insects: SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) distribution was extended with a new infestation at Garden City, Finney County. Thousands of elm throughout the eastern two-thirds of the State are still heavily infested and the recent finding of Dutch elm disease in Wyandotte, Johnson and Douglas Counties, further emphasizes the seriousness of beetle populations. BAGWORM (Thyridopteryx ephemeraeformis) infestations showed an even further increase throughout most central and eastern counties. GREEN-STRIPED MAPLEWORM (Anisota rubicunda) activity

continued with partial to near-complete defoliation of soft maples in many northeastern areas. Destructive populations of a SCALE (Cryptaspidiotus shastae) continued in localized areas throughout the State with heaviest infestations in central and south central areas. EUROPEAN ELM SCALE (Gossyparia spuria) infestations showed little increase in distribution or intensity. A survey of south central counties showed an abundance of a MEALYBUG (Pseudococcus juniperi) in several localized areas.

Insects Affecting Man and Animals: CATTLE GRUBS (predominantly Hypoderma lineatum) continued at moderate to heavy infestation levels and showed no appreciable increase over 1956. Much higher infestations were found on cattle shipped into the State. STABLE FLY (Stomoxys calcitrans) and HORN FLY (Siphona irritans) populations were much higher than during 1956 and caused great discomfort and harassment of livestock. HOUSE FLY (Musca domestica) appeared in somewhat higher numbers than during 1956 and continued until late fall. SCREW-WORM (Callitroga hominivorax) infestations were active throughout the State and from many areas reported to be the most severe occurrence for several years.

Stored Grain Insects: DERMESTIDS remained the number one interest in stored grain pests and showed an increase in abundance with Trogoderma glabrum the dominant species. KHAPRA BEETLE (T. granarium) has still not been found in Kansas. Populations of other stored products pests, INDIAN-MEAL MOTH, LESSER GRAIN BORERS, GRANARY and RICE WEEVILS and SAW-TOOTHED GRAIN BEETLE showed little change in infestation levels over 1956 continuing moderate numbers.

Light Traps: Four dark-light insect light traps continued in operation throughout the 1957 growing season. Particular moth flights and abundance counts were taken for ARMYWORM, PALE WESTERN CUTWORM, ARMY CUTWORM, FALL ARMYWORM and CORN EARWORM. Traps are located in Finney, Ellis, Riley, and Doniphan Counties.

Cooperators: The following entomologists made contributions at various times during the reporting season that aided in this report: R. E. Beer, J. E. Brady, C. C. Burkhardt, L. A. Calkins, L. J. DePew, E. L. Eshbaugh, H. D. Garwood, D. E. Gates, T. L. Harvey, F. A. Knapp, H. Knutson, F. A. Lawson, E. T. Jones, P. H. Marvin, R. H. Painter, W. H. Somsen, H. E. Thompson, D. A. Wilbur.

SUMMARY OF INSECT CONDITIONS - 1957

COLORADO

Reported by Colo. Ins. Detection Comm.

Wheat Insects: PALE WESTERN CUTWORM (Agrotis orthogonia), ARMY CUTWORM (Chorizagrotis auxiliaris), a WESTERN WHEAT STEM MAGGOT (Hylemya cerealis), BROWN WHEAT MITE (Petrobia latens) and GRASSHOPPERS caused some loss. Controls were effective in reducing losses. Total acreage 1,136,500; total yield 22,313,060 bu.; total loss 535,535 bu.; unit value \$2.; total value \$44,626,120; loss value \$1,071,070; acres controlled 231,959; cost of control \$463,918; savings \$4,175,262. Grasshoppers feeding on margins of fall planted wheat caused considerable damage. Bait was applied to 780,000 acres and spray to 153,800 acres. Cost of control \$225,400; savings \$654,468

Alfalfa Insects: PEA APHID (Macrosiphum pisi) and ALFALFA WEEVIL (Hypera postica) caused some loss in second cutting alfalfa. AN ALFALFA WEEVIL

PARASITE (Bathyplectes curculionis) was a factor in reducing damage. ALFALFA LOOPER (Autographa californica) and ALFALFA CATERPILLAR (Colias philodice eurytheme) were responsible for slight damage in some areas. Total acreage 654,600; total yield 1,720,474 ton; total loss 36,662 ton; acres controlled 144,335; unit value \$25; total value \$43,011,750; loss value \$841,575; cost of control \$288,670; savings \$577,340.

Field Corn Insects: CORN EARWORM (Heliothis zea) and FALL ARMYWORM (Laphygma frugiperda) were the major cause of loss. In some areas SEED-CORN MAGGOT (Hylemya cilicrura), WESTERN CORN ROOTWORM (Diabrotica virgifera) and TWO-SPOTTED SPIDER MITE (Tetranychus telarius) caused some loss of stand and yield. Total acreage 421,799; total yield 23,800,350 bu.; total loss 1,266,333 bu.; acres controlled 37,696; unit value \$1.15; total value \$27,370,402; loss value \$2,026,612; cost of control \$75,392; savings \$2,737,040.

Dry Bean Insects: Loss of bean stand due to PALE WESTERN CUTWORM (Agrotis orthogonia) and ARMY CUTWORM (Chorizagrotis auxiliaris) occurred in some areas. MEXICAN BEAN BEETLE (Epilachna varivestis) was the major problem. In southwest areas WESTERN BEAN CUTWORM (Loxagrotis albicosta) was a problem before and during harvest. Total acreage 191,050; total yield 1,666,770/100# bags; total loss 42,894/100# bags; acres controlled 39,185; unit value \$6.30; total value \$10,500,651; loss value \$269,949; cost of control \$78,370; savings \$539,898.

Potato Insects: POTATO PSYLLID (Paratrioza cockerelli) was the major pest of potatoes. Late in the growing season GREEN PEACH APHID (Myzus persicae) and POTATO APHID (Macrosiphum solanifolii) were a problem in fields being grown for seed. SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) caused considerable incidence of aster yellows. Total acreage 58,130; total yield 11,626,000/100# bags; total loss 1,478,129/100# bags; acres controlled 51,270; unit value \$3.00; total value \$39,776,700; loss value \$5,107,830; cost of control \$410,160; savings \$19,888,350.

Sugar Beet Insects: There were no general insect infestations on sugar beets. Only in localized areas were control measures necessary. PALE WESTERN CUTWORM (Agrotis orthogonia), ARMY CUTWORM (Chorizagrotis auxiliaris), SUGAR BEET ROOT MAGGOT (Tetanops myopaeformis) and BEET WEBWORM (Loxostege sticticalis) were controlled with losses of less than one percent. Total acreage 122,171; total yield 2,036,563 ton; total loss 1000 ton; acreage controlled 20,374; unit value \$11.00; total value \$22,402,193; loss value \$11,000; cost of control \$40,748; savings \$372,028.

Snap Bean Insects: Loss to snap beans was primarily due to MEXICAN BEAN BEETLE (Epilachna varivestis). Total acreage 2,200; total yield 10,350 tons; total loss 227 tons; acres controlled 2,200; unit value \$100; total value \$1,035,000; loss value \$22,700; cost of control \$13,200; savings \$517,500.

Cabbage Insects: CABBAGE LOOPER (Trichoplusia ni), CABBAGE APHID (Brevicoryne brassicae) and BEET WEBWORM (Loxostege sticticalis) caused some loss to cabbage. Total acreage 4,810; total yield 1,095,000 cwt.; total loss 48,000 cwt.; acres controlled 4,473; unit value \$1.50; total value \$1,642,500; loss value \$72,000; cost of control \$8,946; savings \$821,250.

Sweet Corn Insects: Damage to sweet corn was caused by CORN EARWORM (Heliothis zea) and FALL ARMYWORM (Laphygma frugiperda). There was some incidence of SEED-CORN MAGGOT (Hylemya cilicrura) and TWO-SPOTTED MITE (Tetranychus telarius). Total acreage 1,710; total yield 95,400 cwt.; total loss 1,794 cwt.; acres controlled 980; unit value \$3.00; total value \$286,200; loss value \$5,382; cost of control \$1,960; savings \$23,238.

Lettuce Insects: A LETTUCE LOOPER, CABBAGE LOOPER (Trichoplusia ni) & 6-SPOTTED LEAFHOPPER (Macrosteles fascifrons) caused considerable loss to lettuce. Total acreage 12,570; total yield 3,468,000 cartons; total loss 506,550 cartons; acres controlled 10,700; unit value \$3.00; total value \$10,404,000; loss value \$1,519,650; cost of control \$21,400; savings \$5,202,000.

Onion Insects: Losses to onions were caused by ONION MAGGOT (Hylemya antiqua), SEED-CORN MAGGOT (Hylemya ciliicrura) and SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons). Total acreage 8,370; total yield 2,711,000 cwt.; total loss 148,946 cwt.; acres controlled 6,057; unit value \$1.50; total value \$4,066,500; loss value \$223,419; cost of control \$36,342; savings \$1,355,499.

Pea Insects: Light losses to peas resulted from the activity of CABBAGE LOOPER (Trichoplusia ni), a LETTUCE LOOPER, ALFALFA LOOPER (Autographa californica), PEA APHID (Macrosiphum pisi) and PEA WEEVIL (Bruchus pisorum). Total acreage 3,130; total yield 3,130 ton; total loss 31 tons; acres controlled 565; unit value \$75; total value \$234,750; loss value \$2,325; cost of control \$1,130; savings \$23,475.

Tomato Insects: Losses to tomatoes in localized areas were due to TOMATO FRUITWORM (Heliothis zea), TOMATO PSYLLID (Paratrioza cockerelli) and TOMATO HORNWORM (Protoparce quinquemaculata). Total acreage 3,340; total yield 28,650 tons; total loss 573 tons; acres controlled 3,340; unit value \$24; total value \$687,600; loss value \$13,752; cost of control \$20,040; savings \$229,200.

Apple Insects: CODLING MOTH (Carpocapsa pomonella), TWO-SPOTTED SPIDER MITE (Tetranychus telarius) and CLOVER MITE (Bryobia praetiosa) were the main cause of loss to apples. Total trees 341,856; total yield 940,732 bu.; total loss 57,631 bu.; trees controlled 306,684; unit value \$1.50; total value \$1,411,098; loss value \$86,246; cost of control \$306,684; savings \$705,549.

Peach Insects: Light infestations of GREEN PEACH APHID (Myzus persicae), PEACH TREE BORER (Sanninoidea exitiosa) and PEACH TWIG BORER (Anarsia lineatella) occurred on peaches. Total trees 826,026; total yield 1,604,191 bu.; total loss 16,041 bu.; trees controlled 820,930; unit value \$1.75; total value \$2,807,334; loss value \$28,071; cost of control \$606,250; savings \$1,403,667;

Forest, Ornamental and Shade Tree Insects: Damage to forest trees was caused mainly by GR.BAS. TENT CATERPILLAR (Malacosoma fragilis), DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) and BLACK HILLS BEETLE (D. ponderosae). Ornamentals infested with SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons), ARMY CUTWORM (Chorizagrotis auxiliaris), BEEF WEBWORM (Loxostege sticticalis), PEAR-SLUG (Caliroa cerasi), OYSTERSHELL SCALE (Lepidosaphes ulmi) and GRASSHOPPERS. The insect causing the most concern on shade trees was EUROPEAN ELM SCALE (Gossyparia spuria) was

Insects Affecting Man and Animals: Mosquitoes were a source of irritation to man and animals. Milk production dropped in many dairy herds and horses could not be worked because of sores on their backs. Other insects affecting animals were COMMON CATTLE GRUB (Hypoderma lineatum), SHEEP KED (Melophagus ovinus) and LICE.

Beneficial Insects: Predators and parasites contributed considerably to the control of economic pests in 1957. Bathyplectes curculionis parasitized 50 percent of alfalfa weevil larvae. There have been high populations of predators, such as, lady beetles, lacewings, syrphids, nabids and predacious mites.

Estimated Insect Control, Cost of Control, Loss and Savings - 1957

Total crop acres	3,614,671
Total fruit trees	1,167,882
Total acres controlled	1,486,934
Total trees controlled	1,111,684
Total crop value	\$170,099,290
Total loss value	\$ 7,900,303
Total control cost	\$ 2,598,610
Total savings	\$ 39,225,764

Values given are estimates only for the crops included in the report.

SOME INSECT LOSS ESTIMATES FOR 1957

In recent years a concerted effort has been made to obtain loss figures on insect damage. Many loss estimates have been included in the text of the State summaries for 1957. In addition, the information below was submitted in tabular form from Maryland, Ark., New Jersey and Pennsylvania. During the coming season it is suggested that particular emphasis be pointed by all workers toward accumulating more specific data on insect damage to crops, forest and livestock. Efforts in this direction will be greatly appreciated.

STATE - Pennsylvania		Total Acreage	Total Production	Animals Treated	Acreage	Cost Treatment	Submitted by J. O. Pepper Estimated Saving
Crop	Insect(s)	County		Animals treated			
Dairy	Biting flies	All	946,000 cows	446,000		\$223,000	\$2,051,600
Legume	Leafhopper	All	200,000	Acreage treated		\$300,000	\$1,110,000
Hay	Spittlebug	All	2½ million	1 million		\$3 million	\$7,095,000

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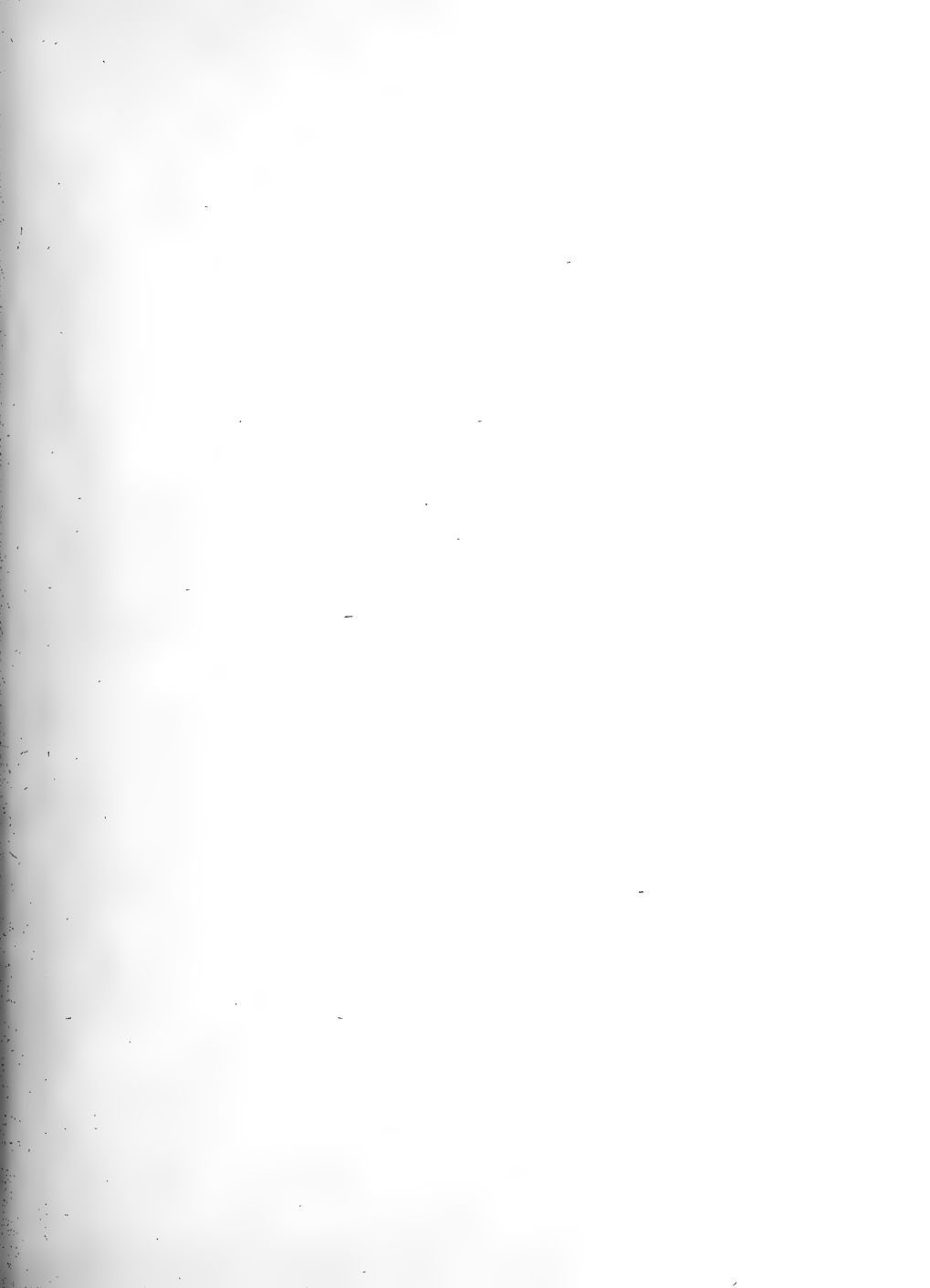
STATE - New Jersey		Total Acreage	Total Production	Unit Value	Total Value	Estimated % Loss	Unit Loss	Present Market Value	Estimated Treatment	Estimated Saving	
Crop	Insect(s)	County							Cost Treated	Value Saved	
Alfalfa	Alfalfa weevil, spittlebug, pea aphid	All	215,000 tons	\$50	\$10,750,000	10%	21,500 tons	1,075,000	80,000	\$200,000	\$4,100,000
Peach	Plum curculio, oriental fruit moth	All	2,000,000 bu.	\$2.5	\$5,000,000	5%	250,000 bu.	625,000	100%	\$70,000	\$2,000,000

Submitted by L. G. Merrill, Jr.

STATE - Maryland

Submitted by Wallace C. Harding, Jr.

Crop	Insect(s)	County	Total Acreage	Total Production	Unit Value \$	Total Value \$	Est. Loss %	Unit Loss	Present Market Value \$	Acres Treated	Cost Treatment \$	Estimated Saving \$
alfalfa	alfalfa	All	103,000	indicated	34.60 per ton	6,886,597	7%	13,930 tons	\$481,978	85,000	367,200 (4.32 an acre)	1,103,300 based on a saving of $\frac{1}{2}$ ton per acre
weevil, meadow spittlebug, pea aphid	except Garrett			1937 tons 199,000								
tobacco	green peach aphid, hornworms, flea beetles, tobacco budworm	Anne Arundel, Calvert, Prince Georges, St. Marys	37,000	32,375,000 lbs.	.50 per lb.	16,187,500	6%	1,942,500 lbs.	\$971,250	28,000	140,000 (\$5.00 per acre includes saving of aircraft treatments) per acre	2,520,000 based on a saving of 200 lbs. per acre
corn for grain	armyworm, European corn borer, fall army-worm, sap beetles	All	336,000	11,760,000 bushels	1.31 per bushel	15,405,600	9%	1,058,400 bushels	\$1,386,504	little if any		
corn (for grain)	European corn borer	All	336,000	11,760,000 bushels	1.31 per bushel	15,405,600	1.8%	211,680 bushels	\$277,301	little if any		
												Damage from European corn borer alone
STATE - Arkansas												
cotton	Boll weevil, Bollworm, Aphids, Mites	All	1,130,000	985,000 bales	\$1.55/bale	152,675,000	7 $\frac{1}{2}$ %	73,875 bales	\$11,450,625	1,100,000	15,400,000	\$62,150,000
corn	European corn borer, SW corn borer, Fall armyworm, Corn earworm, Sugarcane beetle	All	516,000	13,932,000 bu.	\$1.25/bu.	17,415,000	20%	2,786,000 bu.	\$3,483,000	2,000	\$4,000	\$12,000
												Submitted by W. P. Boyer





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MARCH 21, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

- SUGARCANE BORER loss estimates for 1957 in Louisiana and Florida. (p. 209).
- ALFALFA WEEVIL active in North Carolina and Delaware. (p. 209).
- Heavy winter carryover of PEAR PSYLLA in Chelan County, Washington, and reported for first time in El Dorado County, California. (p. 211).
- SEED-CORN MAGGOT more abundant in Washington than in 1957. (p. 212).
- BOLL WEEVIL winter survival survey in Louisiana. (p. 212).
- STORAGE-GRAIN PEST survey in Oklahoma. (p. 213).
- IMPORTED FIRE ANT found in new counties in Florida, Louisiana, South Carolina and Texas. (p. 214).
- CORRECTIONS. (p. 215).
- ADDITIONAL NOTES. (p. 215).
- SUMMARY OF INSECT CONDITIONS - 1957 - New Hampshire (p. 216), Arkansas (p. 217), Texas (p. 221), Ohio (p. 223).
- Distribution of PEAR PSYLLA. (p. 228).
- INSECTS not known to occur in the United States. (p. 229).

WEATHER BUREAU 30-DAY OUTLOOK

MID-MARCH TO MID-APRIL 1958

The Weather Bureau's 30-day outlook for mid-March to mid-April calls for temperatures to average below normal over the western half of the nation with greatest departures in the southwest quadrant. In the eastern half of the country temperatures are expected to undergo large week to week fluctuations but will average slightly above normal in New England, the upper Great Lakes Region and the extreme Southeast, but slightly below normal in the remaining area. Precipitation is expected to exceed normal over most of the nation except for near or slightly below normal amounts from the Appalachians eastward, in states bordering the Great Lakes and over the Pacific Northwest.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING MARCH 17

A fairly constant circulation pattern prevailed throughout the period. High pressure, with its main center over northern Canada, extended diagonally from east of the Divide into the Gulf States. Low pressure situations were mainly centered over California, southwest of the Texas Border, in the Gulf of Mexico, and east of New England. One low center in the Gulf intensified on Wednesday, and moved across the Southeastern States and up the Atlantic seaboard reaching the northern coast by the weekend. As a result of this storm, heavy snows fell on eastern portions of the central and southern Great Plains, eastward into the Ohio Valley, and along the coast from northern Virginia into New England. Snowfalls ranged up to 7 inches in Oklahoma, and a 6-inch fall was observed at Lubbock, Texas. In the Russell-Hill City area of Kansas, new falls of 5 to 7 inches brought ground depths up to as much as 18 inches. One-foot falls were common in eastern New York, and up to 2 feet fell in the central Catskills. New England, particularly southern and central, was hardest hit as a result of the gale force winds which accompanied the storm in that area. Snowfalls were as much as 20 inches in parts of northwestern Connecticut, traffic was interrupted, and widespread phone and power failures resulted.

A new storm which developed over central Texas late in the period brought heavy snows from the central Plains to Missouri on Monday, and rain across Georgia to the east coast with snow to the north by Tuesday morning. Weekly precipitation totals were moderate to heavy in the above mentioned areas, also in California with the exception of the extreme north and the southwestern desert regions, and in central portions of Florida. In the latter State, weekly amounts exceeded 6 inches at several points along the west coast and in the Lake Okeechobee area. Precipitation was generally light in other areas, except for isolated locations. Cold weather prevailed in most sections of the country, and only in the extreme northeast portion of the Great Plains, the northern Lakes Region and New England were weekly temperatures above normal. In Kansas, where departures for the week were 10° to 18° below normal, Goodland reported the coldest week of this winter season. Just prior to the weekend, freezing temperatures extended into northern parts of the western Gulf States. On Monday morning the snow cover at lower elevations included mainly the Dakotas, Nebraska, Kansas, southwestern Missouri, the extreme northern Lakes region, western Pennsylvania, New York and New England. The Mississippi River was reported open to navigation at Winona, Minnesota, and LaCrosse, Wisconsin, on the 16th, and at Guttenberg, Iowa on the 15th. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - DELAWARE - First statewide survey showed average of 0.85 borers per infested stalk. Winter mortality averaged 21.6 percent. (McCreary, Conrad). SOUTH DAKOTA - A check indicates an average of 84 percent survival of overwintering larvae in fields surveyed in Brookings County. (Hantsbarger).

GREENBUG (*Toxoptera graminum*) - NEW MEXICO - No infestations in grain fields in eastern area. (N. Mex. Coop. Rept.). TEXAS - Present on wheat February 23-28 in Castro, Deaf Smith and Parmer Counties. Infestation was light, 0-12 per linear foot, with 1 field in Parmer County having 20 per linear foot of row. Light infestation in 1 field in Taylor County. (Daniels). Medium infestation on volunteer oats in Kaufman and Rockwall Counties. (Hawkins, Randolph). A 25-acre field infested, with some spots showing severe damage, Brazos County. (Turney).

Sugarcane Borer Loss Estimates for 1957: LOUISIANA - Sugarcane borer infestation in Louisiana's sugarcane crop averaged 22 percent of the joints bored. The crop loss is estimated to be 16.5 percent. As the crop in this State had a value of about \$46 million, the monetary loss amounted to approximately \$7.5 million. The 1957 infestation may be compared with 14 percent in 1956, 24 in 1955, 20 in 1954, 28 in both 1953 and 1952, and an average of 22 for the 5-year period. FLORIDA - In Florida the infestation remained near the same low level. Around one percent of the joints were bored in the Okeechobee area and infestation in the Fellsmere area was the lowest in several years. Loss caused by the borer in Florida last year is estimated at about \$500,000. (Ent. Res. Div. and States Coop.).

WINTER GRAIN MITE (*Penthaleus major*) - TEXAS - Light infestation on oats in Rockwall and Hunt Counties. (Turney).

SAY STINK BUG (*Chlorochroa sayi*) - CALIFORNIA - Heavy infestations in barley in San Diego County. (Cal. Coop. Rept.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - TEXAS - Small numbers infesting barley in Hunt County. (Hawkins). Large infestations on small grains in Kaufman County. (Randolph).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - DELAWARE - Winged forms fairly common on early cereals in eastern Kent and central Sussex Counties. Few wingless forms present. (McCreary, Conrad).

ALFALFA WEEVIL (*Hypera postica*) - NORTH CAROLINA - Larval feeding observed in late January in northern Wake County and some fields now being severely damaged by one-half to two-thirds mature larvae. (Wells, Miller). Larvae infesting white clover in Union County. (Spyhalski, Farrier). VIRGINIA - No evidence of larvae hatching or adult activity. (Morris). DELAWARE - First-instar larvae fairly common on alfalfa in eastern Sussex County. Second-instar larvae less common. (McCreary, Conrad).

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - CALIFORNIA - Local heavy infestation on clover in Orange County and heavy on alfalfa in Santa Paula area of Ventura County. (Cal. Coop. Rept.).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Very abundant in an alfalfa field near Roswell, Chaves County. (N. Mex. Coop. Rept.).

PEA APHID (*Macrosiphum pisi*) - DELAWARE - Few wingless adults and nymphs noted in buds of alfalfa in eastern Sussex County. (McCreary, Conrad). TEXAS - Infestation on vetch averaged 12-15 per 100 sweeps in Kaufman County. (Randolph).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Present in most fields in southern and eastern areas, but apparently not building up. (N. Mex. Coop. Rept.). TEXAS - Infestation light on alfalfa in Rockwall County (Hawkins) and in Burleson County (Randolph).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Averaged 2-3 per 100 sweeps on alfalfa in Kaufman County. (Randolph).

SOYBEAN CYST NEMATODE (Heterodera glycines) - Three new infestations involving 390 acres, all outside present quarantined area, found in Mississippi County, ARKANSAS. In NORTH CAROLINA, an additional infested property of 195 acres found in Camden County. Inspections in Bolivar, Coahoma, Desoto, Panola, Sunflower, Tunica and Washington Counties, MISSISSIPPI, were negative. (PPC, Sou. Reg., Feb. Rept.). The mobile field crew in southwestern MISSOURI has completed soil sampling in 3 counties. Viable cysts were recovered from cotton gin trash at one of the Caruthersville, Missouri, gins. Twenty-one Heterodera glycines cysts were found in the flotsam of the material washed. Other cysts included H. cacti and H. schachtii were recovered from samples of trash from other gins. (PPC, Cent. Reg., Feb. Rept.).

FRUIT INSECTS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - A total of 25,197 traps were in operation during February. Plans are to increase number to 34,000 in summer months. At close of February, it has been 94 days since last Mediterranean fruit fly was caught in State. Last aerial application of bait spray applied on Sneads Island and Manatee County, Florida, February 25. The last State quarantine restriction against the fly in Florida was lifted on this date. All areas had been previously released from Federal quarantine May 21, 1957. Two additional ground applications will be applied at weekly intervals at focal point of last infestation as added protection. (PPC, Sou. Reg., Feb. Rept.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Inspections of 1,313 traps on 566 properties in Baja California and Sonora during February were negative. (PPC, Mex. Reg.). TEXAS - One adult female trapped in orchard in Hidalgo County on February 12, apparently without eggs. Only two Mexican fruit flies trapped this season compared with 87 for same period in 1957. Traps were taken out of operation in lower Rio Grande Valley at end of February. (PPC, Sou. Reg.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Light infestations found on 17 new properties during February in Tamaulipas, Nuevo Leon and Sonora. A heavy infestation was reported in much of city of Los Mochis, Sinaloa. Parasitism in city is extremely low. Parasites are controlling citrus blackfly well at Mazatalan, Sinaloa and in States of Jalisco and Nayarit. TEXAS - Limited inspection in Laredo, Webb County, was negative. (PPC, Sou. Reg., Feb. Rept.).

BLACK PEACH APHID (Anuraphis persicae-niger) - WASHINGTON - Heavy infestation on limbs of 2-year old peach trees near Sawyer, Yakima County, week of February 23. (Luce).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Control work for 1958 completed March 10 with the spraying of 51 city blocks. Infestation covered 22 city blocks in Sacramento, Sacramento County. (Cal. Coop. Rept.).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Eggs began hatching about January 31 on peach trees at Parker, Yakima County. (Hagel).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - WASHINGTON - Oviposition observed in Wenatchee area, Chelan County. (Burts, March 4).

PEAR PSYLLA (*Psylla pyricola*) - WASHINGTON - Heavy winter carryover in Wenatchee area, Chelan County. Oviposition observed on March 4. (Burts). CALIFORNIA -- Reported for first time from El Dorado County. A light infestation of eggs occurred in 5 out of 6 locations in both commercial orchards and on abandoned trees. (Cal. Coop. Rept.).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - WASHINGTON - Causing severe damage on cherry trees in Wenatchee area and in other areas of Chelan County. Counts indicate 80 percent winter survival. (Anthon).

BURROWING NEMATODE (*Radopholus similis*) - FLORIDA - During February, 15 groves were found infested for first time. Total of 114 new groves found infested since July 1, 1957. Two ornamental nurseries and 2 other properties found infested during February. (PPC, Sou. Reg.).

JAPANESE BEETLE (*Popillia japonica*) - Plans for treatments of infestations at East St. Louis and Sheldon, ILLINOIS, and Fort Madison, IOWA, are proceeding, with completion of operation scheduled in early March. In MICHIGAN 2,000 traps are to be used in Detroit area and 1,400 in the Grand Rapids area during the 1958 season. (PPC, Cent. Reg., Feb. Rept.).

TRUCK CROP INSECTS

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Fifteen new infestations found in St. Joseph, Tensas Parish during February. MISSISSIPPI - Four infestations found in Jefferson Davis County and four in George County. Surveys in Jones and Rankin Counties were negative during February. ALABAMA - Sixty properties in Geneva County, 14 in Conecuh County, and 11 in Mobile County, were released from quarantine during February. (PPC, Sou. Reg.).

CABBAGE APHID (*Brevicoryne brassicae*) - GEORGIA - Light to moderate infestations on cabbage, turnips and collards in Colquitt, Thomas, Brooks and Cook Counties. (Johnson, March 11). CALIFORNIA - Light infestation on cabbage and cauliflower generally throughout Orange County with medium infestations in some areas. (Cal. Coop. Rept.).

GREEN PEACH APHID (*Myzus persicae*) - WASHINGTON - A summer viviparous form was found on turnip on February 21 at Union Gap, Yakima County. Viviparous forms survived the winter in very low numbers. (Schopp).

LESSER BULB FLY (*Eumerus tuberculatus*) - WASHINGTON - Large numbers overwintered as larvae in cull onion and had not pupated on February 20. (Woodworth). IDAHO - Maggots infesting overwintering onions in southwestern areas. (Scott).

ONION MAGGOT (*Hylemya antiqua*) - WASHINGTON - Caused heavy damage on winter onions during fall of 1957 in the Walla Walla and Pasco areas. Nearly all specimens were still pupating on February 20, and puparial counts indicated that this species was less abundant in the Walla Walla area, Walla Walla County, and more numerous in the Pasco area, Franklin County, than at same time in 1957. (Woodworth). IDAHO - First adults of season for southwestern area were collected February 20. Many larvae overwintered in onions in the field and had pupated by February 20. (Scott).

PAINTED-LADY (*Vanessa cardui*) - CALIFORNIA - Heavy populations in old mustard and broccoli planting in Santa Barbara County. (Cal. Coop. Rept.).

COWPEA WEEVIL (*Callosobruchus maculatus*) - CALIFORNIA - Heavily infesting peas in the Reedley area of Fresno County. (Cal. Coop. Rept.).

PEA APHID (Macrosiphum pisi) - WASHINGTON - Eggs hatching by January 27, almost 2 weeks earlier than usual in Walla Walla area, Walla Walla County. (Cook).

SEED-CORN MAGGOT (Hyalemya cilicrura) - WASHINGTON - Adults active February 20 in Walla Walla area and approximately 5 times as abundant as at same time in 1957. Damage to onions in this area has occurred in fields in which maggots were present at time of transplantation. (Woodworth).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - OREGON - Overwintering numbers were moderate in or near raspberry fields in Linn County, March 9. Fields surveyed were those heavily infested in 1957. (Rosenstiel).

TOBACCO INSECTS

MOLE CRICKETS - GEORGIA - Light infestations on tobacco plant beds in Colquitt, Thomas, Brooks, Berrien, Coffee and Bacon Counties. (Johnson, March 12).

SPRINGTAILS - GEORGIA - Moderate infestations on tobacco plant beds in Bacon County. (Johnson, March 13).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Moderate infestations on tobacco plant beds in Colquitt, Berrien and Coffee Counties. (Johnson, March 12).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light to moderate infestations on tobacco plant beds in Tift, Colquitt, Thomas, Brooks, Cook, Berrien, Coffee, Bacon, Appling, Tattnall and Candler Counties. (Johnson, March 12).

COTTON INSECTS

Boll Weevil Winter Survival Survey: LOUISIANA - Collections of surface woods trash February 24 to March 5 in the northeast area showed 2,260 weevils per acre in East Carroll, 1,856 in Madison and 323 in Tensas Parishes, with an average of 1,480 for the three parishes. Compared with the fall population of 8,043 per acre, this gives a winter survival of 18 percent. Although the winter survival is much lower than in 1956, the population is not much lower, due to the heavy fall population. (Smith et al.).

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - Inspections of gin trash and blooms in Culiacan, Sinaloa zone, were negative. Surface debris inspections in States of Tamaulipas, Nuevo Leon, Coahuila and Chihuahua indicate a very light carry-over compared with average of previous years. (PPC, Mex. Reg., Feb. Rept.). OKLAHOMA - Inspection of 3 lint cleaners on February 26 revealed 5 larvae in Tillman County. (Fed.-State PBW Comm.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - Inspections were conducted during February in 45 establishments in coastal areas of VIRGINIA, 55 over State of NEW JERSEY, and 4 in Philadelphia district of PENNSYLVANIA. All inspections negative. (PPC, East. Reg.). Seven inspections in TENNESSEE and 254 in TEXAS were negative. (PPC, Sou. Reg., Feb. Rept.). MEXICO - Eight new infestations found in Mexicali Valley of Baja California. (PPC, Mex. Reg.). Ninety-four bins were inspected in NEBRASKA, and 6 inspections were made in WISCONSIN. In addition, one inspection was made in INDIANA, and one in MINNESOTA. All inspections in central region were negative. (PPC, Cent. Reg., Feb. Rept.).

Stored-grain Pest Survey, Oklahoma: Inspection of 25 feed and seed establishments in north central part of the State showed RICE WEEVIL heavy in 1, light in 2; PEA WEEVIL severe in 4, light in 5; COWPEA WEEVIL severe in 1; LESSER GRAIN BORER severe in 1, heavy in 1; RED FLOUR BEETLE heavy in 1, light in 1; SAW-TOOTHED GRAIN BEETLE heavy in 1; CADELLE light in 1, occasional in 3; DERMESTIDS heavy in 1, light in 9, moderate in 1, occasional in 2; YELLOW MEALWORM moderate in 1, light in 2, occasional in 1; INDIAN-MEAL MOTH severe in 1, heavy in 2, moderate in 3, light in 7. No pests were found in 1 mill. Grains inspected included milo, kafir, hegari, rye, oats, corn, millet, flax, lespeveda, fescue, ryegrass, rape vetch, cowpeas, mixed peas, Austrain winter peas, mungbeans, and Bermuda and Sudan grasses. (Coppock, Hatfield).

BLACK CARPET BEETLE (*Attagenus piceus*) - ALABAMA - Infesting powdered milk in Montgomery County. Det. H.G. Scott. (CDC Ent. Mus.).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - DELAWARE - Collected in cereal products in New Castle County. (McCreary, Conrad).

LESSER GRAIN BORER (*Rhyzopertha dominica*) - OREGON - Found in 2 grain elevators the week of March 9 in Malheur County. (Chinn).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

GYPSY MOTH (*Porthetria dispar*) - NEW YORK - No new egg clusters found during February at 31 trap sites on Long Island where males attracted during summer of 1957. No infestations found in Poughkeepsie district during February. Scouting results in NEW JERSEY continued negative. (PPC, East. Reg.).

TURPENTINE BEETLES (*Dendroctonus* spp.) - TEXAS - Active in Houston, Trinity and Orange Counties. (Gaines).

A PINE RED MITE (*Oligonychus milleri*) - CALIFORNIA - Heavy infestation on pine trees in Maricopa, Kern County. (Cal. Coop. Rept.).

FLORIDA WAX SCALE (*Ceroplastes floridensis*) - VIRGINIA - Medium to heavy on holly plants at Langley Air Force Base. (Amos).

FORBES SCALE (*Aspidiotus forbesi*) - VIRGINIA - Heavy on holly plants in Capitol Square, Richmond. Det. H. Morrison. (Miller, February 18).

OLEANDER SCALE (*Aspidiotus hederæ*) - CALIFORNIA - Infestation heavy on Colorado spruce at Menlo Park in San Mateo County and medium on rhododendrons at Saratoga in Santa Clara County. (Cal. Coop. Rept.).

PAINTED-LADY (*Vanessa cardui*) - CALIFORNIA - Heavy on malva in the Niland area of Imperial County and general in the Mettler area of Kern County. (Cal. Coop. Rept.).

ROSE APHID (*Macrosiphum rosæ*) - WASHINGTON - Colonies increasing on developing rose shoots at Sumner, Pierce County. (Doucette, February 18).

SAY STINK BUG (*Chlorochroa sayi*) - CALIFORNIA - Heavy infestations on sand verbena reported from Imperial County. (Cal. Coop. Rept.).

SLUGS - WASHINGTON - Unusually mild temperatures and wet weather encouraging slug activity in western areas. Emerging shoots of lilies, delphinium and other perennials are being extensively damaged. (Doucette).

A TIP MOTH - TEXAS - Adults emerging in Nacogdoches County and all counties to the south. (Gaines).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.) - VIRGINIA - Averaged 15 plus per control animal in a herd in Greene County March 6. Of 7 taken, 4 were *H. bovis* and 3 were *H. lineatum*. (Rowell, Turner). Average per control animal in a herd in Russell County was 16 plus on March 14. Of 19 taken, 16 were *H. bovis* and 3 *H. lineatum*. (Turner, Rowell, Morris). Three *H. bovis* were received from Fluvanna County and 6 *H. bovis* and 1 *H. lineatum* from Spottsylvania County. (Turner, Smith, Kash). SOUTH DAKOTA - Counts on untreated cattle in Meade County showed an average of 13 grubs per head on 103 calves, 7 per head on 11 heifers and 4 per head on 51 cows. (Lofgren).

MOSQUITOES - CALIFORNIA - First-brood *Aedes vexans* present in standing water from recent heavy rains. If heavy rains continue second and third-broods will be a high nuisance factor to communities this spring. *Culex tarsalis* and *Anopheles freeborni* larvae are present. Season is approximately 2 weeks early but use of larvicides and drainage promise good control for these 2 species. (Cal. Coop. Rept.).

BENEFICIAL INSECTS

PREDATORS - TEXAS - Lacewings and lady beetles numerous in small grain and vetch fields. (Randolph).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - Counties found infested for the first time during February, 1958, were Manatee County, FLORIDA; Assumption and Concordia Parishes, LOUISIANA; Spartanburg County, SOUTH CAROLINA; and Liberty and Henderson Counties, TEXAS. Harris and Smith Counties, TEXAS were reported reinfested during the month. (PPC, Sou. Reg., Feb. Rept.). Acres treated in eradication program to March 7, 1958 by States is as follows: Alabama, 12,340; Arkansas, 11,219; Florida, 3,525; Georgia, 53,978; Louisiana, 14,851; Mississippi, 3,456; North Carolina, 82; South Carolina, 212; Texas, 1,519. Total acres treated is 101,182. Treatment of infested acreage in Hardin, Henderson, Jasper, Jefferson and Smith Counties, Texas has begun. (PPC, Sou. Reg., Mar. 7).

ANTS - NEW MEXICO - Continue to be a nuisance in homes throughout State. (N. Mex. Coop. Rept.).

BOXELDER BUG (*Leptocoris trivittatus*) - DELAWARE - Specimens received from Kent and Sussex Counties. (McCreary, Conrad). UTAH - Activity diminished by return of cold weather. (Knowlton).

CARPET BEETLES - UTAH - Damaging carpets and woolen clothing in a home at Murray, Salt Lake County. (Knowlton).

CLOVER MITE (*Bryobia praetiosa* complex) - NEW MEXICO - Continue to be a nuisance in homes throughout State. (N. Mex. Coop. Rept.). UTAH - Activity diminished by return of cold weather. (Knowlton). TEXAS - Still entering homes in southwestern section of Amarillo, Potter County. (Russell).

EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) - NORTH CAROLINA - Heavy damage to bannisters of wooden bridge in Wake County. (Greene, Wray).

A TROPICAL SUBTERRANEAN TERMITE (*Coptotermes formosanus*) - CALIFORNIA - Found in a television cabinet in a home in Oakland, Alameda County, which was

shipped from Hawaii. This is second report of this termite in the State. The cabinet was fumigated to eradicate the termites. (Cal. Coop. Rept.).

CORRECTIONS: CEIR 8(10):168 - CATTLE GRUBS - VIRGINIA - Should read ----- 33 percent *H. bovis*, ---- . CEIR 8(10):165 - AN APHID - OKLAHOMA - Should read (*Rhopalosiphum subterraneum*). CEIR 8(10):166 - CABBAGE LOOPER and GREEN PEACH APHID - CALIFORNIA - Should read ---- Capistrano area, Orange County.

ADDITIONAL NOTES

ALABAMA - WHITE GRUBS particularly abundant in some areas of sod in Lee County. HOG LICE were numerous in one herd of swine in Lee County. Processing of woods trash samples revealed larger numbers of a LADY BEETLE (*Coleomegilla fuscilabris*). No BOLL WEEVILS were found.

LIGHT TRAP COLLECTIONS

	Hel. zea	Pseud. unip.	Diat. cramb.	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subt.	Prod. ornith.
<u>FLORIDA</u>								
Monticello 3/12		8						
Quincy 3/10		10			2			
<u>LOUISIANA</u>								
Baton Rouge 3/8-13		7				5	5	1
Franklin 3/5-11		3			4	1	6	5
<u>TEXAS</u>								
Brownsville 2/16-21, 3/2-8	1	140		103	38	82	73	2
<u>SOUTH CAROLINA (County)</u>								
Charleston 3/10-16		13	2		5			1

SUMMARY OF INSECT CONDITIONS - 1957

NEW HAMPSHIRE

Prepared by J. G. Conklin

Highlights: The effects of the prolonged drought were especially noticeable on certain forest trees, particularly hemlock and fir, with some trees showing mortality and invasion by BARK BEETLES and BORERS. Deterioration of sugar maples, especially trees bordering highways, was especially noticeable. To some extent this reflects earlier attack by the BLEEDING CANKER FUNGUS, the effects of drought and apparently some effect from excessive salting of highways during the winter. Many trees are now being invaded by BORERS. An unusual outbreak of OAK CATERPILLARS involving three species, SPINY OAKWORM and RED-HUMPED OAKWORMS occurred in Carroll County. GYPSY MOTH was unusually scarce as a result chiefly of natural control factors. BIRCH LEAF MINER appeared much earlier in the season than normal. CUTWORMS were unusually troublesome in truck areas. The TWO-SPOTTED SPIDER MITE was unusually troublesome, apparently as a result of favorable weather conditions.

Cereal and Forage Insects: EUROPEAN CORN BORER (*Pyrausta nubilalis*) was moderately abundant and troublesome in untreated or poorly treated fields. STALK BORER (*Papaipema nebris*) was more troublesome than usual causing noticeable damage to corn and tomatoes.

Fruit Insects: PLUM CURCULIO (*Conotrachelus nenuphar*) was present in about usual numbers but was adequately controlled in commercial orchards. APPLE MAGGOT (*Rhagoletis pomonella*) was present in usual numbers with somewhat greater activity than normal in early August. CODLING MOTH (*Carpocapsa pomonella*) was not particularly troublesome in commercial orchards. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) was unusually troublesome late in the season. EYE-SPOTTED BUD MOTH (*Spilonota ocellana*) was present in about usual numbers with noticeable injury occurring only in poorly sprayed orchards. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was the most abundant species in apple orchards, particularly after mid-summer, and caused especial damage in certain raspberry and strawberry plantings. BROWN-TAIL MOTH (*Nygmia phaeorrhoea*) was found to be building up in isolated spots which were largely eliminated by web removal. An unusual occurrence of PEAR LEAF BLISTER MITE (*Eriophyes pyri*) in a commercial Baldwin orchard was observed in Merrimack County.

Truck Crop Insects: For the second successive year MEXICAN BEAN BEETLE (*Epilachna varivestis*) was relatively scarce throughout the State. CUTWORMS were unusually active in June and early July. BLACK CUTWORM (*Agrotis ypsilon*), in particular, caused considerable damage to cucumbers and tomatoes. IMPORTED CABBAGEWORM (*Pieris rapae*) was present in about usual numbers but CABBAGE LOOPER (*Trichoplusia ni*) was much less troublesome than in 1956. CORN EARWORM (*Heliothis zea*) was less troublesome than in 1956.

Forest, Ornamental and Shade Tree Insects: ELM LEAF BEETLE (*Galerucella xanthomelaena*) continues to be a troublesome pest in communities where little or no attempts are made to spray for its control. Many complaints were received from housewives troubled with the overwintering beetles in early spring. An area of approximately 200 acres of oak woodland in Carroll County was defoliated from 50 to 100 percent by the activities of the SPINY OAKWORM (*Anisota stigma*), chiefly, although RED-HUMPED OAKWORMS (*Symmerista* spp.) were also present in modest numbers. An additional 200 acres showed defoliation somewhat less than 50 percent. A limited survey indicated that SPRUCE BUDWORM (*Choristoneura fumiferana*) was present in relatively small numbers on spruce

and fir in Coos County. BIRCH LEAF MINER (*Fenusa pusilla*) adults appeared in Durham as early as May 5 which is much earlier than normal. TWIG PRUNER (*Elaphidion villosum*) was more prevalent than usual in oak stands in southern New Hampshire.

Miscellaneous Insects: Specimens of EUROPEAN EARWIG (*Forficula auricularia*) were received from several localities during the summer months. Complaints of TERMITES were received in about the usual numbers. An unusual infestation of a GRASS SCALE, tentatively identified as a COTTONY-GRASS SCALE (*Eriopeltis festucae*) occurred on native bent grasses in commercial orchards at Hollis and Durham.

SUMMARY OF INSECT CONDITIONS - 1957

ARKANSAS

Reported by W. P. Boyer

Highlights: Very heavy rainfall in 1957 had a direct effect on insect populations. Many stations reported 80 inches of rainfall, with 48-50 inches being normal. Heavy summer rainfall was very important in building up one of the worst BOLL WEEVIL infestations in many years. This same situation is no doubt important in the low number of GRASSHOPPERS in the summer of 1957 and the lower than average numbers of CHINCH BUG in hibernation in the fall. This condition could be one of the causes of fewer SPIDER MITES on cotton in 1957 than in 1956. The excessive rainfall coupled with cooler than normal temperatures contributed to heavier than normal infestations of COTTON APHID. Recovery of PINK BOLLWORM larvae was very minor compared to 1956. SOUTHWESTERN CORN BORER advanced eastward across the State, while EUROPEAN CORN BORER moved southward across Arkansas into Louisiana. IMPORTED FIRE ANT was fought on a concentrated basis in one area, and there is good evidence of successful eradication. Wet weather and other factors caused a decrease in SPOTTED ALFALFA APHID to the point that none have been found for several months. FALL ARMYWORM was early and more numerous and destructive than in any past year. A big increase in sorghum acreage has brought about the need for concentrated work on sorghum insects. NANTUCKET PINE MOTH and SAWFLIES caused concern as pests of timber. THREE-CORNERED ALFALFA HOPPER threatened to become a pest of soybeans in 1957.

Cereal and Forage Insects: SPOTTED ALFALFA APHID (*Therioaphis maculata*) was common on alfalfa in non-economic numbers throughout the State until mid-summer, but during the last half of the year could not be found. PEA APHID (*Macrosiphum pisi*) infestations in general were of non-economic importance though present during spring and fall. Infestations of THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) on alfalfa were more common than in 1956 and comparable to 1955. Losses have not been evaluated, but control would probably pay. This pest also attacked soybeans in 1957 with some stand reduction and lodging of large plants. BEAN LEAF BEETLE (*Cerotoma trifurcata*) numbers on soybeans continued to decline. GARDEN WEBWORM (*Loxostege similalis*) caused some damage to cotton and soybeans with control measures being applied in scattered areas. GRASSHOPPERS (*Melanoplus* spp.) were of no economic importance except in a very few cases along canal banks in the northeast. Damage was to cotton and soybeans. FALL ARMYWORM (*Laphygma frugiperda*) infestations were very severe throughout the year, appearing earlier than usual and remaining until cold weather. Damage occurred on corn and sorghum, both to the plant and grain. Some control measures were applied but past experience had shown that in most cases control did not pay. On the other hand the

pest became more serious than expected, and it was apparent that losses resulted from lack of control. Other than fall armyworm, SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) and EUROPEAN CORN BORER (Pyrausta nubilalis) were the principal pests of corn. Southwestern corn borer continued its eastward advance, infesting 19 new counties for a total of 54 counties, 2 of which border the Mississippi River on the east. European corn borer continued its southward movement, infesting 16 new counties for a total of 51 counties. In eastern areas the pest crossed the State and moved on into Louisiana. Southwestern corn borer infestations are reaching an intensity that control measures are needed in most of the infested area. This is true for the European corn borer in northeastern Arkansas. CHINCH BUG (Blissus leucopterus) infestations were common in northeast regions but in general were not damaging. The number in hibernation in the fall of 1957 was much lower than in 1956. SUGARCANE BEETLE (Euethoela rugiceps) infestations in corn were much lighter in 1957 than in 1956. CORN LEAF APHID (Rhopalosiphum maidis) infestations on corn and sorghum were widespread and persistent throughout the year. No serious damage was apparent, yet evaluation of possible injury is difficult and little is known of good methods of evaluating damage.

Fruit Insects: Due to a late freeze in the spring of 1957 fruit was killed in northwest Arkansas. ORIENTAL FRUIT MOTH (Grapholitha molesta) infestations were light in eastern and absent in southwestern regions. PLUM CURCULIO (Conotrachelus nenuphar) infestations were light in both areas. GRAPE BERRY MOTH (Paralobesia viteana) infestations were above normal in northwest Arkansas. A LEAF ROLLER (Platynota flavedana) caused damage to peaches for the first time in southwest Arkansas.

Truck Crop Insects: IMPORTED CABBAGEWORM (Pieris rapae) and CABBAGE LOPPER (Trichoplusia ni) caused some trouble to commercial cabbage in east Arkansas due mainly to improper control measures. PICKLEWORM (Diaphania nitidalis) caused losses in squash in northeast areas. SOUTHERN GREEN STINK BUG (Nezara viridula) infested lima beans in southern counties.

Cotton Insects: THRIPS infestations were light on cotton in 1957 with very few cases of control being applied. COTTON FLEAHOPPER (Psallus seriatus) infestations varied over the State but were in general non-economic with control seldom practiced. COTTON APHID (Aphis gossypii) infestations were much heavier than 1956, with over half the fields in the State becoming economically infested after August 10. Control was combined with other insects but resistance to certain insecticides presented problems. COTTON LEAFWORM (Alabama argillacea) infestations started early and were much heavier than in many years. Little trouble in control occurred as insecticides were being applied regularly for other insects. CABBAGE LOOPER (Trichoplusia ni) was lighter than 1956. Fewer fields were infested with BOLLWORM (Heliothis sp.) in 1957 than 1956. Predators and parasites kept this pest under control in early season while regular insecticide applications controlled it in infested fields in late season. BOLL WEEVIL (Anthonomus grandis) infestations were heaviest in many years during late season and reflected type of weather and timing of cotton planting. Excessive spring rains resulted in a small amount of early cotton. The bulk of the crop was planted later than normal with a small amount planted extremely late. Early season infestations were confined mainly to the early planted cotton. In all sections of the State except the hill sections, medium and late planted cotton was relatively free of high weevil infestations until second generation emergence in late July and early August, depending on latitude. Summer rains were favorable to weevil development and infestations soared very high and rapidly after mid-August. A comparison of weekly average infestations in 1956 and 1957 based on percentage of punctured squares is given in Table 1. The figures on infestation are based on reports from 79 scouts in 23 counties in 1957 and 55 scouts in 17 counties in 1956. Rainfall is based on the average of 15 stations in the cotton growing area.

Table 1. - Boll weevil infestation based on percent punctured squares in fields distributed over 23 counties in 1957 and 17 counties in 1956.

	June			July					August			September		
	10	17	24	1	8	15	22	29	5	12	19	26	2	9
1957														
Infest. ----	4.2	2.2	3.6	4.9	5.5	7.8	11.4	15.1	21.2	36.6	34.9	33.3	33.0	
Precpt.	1.12	1.00	.87	1.37	.05	.88	.88	2.16	.29	2.42	.16	.03	1.00	1.31
1956														
Infest.	0.24	6.1	6.9	7.1	7.1	9.2	12.4	17.2	20.9	26.8	29.4	26.8	25.5	26.8
Prespt.	0.2	2.4	.39	.14	.98	.09	1.2	.6	.06	.35	.90	.03	1.51	0.0

Table 2 shows a comparison between 1956 and 1957 in the percentage of fields infested by both boll weevil and bollworm. This table shows the light early weevil infestations, the widespread late weevil infestations, and the lower bollworm infestations in 1957 than 1956.

Table 2. - Percentage of cotton fields infested with boll weevils and bollworms in 17 cotton growing counties in Arkansas in 1956 and 23 counties in 1957.

	June			July					August			
	10	17	24	1	8	15	22	29	5	12	19	26
	(BOLL WEEVIL)											
1957 --	18	26	43	59	67	78	81	89	93	98	100	
1956 28	30	51	70	68	82	85	86	92	88	94	89	
	(BOLLWORM)											
1957 --	8	16	19	21	28	37	42	44	60	55	36	
1956 48	23	19	31	40	46	58	62	61	57	61	63	

Table 3 shows a comparison of the two years of aphid infestation.

Table 3. - Percentage of cotton fields infested with aphids in 17 cotton growing counties in Arkansas in 1956 and 23 counties in 1957.

	June			July					August			
	10	17	24	1	8	15	22	29	5	12	19	26
1957 --	20	17	11	12	17	13	35	47	61	59	64	
1956 --	4	2	1	1	5	2	7	17	16	21	46	

Spider mite infestations were much lower in 1957 than in 1956. This no doubt was influenced by the heavy rainfall in 1957. This comparison is shown in Table 4.

Table 4. - Percentage of cotton fields infested with spider mites in 17 counties in Arkansas in 1956 and 23 counties in 1957.

	June			July					August			
	10	17	24	1	8	15	22	29	5	12	19	26
1957 --	.12	0	0	0	0.2	0.2	1.0	1.7	5.2	8.4	15.1	
1956 --	0.4	1.8	3.2	2.5	4.9	7.8	19.0	18.3	39.8	30.6	47.4	

PINK BOLLWORM (Pectinophora gossypiella) infestations in 1957 were much below the 1956 level based on the number of larvae recovered from gin trash samples. In 1956 a total of 194 larvae were collected from 10,460 bushels of gin trash from 50 counties, through November. In 1957 only one larva was found in 19,003 bushels of gin trash from 51 counties through November. One additional larva was found in December 1957.

Forest, Ornamental, and Shade Tree Insects: ELM LEAF BEETLE (Galerucella xanthomelaena) caused sporadic damage to elm trees in several towns in the west. NANTUCKET PINE MOTH (Rhyacionia frustrana) infested young stands of loblolly pine in several locations in south Arkansas. BARK BEETLE (Ips spp.) infestations remained about the same as in 1956. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) infestations were about the same in both years. A BLACK-HEADED SAWFLY (Neodiprion fabricii) infested areas in south central Arkansas with some defoliation in late 1957.

Stored Grain Insects: There was little change in the pattern regarding stored grain insects. SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) remained the principal pest of stored grain. LESSER GRAIN BORER (Rhyzopertha dominica), RICE WEEVIL (Sitophilus oryza), ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) continued to be important stored grain pests.

Beneficial Insects: Several species of beneficial insects played an important role, especially in holding down numbers of aphids and Heliothis species in cotton, corn, and sorghum. These were a BIG-EYED BUG (Geocoris punctipes), insidious flower bug (Orius insidiosus), LACEWINGS (Chrysopa spp.), and LADY BEETLES (Hippodamia spp.). These beneficial species were abundant on cotton in early season and no doubt played an important part, especially in holding down bollworm infestations.

Miscellaneous Insects: VETCH BRUCHID (Bruchus brachialis) infestations were fairly heavy on vetch in some areas. Losses were not evaluated but were low due to the small amount of vetch seed production in the State. IMPORTED FIRE ANT (Solenopsis saevissima richteri) infestation in Union County was apparently eradicated in the treated area. Fire ants are being found in small numbers in fringe areas around the treated areas.

Outlook for 1958 - The heavy BOLL WEEVIL infestation in 1957 along with late rains and lush green cotton for a good food supply provided ideal conditions for a large number of weevils to go into hibernation. Trash sampling indicates a large number of weevils are in hibernation. Cold weather up to early January has not been severe enough to destroy very many weevils in hibernation. Unless colder than normal weather occurs the remainder of the winter, a large number of weevils will be on hand at the time of emergence. Heavy infestations in 1958 are expected unless dry weather holds them down. Infestations of weevils in north Arkansas are expected to continue to get worse unless weather conditions give a setback to the pest. Indications are that there should be little trouble from GRASSHOPPERS in 1958. CHINCH BUG infestations should be lighter in 1958. FALL ARMYWORM infestations cannot be predicted as this species overwinters far south of here. Little trouble is expected from the SPOTTED ALFALFA APHID until drier weather occurs. It is anticipated that the EUROPEAN CORN BORER and the SOUTHWESTERN CORN BORER both will spread to new areas, increase in intensity, and possibly attack new hosts.

SUMMARY OF INSECT CONDITIONS - 1957*

TEXAS

Texas Cooperative Insect Survey

Highlights: IMPORTED FIRE ANT infested six southeast counties as of November 1, 1957. Overwintering POTATO PSYLLID populations were the heaviest in many years. BOLLWORM, CABBAGE LOOPER and COTTON LEAFWORM infestations were heavy on cotton in most areas of the State. COTTON FLEAHOPPER caused extensive damage to cotton. RICE STINK BUG populations were heavy on rice.

Cereal and Forage Insects: Infestations of WINTER GRAIN MITE (Pentaleus major) were medium to heavy in north central counties, especially in fields that had been planted to small grains for several years. BROWN WHEAT MITE (Petrobia latens) occurred in the north central regions, but no economic damage was reported. GREENBUG (Toxoptera graminum) infestations ranged from light to heavy in some of the panhandle counties. The heavy populations occurred in isolated fields late in the season. No economic damage occurred in north central Texas. Early fall infestations were observed on volunteer wheat south of Amarillo. CUTWORMS (Agrotis ypsilon, Chorizagrotis auxiliaris, and Peridroma margaritosa) and ARMYWORM (Pseudaletia unipuncta) caused considerable damage to vetch and small grain in north central part of the State. In late spring fields with 10-30 larvae per square foot were not uncommon. SPOTTED ALFALFA APHID (Therioaphis maculata) did not cause as much damage during 1957 as in 1956. Early spring rains helped keep populations below destructive levels. CORN EARWORM (Heliothis zea) severely damaged grain sorghum in coastal bend, central and south plains areas and damaged corn and alfalfa throughout the growing season. SORGHUM WEBWORM (Celama sorghiella) heavily damaged grain sorghum over most of the State. In several fields infestations ranged up to 15 larvae per head. FALL ARMYWORM (Laphygma frugiperda) caused heavy damage to corn in the Brazos River Valley area as well as damage to alfalfa, pastures, lawns and small grains. A disease helped to control one brood during August. GRASSHOPPERS (several spp.) occurred over much of the State. The infestation ranged from light to severe over 4,282,000 acres. About 50,000 acres of rangeland were treated for control.

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) infestations extended as far south as Freestone, Cherokee, Anderson and Houston Counties, but were generally light. Light to heavy RICE WATER WEEVIL (Lissorhoptrus orysophilus) populations occurred on rice early in the growing season. RICE STINK BUG (Oebalus pugnax) infestations were the heaviest in several years. Some fields required several treatments to bring the insect under control. A survey of the rice fields during the growing season failed to disclose the presence of Sogata sp. or Hortensia similis which have been associated with the transmission of the hoja blanca disease of rice.

Fruit Insects: PLUM CURCULIO (Conotrachelus nenuphar) and CATFACING INSECT infestations were light to medium with little damage resulting. PEACH TREE BORER (Sanninoidea exitiosa) and LESSER PEACH TREE BORER (Synanthedon pictipes) were generally light in east Texas. PECAN NUT CASEBEARER (Acrobasis caryae) was light to medium in most pecan-growing areas. PEACH TWIG BORER (Anarsia lineatella) caused heavy damage in central Texas. DRIED-FRUIT BEETLE (Carpophilus hemipterus) populations were generally light.

Truck Crop Insects: CORN EARWORM (Heliothis zea) caused damage throughout 1957 to sweet corn, tomatoes, and other vegetable crops. CABBAGE LOOPER (Trichoplusia ni) caused damage to lettuce, cabbage, cauliflower and turnips

*Nov. 1, 1956 to Nov. 1, 1957

in the vegetable-growing area of the State. BET LEAFHOPPER (Circulifer tenellus) was present on spinach in winter garden area, but little damage resulted. ONION THRIPS (Thrips tabaci) occurred in light to moderate infestations on onions. Spotted local infestations of the following insects occurred in various parts of the State: APHIDS, PEPPER WEEVIL, COWPEA CURCULIO, GRASSHOPPERS, FALL ARMYWORM, TOMATO PINWORM, BLISTER BEETLES, SQUASH BUG, LEAFHOPPERS, BET ARMYWORM, DIAMONDBACK MOTH, FLEA BEETLES, FALSE CHINCH BUGS, CUTWORMS, STINK BUGS, HARLEQUIN BUG, SPIDER MITES, THRIPS, FALSE WIREWORM, MELONWORM, DARKLING BEETLES and SWEETPOTATO WEEVIL. Overwintering populations of POTATO PSYLLID (Paratrioza cockerelli) were the largest since 1946. MELON APHID (Aphis gossypii) infestations were heavy on watermelons in central Texas. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) caused severe damage to seedling watermelons in central Texas.

Cotton Insects: THRIPS (Frankliniella sp.) infestations were generally light over the State. COTTON FLEAHOPPER (Psallus seriatus) infestations appeared early and continued until August with largest infestations occurring in the lower Rio Grande Valley and along the coastal bend areas. Reports of 300 nymphs and adults per 100 terminals were common early in the season. Fleahopper emergence in overwintering tests were high at Waco. Fleahoppers were present on the south plains, but were not a major problem. COTTON APHID (Aphis gossypii) infestations were spotted and light. No economic outbreaks were reported. BOLL WEEVIL (Anthonomus grandis) hibernation studies indicated a very high overwintering population, however, this population failed to develop into a major outbreak. Several fields in the lower Rio Grande Valley had high populations in July. Infestations elsewhere were kept under control. Boll weevils were reported difficult to control with the chlorinated hydrocarbon insecticides in Robertson and Brazos Counties; however, where phosphate insecticides were used they were easily controlled. BOLLWORMS (Heliothis zea) appeared in mid-June and developed into a problem in the coastal bend area and in some areas of central Texas by mid-July. Some fields in the south plains also received insecticidal treatment for bollworm control. CABBAGE LOOPER (Trichoplusia ni) appeared early and continued through the season, especially on the south, central and coastal plains areas. Scattered infestations were all over the State, but were not too serious. First reports of COTTON LEAFWORM (Alabama argillacea) were received from Cameron and Calhoun Counties on June 10. One month later leafworms were reported on the south plains and along the Red River Valley. SPIDER MITES were generally light with a few heavy infestations occurring on cotton in the central area. PINK BOLLWORM (Pectinophora gossypiella) infestations were as large in some fields in the lower Rio Grande Valley as in 1952, however, there was no general infestation over the valley. There were light infestations in the coastal bend, upper coastal and in counties next to Louisiana. Early infestations in the central Black Lands did not develop into economic infestations. In the El Paso Valley area it was reported that the infestation was lighter in 1957 than in 1956. In the plains area it was generally light. Unfavorable weather conditions delayed harvest and fall clean up, and this might give ideal overwintering quarters for the pink bollworm. WHITE FLIES were extremely heavy on cotton in west central and west Cross Timbers areas. Other insects, namely, STINK BUGS, GRASSHOPPERS, GARDEN WEBWORM, LYGUS BUGS, BROWN COTTON LEAFWORM, CUTWORMS, and COTTON SQUARE BORERS were reported feeding on cotton in the State.

Forest, Ornamental and Shade Tree Insects: SOUTHERN PINE BEETLE (Dendroctonus frontalis) infested pine in the southern part of Hardin County. IPS BEETLES were reported infesting pines in east Texas early in the year. TEXAS LEAF-CUTTING ANT (Atta texana) damaged pine seedlings throughout east Texas. TURPENTINE BEETLES (Dendroctonus spp.) damaged pine timber throughout southeast Texas. TIP MOTH infestations were reported to be largest in several years in east Texas. RED-HEADED PINE SAWFLY (Neodiprion lecontei) caused partial defoliation of young pine plantings in east Texas. BAGWORMS (Thyridopteryx ephemeraeformis) caused damage to ornamental and shade trees

in central Texas. Other insects occurring on shade trees and ornamental plants were GALL INSECTS, MEALYBUGS, APHIDS, PSOCIDS, SPIDER MITES, WOOD BORERS, FALL WEBWORM and SCALE INSECTS.

Stored Grain Insects: As the production of grain sorghum is increased the stored grain insect problem increases in importance. The major stored grain insect pests are RICE WEEVIL, ANGOUMOIS GRAIN MOTH, RICE MOTH, INDIAN-MEAL MOTH, LESSER GRAIN BORER and BRAN BEETLES (including FLAT GRAIN BEETLE, CONFUSED FLOUR BEETLE and SAW-TOOTHED GRAIN BEETLE). VETCH BRUCHID (Bruchus brachialis) continued to do damage to vetch in the north central part of the State.

Insects Affecting Man and Animals: CATTLE GRUBS (Hypoderma spp.) continued to cause losses although infestation was fairly light. SCREW-WORM (Callitroga hominiyorax) infestations were heavy in all areas of the State and were the worst in several years. BROWN DOG TICK (Rhipicephalus sanguineus) infestations were heavy, especially on dogs in central Texas. HOUSE FLY (Musca domestica) populations were more numerous in 1957 than in 1956. MOSQUITOES (several species) were extremely numerous over most of the State due partly to the above normal rain fall. Other insects such as ROACHES, SILVERFISH, TERMITES, CLOTHES MOTHS and FLEAS continued to be pests in and around homes. A TERMITE (Kalotermes approximatus) was reported for the first time in this State in 1957. It was collected in a home in Waco, McLennan County.

Miscellaneous Insects: To November 1, 1957 IMPORTED FIRE ANT (Solenopsis saevissima var. richteri) has been reported in Orange, Jasper, Newton, Jefferson, Tyler and Hardin Counties. The swarming of TEXAS LEAF-CUTTING ANT (Atta texana) queens was the largest in many years. TEXAS HARVESTER ANT (Pogonomyrmex barbatus v. molefaciens) continued to cause damage over most of the State.

SUMMARY OF INSECT CONDITIONS - 1957

OHIO

Submitted by C. R. Neiswander

Highlights: Following a milder than average winter of 1956-1957 a number of insect species were more abundant than usual in the 1957 season. CORN EARWORM (Heliothis zea) and FALL ARMYWORM (Laphygma frugiperda) were particularly abundant on late corn. Likewise, on sweet corn the incidence of Stewart's disease, the organism of which is transmitted by the CORN FLEA BEETLE (Chaetocnema pulicaria) was somewhat greater than usual. CABBAGE LOOPER (Trichoplusia ni) caused severe damage on celery. CORN LEAF APHID (Rhopalosiphum maidis) was particularly abundant over the northern half of the State, in some cases resulting in as many as 50 percent barren stalks. EUROPEAN CORN BORER (Pyrausta nubilalis), on the other hand, was at a low ebb and caused relatively light damage to field corn.

Cereal and Forage Crop Insects (C. R. Weaver): POTATO LEAFHOPPER (Empoasca fabae) damaged second-cutting alfalfa severely and built up its numbers so that in many cases third-cutting alfalfa was completely destroyed. Estimated damage was 15 percent on second-cutting and 40 percent on third-cutting (\$9,750,000). MEADOW SPITTLEBUG (Philaenus leucophthalmus) infestations ran 1 to 7 nymphs per stem. In general, populations were much higher than in 1956 - northeast, central, and southwest central again having the largest infestation. First cutting alfalfa and red clover loss was estimated at 7 percent (\$5,400,000).

Fall populations of adults were much larger than in 1956 (CEIR 7(43):836), promising the most severe infestation ever to be encountered in Ohio for 1958. LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) continued to be prevalent in all red clover sampled. An average of 0.5 to 2.3 buds per stem were damaged. Estimated loss to first-cutting red clover was 4 percent (\$1,600,000). CLOVER ROOT BORER (*Hylastinus obscurus*) populations remained low after being delayed by unfavorable spring weather. Estimated damage to second-cutting red clover was 3 percent (\$750,000). PEA APHID (*Macrosiphum pisi*) maintained fair populations in spring and fall but failed to build up to epidemic numbers. No estimate of damage was made. SPOTTED ALFALFA APHID (*Therioaphis maculata*) appeared in southwestern Ohio counties in October. This was the first report of the aphid's appearance in the State. No damage was reported (CEIR 7(46):874).

Corn Insects (C. A. Triplehorn): EUROPEAN CORN BORER (*Pyrausta nubilalis*) had the lowest population in field corn of any year since 1946. The average number of larvae per 100 plants was 35.1 as compared with 53.3 in 1956. The estimated damage in Ohio was \$1,462,850 based on a yield reduction of 2 percent per borer per plant. CORN LEAF APHID (*Rhopalosiphum maidis*) was unusually abundant and caused severe damage to corn over the northern half of the State. In some areas the infestation was accompanied by a severe summer drought and yields were reduced by more than 50 percent by the two factors. CORN EARWORM (*Heliothis zea*) caused little damage to field corn but damage to late sweet corn was severe, particularly in the southern part of the State. FALL ARMYWORM (*Laphygma frugiperda*) which seldom causes damage in Ohio was abundant in late corn. Although a severely damaged field was observed as far north as Wooster, most of the injury occurred in the southern part of the State.

Apple Insects (C. R. Cutright): EUROPEAN RED MITE (*Panonychus ulmi*) was the most severe pest of the season. It was abundant in all sections of Ohio and adequate control was difficult to maintain in many orchards. Only one severe infestation of TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was called to attention this season. CODLING MOTH (*Carpocapsa pomonella*) was a minor pest in most Ohio orchards in 1957. PLUM CURCULIO (*Conotrachelus nenuphar*) injury was more noticeable than usual but not severe except in poorly sprayed orchards. APPLE APHID (*Aphis pomi*) was more abundant than usual, especially in northeastern Ohio. ROSY APPLE APHID (*Anuraphis roseus*) was not a problem in 1957 and no control data were secured. WOOLLY APPLE APHID (*Eriosoma lanigerum*) was noticeable but not a problem. APPLE MAGGOT (*Rhagoletis pomonella*) was severe in poorly sprayed or unsprayed orchards. Populations of RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) were high in early season, but infestation was spotty at harvest and generally less severe than in 1956. LEAF MINERS (*Callisto* spp.) were not as noticeable as in 1956.

Estimated Loss Due Directly to Apple Pests on Sprayed and Unsprayed Trees: Estimates of loss are made by the following method. According to the census report of 1955 for Ohio, the total number of apple trees in the State was 1,530,000. Of this number 295,000 were non-bearing trees leaving 1,235,000 producing trees. There are no available figures on the number of trees in commercial production, but the estimated commercial crop for 1957 was 3,200,000 bushels. Horticulturists estimate that the average yield per commercial tree is between 7 and 8 bushels. If 7 is divided into 3,200,000 this would mean approximately 450,000 trees in commercial production. Subtracting 450,000 from 1,235,000 would leave 785,000 trees of the neglected or non-commercial type. Due to the ravages of insects and disease, these trees produce at only 2 to 5 percent their capacity, or let us be conservative and say that insects and disease deprive every tree owner of 5 bushels of apples per tree per year. Five times the number of non-commercial trees or 785,000 means a loss of 3,925,000 bushels per year. Half of this loss can be

charged to insects and the remainder to disease, or 1,962,000 bushels lost due to insects. To this must be added the loss to the commercial crop which was incurred in spite of control measures. From records taken by entomologists and observations by growers this is conservatively estimated at 3 percent or 96,000 bushels. Add 1,962,000 and 96,000 and the total loss is 2,058,000 bushels of apples in Ohio for 1957. If these were worth only \$1.00 per bushel, the money loss is very great. This is charged to the different apple insects as follows:

Codling moth.....	\$ 700,000
Orchard mites.....	100,000
Plum curculio.....	700,000
Red-banded leaf roller....	50,000
Apple maggot.....	400,000
Aphids.....	50,000
Others.....	58,000
Total.....	\$2,058,000

Cost of Insect and Mite Control: The Ohio crop of 1957 was estimated at 3,200,000 bushels. The estimated cost of insect and mite control is 25 cents per bushel or \$800,000. This is apportioned as follows:

Codling moth.....	\$ 400,000
Orchard mites.....	175,000
Plum curculio.....	75,000
Red-banded leaf roller.....	75,000
Apple maggot.....	50,000
Aphids.....	15,000
Others.....	10,000
Total control costs.....	\$ 800,000
Total direct loss due to insects..	2,058,000
Total.....	\$2,858,000

Stone Fruit Insects (Roy W. Rings): The catfacing complex of insects caused more injury to peaches than any other single insect or group of insect pests. TARNISHED PLANT BUGS (Lygus lineolaris) were more troublesome in 1957 than in previous years. OAK PLANT BUGS (Neolygus omnivagus and N. quercalbae) and HICKORY PLANT BUGS (N. caryae) were less abundant than in 1956. In general, STINK BUGS (Acrosternum hilare, Euschistus servus, E. tristigma and E. variolarius) caused less injury than in 1955 or 1956. PLUM CURCULIO (Conotrachelus nenuphar) populations were light in regularly sprayed orchards but caused severe damage in unsprayed plantings. ORIENTAL FRUIT MOTH (Grapholitha molesta) twig and fruit injury was very light in commercial orchards. Both EUROPEAN RED MITE (Panonychus ulmi) and TWO-SPOTTED SPIDER MITE (Tetranychus telarius) were troublesome in orchards where preventive control programs were not used. This was apparently due to the development of resistance of mites to early season schedules of parathion and EPN. PEACH TREE BORER (Sanninoidea exitiosa) has not been troublesome in orchards receiving trunk sprays of DDT but the LESSER PEACH TREE BORER (Synanthedon pictipes) was more frequently reported as a pest than in previous years.

Vegetable Crop Insects (J. P. Slesman): Populations of the IMPORTED CABBAGEWORM (Pieris rapae) were average on most cole crops. CABBAGE LOOPER (Trichoplusia ni) populations were above normal and sporadic outbreaks of importance occurred on celery, potatoes, and turnips. POTATO LEAFHOPPER (Empoasca fabae) was unusually abundant on unsprayed potatoes where they caused the yield to be reduced by more than one-half. POTATO FLEA BEETLE (Epitrix cucumeris) populations were about normal. POTATO APHID (Macrosiphum solanifolii) infestations were general over the State and populations were considerably above normal. Infestations of TOMATO FRUITWORM (Heliothis zea) and Drosophila spp. were light, both in fresh market and canning tomatoes. MEXICAN BEAN BEETLE (Epilachna varivestis) was above normal in abundance in

southern Ohio but of little importance in the northern part of the State. ASTER YELLOWS DISEASE in carrots and lettuce was severe in most truck-growing areas of the State and some fields, especially of lettuce, were a total loss. Populations of SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons), vector of aster yellows virus, were unusually high throughout the northern part of the State. TWO-SPOTTED SPIDER MITE (Tetranychus telarius), STRIPED CUCUMBER BEETLE (Acalymma vittata), SEED-CORN MAGGOT (Hylemya ciliocrura) and CABBAGE MAGGOT (Hylemya brassicae) populations were of about average importance. Various species of SLUGS were unusually abundant due to the wet weather.

Turf Insects (J. B. Polivka): JAPANESE BEETLE (Popillia japonica) grub population averaged 4 larvae more per square foot than in 1956. Heaviest infestations were found in southeastern and east central Ohio except in the Steubenville area. Grub population was lower than usual in the northeastern section. NORTHERN MASKED CHAFER (Cyclocephala borealis) and JUNE BEETLES (Phyllophaga spp.) caused considerable turf damage. GREEN JUNE BEETLE (Cotinis nitida), CHINCH BUGS, CUTWORMS and WEBWORMS were of little importance. MOLES presented a great problem to many home owners because of the grubs.

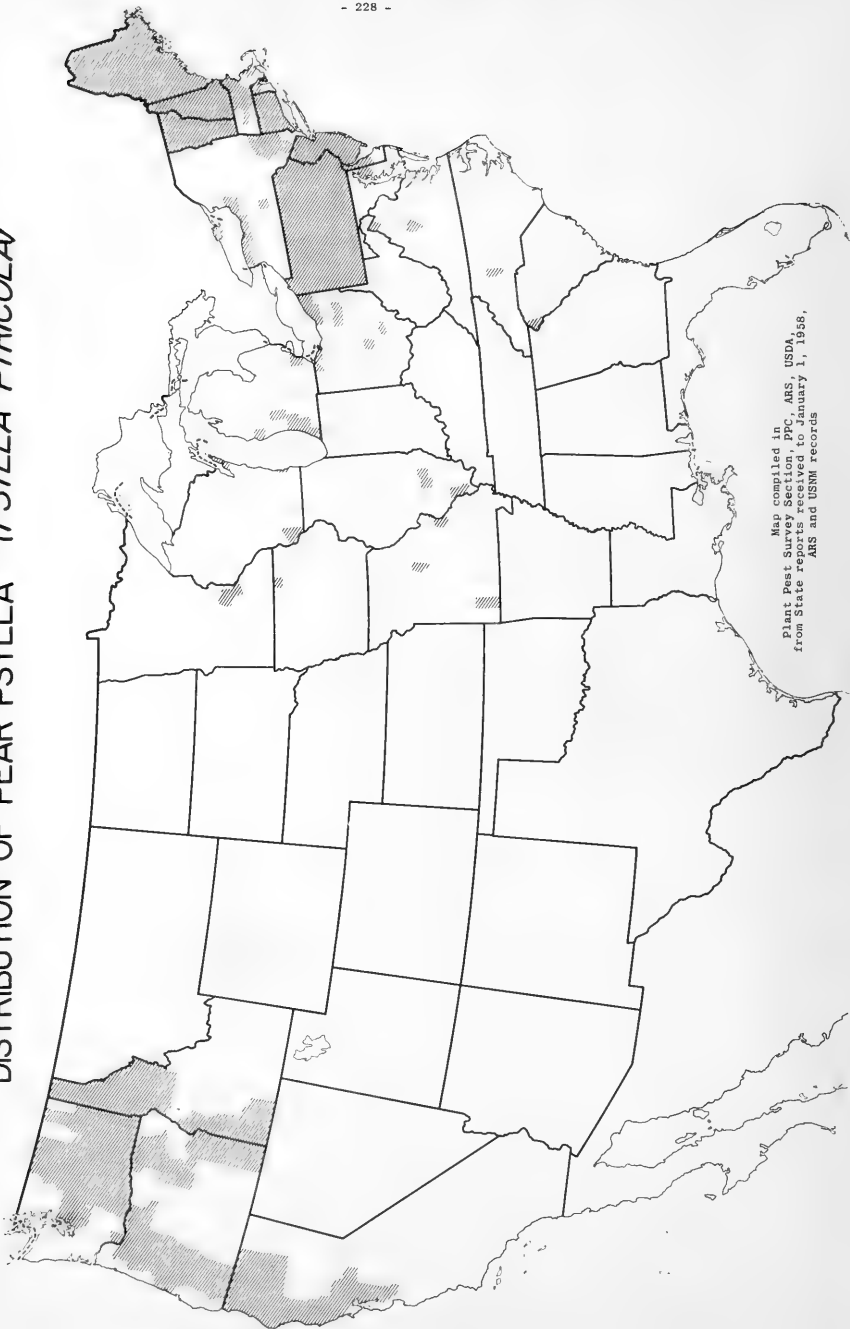
Forest, Ornamental and Shade Tree Insects (R. B. Neiswander): Four species of mites were included among the 10 pests recorded most often by the state nursery inspectors during 1957. These were SPRUCE SPIDER MITE (Oligonychus ununguis), TWO-SPOTTED SPIDER MITE (Tetranychus telarius), TIP DWARF MITE (Eriophyes thujae), and MAPLE BLADDER GALL MITE (Vasates quadripedes). AZALEA MITE (Vasates atlantazaleae) also occurred commonly but was recorded less frequently than in 1956. The insects recorded most often were GRAPE MEALYBUG (Pseudococcus maritimus) on Taxus, BAGWORMS (Thyridopteryx ephemeraeformis), EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana), JUNIPER SCALE (Diaspis carueli), and OYSTERSHELL SCALE (Lepidosaphes ulmi). IMPORTED WILLOW LEAF BEETLE (Plagioderma versicolora) and ELM LEAF BEETLE (Galerucella xanthomelaena) were more abundant than usual on shade trees. EUROPEAN PINE SAWFLY (Neodiprion sertifer) caused damage in an occasional Christmas tree and forest planting. APHIDS were unusually abundant in pine plantings.

Household Insects (Roy W. Rings): The most important household insect problem in 1957 involved the EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes). Reports of infestations were received from many areas. Numerous requests were also received on control of BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus). BLACK CARPET BEETLE (Attagenus piceus) was frequently reported to be destructive in residences although other species of dermestids also caused damage. CLOVER MITES (Bryobia praetiosa) were less troublesome as compared with 1955 and 1956. Numerous reports of CLUSTER FLY (Pollenia rudis) invasions of homes were received. A HACKBERRY PSYLLID (Pachypsylla celtidis-vesicula) was quite troublesome in the Cincinnati area in residences in the vicinity of hackberry trees. A VINEGAR FLY (Drosophila melanogaster) was abundant in the Wooster and Akron areas and invaded groceries, supermarkets, and other food handling establishments. BED BUGS (Cimex lectularius) were encountered but once in 1957. CAT FLEA (Ctenocephalides felis) was reported occasionally from the northeastern part of the State.

Prevalence of Insects in Ohio in 1957 (D. Lyle Goleman):

<u>Abundant</u>	<u>Normal</u>	<u>Below Normal</u>
Spittlebug	Sweetclover weevil	Pea aphid
European red mite	Southern June beetle	Angoumois grain moth
Ants	Pine sawfly	Walnut datana
Millipedes	European corn borer	Oat thrips
Corn leaf aphid	Armyworm	San Jose scale
Potato leafhopper	Crickets	Cattle lice
Horse flies	Hessian fly	Rose thrips
	Cutworms	Hornworms
<u>Above Normal</u>	Corn silk beetles	Seed-corn maggot
	Grasshoppers	Blister beetles
Boxelder bug	Apple leafhopper	Rose chafer
Clover mite	Oriental fruit moth	Colorado potato beetle
Red-banded leaf roller	Willow aphid	Cabbage maggot
Bagworms	Clover bud weevil	Apple flea weevil
Japanese beetle	Clover leaf weevil	Corn rootworm
Elm leaf beetle	Cabbageworms	Pear-slug
Apple aphids	Potato flea beetle	Cluster flies
Tent caterpillars	Hackberry psyllids	
Plum curculio	Powder post beetle	<u>Scarce</u>
Corn flea beetle	Grape berry moth	Chinch bug
Clover root borer	Mexican bean beetle	Wheat jointworm
Chiggers	Blue bottle flies	Black cherry aphid
Grain weevils	Asparagus beetle	Spotted alfalfa aphid
Termites	Lygus bugs	
Apple maggot	Horn flies	
Fruit flies	Cherry fruit fly	
Nitidulid beetles	Carpet beetles	
Two-spotted mite	Clothes moths	
European pine shoot moth	Cattle grubs	
Corn earworm	Rose-slugs	
Stable flies	White grubs	
Cankerworms	Fleas	
Fall armyworm	Wireworms	
Mosquitoes	House flies	
Cockroaches	Cucumber beetles	
	Peach tree borers	
	Slugs	
	Tomato aphid	

DISTRIBUTION OF PEAR PSYLLA (*PSYLLA PYRICOLA*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA,
from State reports as received to January 1, 1958,
ARS and USNM records

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

GREEN OAK TORTRIX* (Tortrix viridana L.)

Economic Importance: This defoliator is a serious pest of oak forests in Europe, often requiring widespread control measures. It has been called

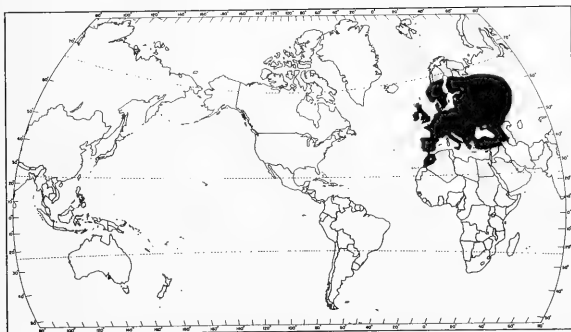
the most injurious lepidopterous pest of oak in the United Kingdom and is possibly the worst forestry pest in southern Europe due to the importance of its attack on the cork oak forests and the hog-feed forests of the Iberian Peninsula. Complete defoliation may occur in severe outbreaks. Repeated defoliations cause die-back and weaken the trees, predisposing them to attacks by fungi and other destructive agents.



Defoliated Oaks with
Undamaged Beech Undergrowth

Distribution: Reported to occur throughout Europe. Also Turkey and Morocco.

Hosts: Principal host plants are species of oak. May also attack beech, linden, maple, and other trees.

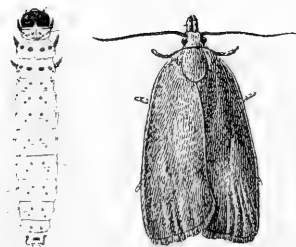


General Distribution of Green Oak Tortrix

* Also called green oak roller moth and oak leaf roller (Tortricidae, Lepidoptera).

Life History and Habits: Under conditions in the British Isles, moths are in flight in June and July. Eggs are laid in pairs, or small groups, on buds and young twigs, and are very difficult to see being of general appearance of the bark surface. Overwintering occurs in egg stage with larvae appearing in May. The young caterpillars begin feeding on the foliage when it is still in the bud stage. The flowers are also attacked. The larvae skeletonize and spin the leaves together. At a later stage they roll the leaves in a characteristic manner, the upper side outwards. Pupation takes place in late May or June (usually June) within, or partially within, a folded leaf. This moth is usually a pest of older woods although it sometimes spreads to younger stands. Tops of trees are generally attacked first.

Description: Adult expanse about 18 mm. Forewings bright green, hindwings grayish; both pairs with slight fringe of whitish scales around margins. Larva about 12 mm., greenish-gray above, green below, with black tubercles and brownish-black head. Pupa black. Eggs very small, circular and flat. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(12) 3-21-58



Larva and Adult of
Tortrix viridana



Characteristic Leaf Rolling



VOL. 9 No. 13

MARCH 28, 1958

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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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

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Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

EUROPEAN CORN BORER survival about the same as last year in South Dakota and near normal in southwest Illinois. (p. 233).

GREENBUG damaging small grains in northeast Texas. Light numbers in areas of Louisiana and New Mexico. (p. 233).

MORMON CRICKET nymphs in Pershing County, Nevada. (p. 233).

POTATO LEAFHOPPER SURVEY - Your participation with the research committee studying migration of this pest is urged again this year. Send first appearance records, abundance data and other observations to G. C. Decker, Illinois Natural History Survey, Urbana, Illinois.

First-brood nymphs of PEAR PSYLLA appearing earlier than usual in Jackson County, Oregon. New county record in California. (p. 234).

BOLL WEEVIL survival survey in Georgia shows lower number of weevils per acre than last year. (p. 235).

Indications that cold weather has reduced SCREW-WORM population in Florida. (p. 236).

MOSQUITOES causing considerable annoyance to cattle in lower Rio Grande Valley of Texas. (p. 236).

CORRECTIONS and ADDITIONAL NOTES. (p. 237).

SUMMARY OF INSECT CONDITIONS - 1957 - North Carolina (p. 240), Idaho (p. 246).

INSECTS not known to occur in the United States. (p. 253).

Distribution of SUGARCANE BEETLE. (p. 239).

WEATHER OF THE WEEK ENDING MARCH 24

With utter disdain for the advent of spring (March 20), "old man winter" continued to reign over nearly all areas east of the Rockies for the second straight week, as a ridge of high pressure extended from western Canada down through the mid-continent area. Temperatures for the week averaged 9° to 12° below normal in southern areas, but were slightly above normal in upper portions of the Great Lakes, New York and New England. Cold, cloudy weather and 3 to 6 days with precipitation kept soils too wet to work and prevented rapid growth of vegetation in the South where the season is 3 weeks late in many areas. Freezing occurred on 3 to 6 days in north and central portions of the Gulf States from Texas to Georgia, and scattered light to moderate frost was reported in northern Florida on the 21st and 22nd. The freezes caused slight loss of tender plants in Louisiana.

A wild storm meandering up the East Coast from the 19th through the 22nd ushered spring in there with gale to hurricane force winds and heavy rain and snow as high tides flooded coastal lowlands.

Heavy, wet snow blanketed an area extending from northern Virginia through New England. Snowfall during the storm ranged from 1 to 3 feet in much of this area. Mt. Airy, Md., reported 29 inches; Westminster, Md., 27; Trenton, N. J., 17.7 inches, the greatest amount there for a single storm since February 12-13, 1899 when 22 inches fell; and Norfolk, Conn., 18 inches. Up to 40 inches were reported from interior sections of Pennsylvania, and up to 35 inches in northwestern New Jersey. This snowstorm was described as the worst in 40 years in Pennsylvania, and it was the worst of the season in many other sections.

The storm halted air and surface traffic between large cities for various periods of time, downed trees, buildings, power and telephone lines, and caused about 40 deaths. Damages based on preliminary estimates amounted to \$1.5 million in New Jersey and \$3.5 million in Pennsylvania. Losses were also heavy in New England, Maryland, and New York State.

The week's weather was more nearly normal in the Far West where temperatures averaged a few degrees above normal except slightly below in interior California. Precipitation was again heavy in California but mostly light to moderate elsewhere.

Despite general light to moderate snowfall in the Great Plains both at the beginning and end of the week and an unusually heavy snowstorm in the Northeast, the cover east of the Rockies decreased. At end of the week only relatively small areas of the northern Plains were still covered, and further east the cover was limited to the Appalachians, much of New York and New England, and extreme upper portions of the Mississippi Valley and Great Lakes. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - SOUTH DAKOTA - Field survival averages 82 percent in 6 counties in northeast and east central regions. Survival is approximately the same as for 1957. (Hantsbarger). KANSAS - Counts made in several corn fields in the Kansas River Valley, southern Pottawatomie and northern Wabaunsee Counties showed a winter survival of 84-96 percent. None of the larvae have pupated. (Matthew). ILLINOIS - Survival in the west southwest apparently normal, with 63 percent of larvae found alive. (Ill. Ins. Rept.).

GREENBUG (*Toxoptera graminum*) - NEW MEXICO - Very light infestation on barley at Virden, Hidalgo County. (N. Mex. Coop. Rept.). LOUISIANA - Present on wheat and oats in low numbers in Acadia, Vermilion and St. Landry Parishes. (Newsom, Spink). TEXAS - Damaging small grains in Hunt, Rockwall, Delta, Kaufman and Van Zandt Counties. (Hawkins). Other spotted infestations reported in volunteer fields of small grain in northern areas. (Chada). KANSAS - None found in wheat and barley fields surveyed in southern Pottawatomie, northern Wabaunsee and Riley Counties. (Matthew). OKLAHOMA - None noted in small grains in Beckham County. (Coppock, Hudson).

MORMON CRICKET (*Anabrus simplex*) - NEVADA - First-instar nymphs present in Seven Troughs area of Pershing County. (McCoy, March 14). Present control includes 54,000 acres in 5 northern counties: Elko County 1,000 acres, Eureka County 5,000 acres, Humboldt County 4,000 acres, Lander County 16,000 acres and Pershing County 28,000 acres. (Del Curto).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - TEXAS - Infestations light in small grain throughout north central area. (Chada).

Grape Colaspis Survey, Arkansas: One of the causes of loss of stands of seedling rice in fields following lespedeza in 1957 was determined to be Colaspis sp. Surveys conducted during the weeks of March 3 and March 10 for the pest showed an average of 0.2-5.1 larvae per square foot in Lonoke County, 13.2-24.3 in Arkansas County, 0-18.7 in Green County, 24.5 in Craighead County, 22-28.3 in Poinsett County and 0.5 at 1 stop in Cross County. (Boyer, et al.).

JAPANESE BEETLE (*Popillia japonica*) - VIRGINIA - Grub populations ranged 4-17 per square foot in Danville, Pittsylvania County. (Rowell et al.).

RICE STINK BUG (*Oebalus pugnax*) - LOUISIANA - Overwintering in bullgrass. Counts ranged 0-10 per clump and averaged 1.4 bugs per clump. (Newsom, Spink).

SLUGS - OREGON - Injury to legumes and fall-sown grain has decreased in Polk and Yamhill Counties, probably as a result of recent cool weather. (Dickason).

WINTER GRAIN MITE (*Penthaleus major*) - TEXAS - Reported in small numbers in various small grain fields in northern counties. (Chada).

ALFALFA WEEVIL (*Hypera postica*) - NORTH CAROLINA - Most larvae in early instars in Alamance and Durham Counties. (Jones, Farrier). DELAWARE - First and second-instar larvae continue to feed in alfalfa buds in all areas examined. (MacCreary, Conrad).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - ILLINOIS - Adult counts average 0.6 per square foot in the west southwest. (Ill. Ins. Rept.).

CLOVER LEAF WEEVIL (*Hypera punctata*) - KANSAS - Small larvae found in all alfalfa fields surveyed in 3 northeast counties. Counts averaged 2 larvae per crown. (Matthew). ILLINOIS - Averages 2.8 per square foot in the east section and 1.7 in the west southwest. (Ill. Ins. Rept.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - NEW MEXICO - Light infestations in alfalfa fields in Dona Ana and Luna Counties. (N. Mex. Coop. Rept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - One heavy infestation on seedling alfalfa near Las Cruces, Dona Ana County. Otherwise infestations generally light. Several alates collected near Animas, Hidalgo County. (N. Mex. Coop. Rept.).

PEA LEAF WEEVIL (*Sitona lineata*) - OREGON - Damage to vetch and field peas now considerably less evident in Polk and Yamhill Counties than February 9. (Dickason).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Numerous in alfalfa fields near Derry and Arrey, Sierra County. (N. Mex. Coop. Rept.).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - ILLINOIS - Adults average 0.6 per square foot in the west southwest. (Ill. Ins. Rept.).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - KANSAS - None found in 3 northeastern counties. (Matthew). OKLAHOMA - Populations in small grains averaged less than 1 larva per square yard in Beckham County, with a range of 0.5-6.0. (Coppock, Hudson).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Heavy on alfalfa in the Imperial Beach area of San Diego County. (Cal. Coop. Rept.).

PEA APHID (*Macrosiphum pisi*) - DELAWARE - Common on alfalfa in eastern Sussex County. (MacCreary, Conrad). ILLINOIS - Counts averaged 0.4 in the west southwest. (Ill. Ins. Rept.). NEW MEXICO - Light infestations in many fields in Sierra, Dona Ana, Luna and Hidalgo Counties. (N. Mex. Coop. Rept.).

FRUIT INSECTS

CODLING MOTH (*Carpocasca pomonella*) - NEW MEXICO - Large numbers overwintering under bark of trees and in apple sheds in fruit-growing areas of the State. (N. Mex. Coop. Rept.).

APPLE APHID (*Aphis pomi*) - OREGON - Active and moderately abundant in an apple orchard in Benton County. (Jones, March 16).

APPLE MEALYBUG (*Phenacoccus aceris*) - OREGON - Very active on filberts at Mission Bottom. Winged males extremely abundant, much more numerous than wingless females. Mating observed but no oviposition noted. (Jones, March 19).

BLACK CHERRY APHID (*Myzus cerasi*) - OREGON - Emerged in Marion, Polk and Benton Counties the week of March 16. (Stephenson, Capizzi).

CLOVER MITE (*Bryobia praetiosa* complex) - NEW MEXICO - Eggs numerous in several orchards along Mimbres River, Grant County. (N. Mex. Coop. Rept.).

ITALIAN PEAR SCALE (*Epidiaspis piricola*) - CALIFORNIA - Medium infestations on pear in Danville area of Contra Costa County. (Cal. Coop. Rept.).

PEAR PSYLLA (*Psylla pyricola*) - OREGON - First-brood nymphs found considerably earlier than in past years in Jackson County. (Gentner, March 12). CALIFORNIA - Eggs on pear at Loomis, Placer County, reported as a first county record. (Cal. Coop. Rept.).

PEACH TWIG BORER (*Anarsia lineatella*) - CALIFORNIA - Heavy infestations in peach trees in Tranquillity area of Fresno County. (Cal. Coop. Rept.).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - TEXAS - Overwintering larvae emerging from hibernacula and feeding on young buds in the College Station of Brazos County. (Garner, Turney). FLORIDA - Larvae averaged few per branch tip on 25 inspected. Inspection for overwintering hibernacula showed 16 percent of branch tips infested and 75 percent of larvae in the hibernacula alive. (Phillips).

A PLUM APHID (*Anuraphis helichrysi*) - NEVADA - Abundant on plums in Reno-Sparks area of Washoe County. (Ting).

TRUCK CROP INSECTS

VARIEGATED CUTWORM (*Peridroma margaritosa*) - CALIFORNIA - Medium infestation on spinach in the Soledad area, Monterey County. (Cal. Coop. Rept.).

A CUTWORM (*Diarsia rosaria*) - CALIFORNIA - Heavy larval populations on strawberry plantings in the Watsonville area of Santa Cruz County. (Cal. Coop. Rept.).

DIAMONDBACK MOTH (*Plutella maculipennis*) - CALIFORNIA - Light infestation on mustard in Woodland, Yolo County. (Cal. Coop. Rept.).

CABBAGE LOOPER (*Trichoplusia ni*) - FLORIDA - Larvae infesting approximately 40 acres of cabbage in the Immokalee area, Collier County. (Denmark).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Medium infestation on spinach in Soledad area, Monterey County. (Cal. Coop. Rept.).

ONION THRIPS (*Thrips tabaci*) - NEW MEXICO - Beginning to build up in some onion fields in Dona Ana County. (N. Mex. Coop. Rept.).

A WHITEFLY (*Aleyrodes spiraeoides*) - WASHINGTON - Has been active during most of winter in Union Gap area, Yakima County, and adults were in flight on February 21. (Landis).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - CALIFORNIA - Heavy populations on weed reported from Lemon Grove area of San Diego County. (Cal. Coop. Rept.).

COTTON INSECTS

Boll Weevil Survival Counts in Georgia: Collections of surface woods trash March 3-10 showed 97 weevils per acre in the northwest, 1,307 in north central, 968 in the east central and 532 in the south, with an average of 731 live weevils per acre for the 4 areas. This compares with 1,036 weevils in 1957. Compared with the number of weevils found during the fall of 1957, the winter survival for the State is 34 percent. (Beckham, Morgan).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A CYPRESS TIP MOTH (*Epinotia hopkinsana cupressi*) - CALIFORNIA - Medium infestation on cypress in Monterey, Monterey County. (Cal. Coop. Rept.).

HOLLY LEAF MINER (*Phytomyza ilicis*) - OREGON - Surveys disclosed no appreciable increase in area of infestation in northern Clackamas County. Existing infestations have generally increased in severity over 1957. (Larson, March 17).

MITES - OREGON - *Rhizoglyphus* sp. heavily infesting a planting of several thousand lily plants being forced for Easter in a greenhouse at Eugene, Lane County. (Bock, March 14).

ROSE APHID (*Macrosiphum rosae*) - NEW MEXICO - Light to moderate infestations on roses in Dona Ana, Luna, Hidalgo and Grant Counties. (N. Mex. Coop. Rept.).

SPIDER MITES - MARYLAND - Adults appearing on wild geranium at College Park, Prince Georges County. (Univ. Md., Ent. Dept.). CALIFORNIA - Heavy populations of *Eurytetranychus buxi* reported on boxwood in Mill Valley, Marin County. This mite is not commonly taken in the State. (Cal. Coop. Rept.).

APHIDS - OKLAHOMA - Numerous on Easter lilies in a greenhouse in Tulsa, Tulsa County. (Coppock, Hudson, Stiles).

CUTWORMS - NEW MEXICO - Causing considerable damage to seedling and transplanted flowers at Las Cruces and Anthony, Dona Ana County. (N. Mex. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (*Callitroga hominivorax*) - FLORIDA - Reported from Hendry County. In the winter of 1956-57 approximately 400 head of new-born calves were treated for infestation, while in 1957-58 only 4 calves were treated, showing that cold weather had a marked effect on the screw-worm population. (Denmark).

SHEEP KED (*Melophagus ovinus*) - PENNSYLVANIA - Quite abundant on sheep in Greene County. (Udine, March 12).

CHICKEN MITE (*Dermanyssus gallinae*) - SOUTH DAKOTA - Infesting a home in Brookings County where a child was bitten. Source is believed to be pigeons which frequent the roof of the house. (Hantsbarger).

A CUTEREBRID - NEVADA - Larva removed from the femoral region of a cocker spaniel at Reno, Washoe County. (Bechtel).

LICE - NORTH CAROLINA - Moderate infestation in a herd of calves and a severe infestation in a herd of hogs in Wake County. (Batt). TEXAS - Feeding on cattle in Hall County. (Hooser). UTAH - Serious in some herds in Wasatch, Sevier, Juab, Kane and San Juan Counties. (Knowlton).

MOSQUITOES - TEXAS - Causing considerable annoyance to cattle in the lower Rio Grande Valley. (Fuller). UTAH - Larvae appearing in some areas in Weber County. (Knowlton). CALIFORNIA - Light trap catches generally low with *Culiseta inornata* the predominant species. (Cal. Coop. Rept.).

STORED-PRODUCT INSECTS

Stored-grain Pest Survey, Oklahoma: Inspection of 12 feed and seed establishments in southwestern part of the State showed RICE WEEVIL light in 1; LESSER GRAIN BORER severe in 1; RED FLOUR BEETLE severe in 1, heavy in 1, moderate in 1, occasional in 1; SAW-TOOTHED GRAIN BEETLE moderate in 1; CADELLE light in 1, occasional in 4; INDIAN-MEAL MOTH heavy in 1, light in 6, occasional in 1; DERMESTIDS moderate in 1, light in 5; KHAPRA BEETLE was negative. Various grains and seeds were included in the inspection. (Coppock, Hudson).

BENEFICIAL INSECTS

DAMSEL BUGS (*Nabis* spp.) - NEW MEXICO - Numerous in fields in Dona Ana, Luna, Hidalgo and Grant Counties. (N. Mex. Coop. Rept.).

A GREENBUG PARASITE (*Aphidius testaceipes*) - TEXAS - Quite common where greenbugs are numerous in northern counties. (Chada).

LACEWINGS (*Chrysopa* spp.) - NEW MEXICO - Numerous in fields in Dona Ana, Luna, Hidalgo and Grant Counties. (N. Mex. Coop. Rept.).

LADY BEETLES - NEW MEXICO - Adults and larvae of *Hippodamia parenthesis* numerous in a spotted alfalfa and pea aphid infested field near Animas, Hidalgo County. (N. Mex. Coop. Rept.). ILLINOIS - Adults average 0.4 per square foot in the west southwest. (Ill. Ins. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Light to heavy infestations reported at 4 different locations in the Holt area, Okaloosa County. (Dickinson, March 7). No important extensions reported. (Bittner, March 14).

TERMITES - PENNSYLVANIA - Swarming about homes generally. (Pepper et al.).

RED HARVESTER ANT (*Pogonomyrmex barbatus*) - OKLAHOMA - Active in Greer County. (Coppock, Owens, March 5).

PAINTED-LADY (*Vanessa cardui*) - CALIFORNIA - Heavy flights still reported from several counties. Egg laying on wash on lines was nuisance to housewives in Riverside County. (Cal. Coop. Rept.).

OLD-HOUSE BORER (*Hylotrupes bajulus*) - PENNSYLVANIA - In beams of a house in Lycoming County. (Gesell).

CLOVER MITE (*Bryobia praetiosa* complex) - NEVADA - Additional movements to dwellings has increased number of complaints from homeowners. (Bechtel, et al.).

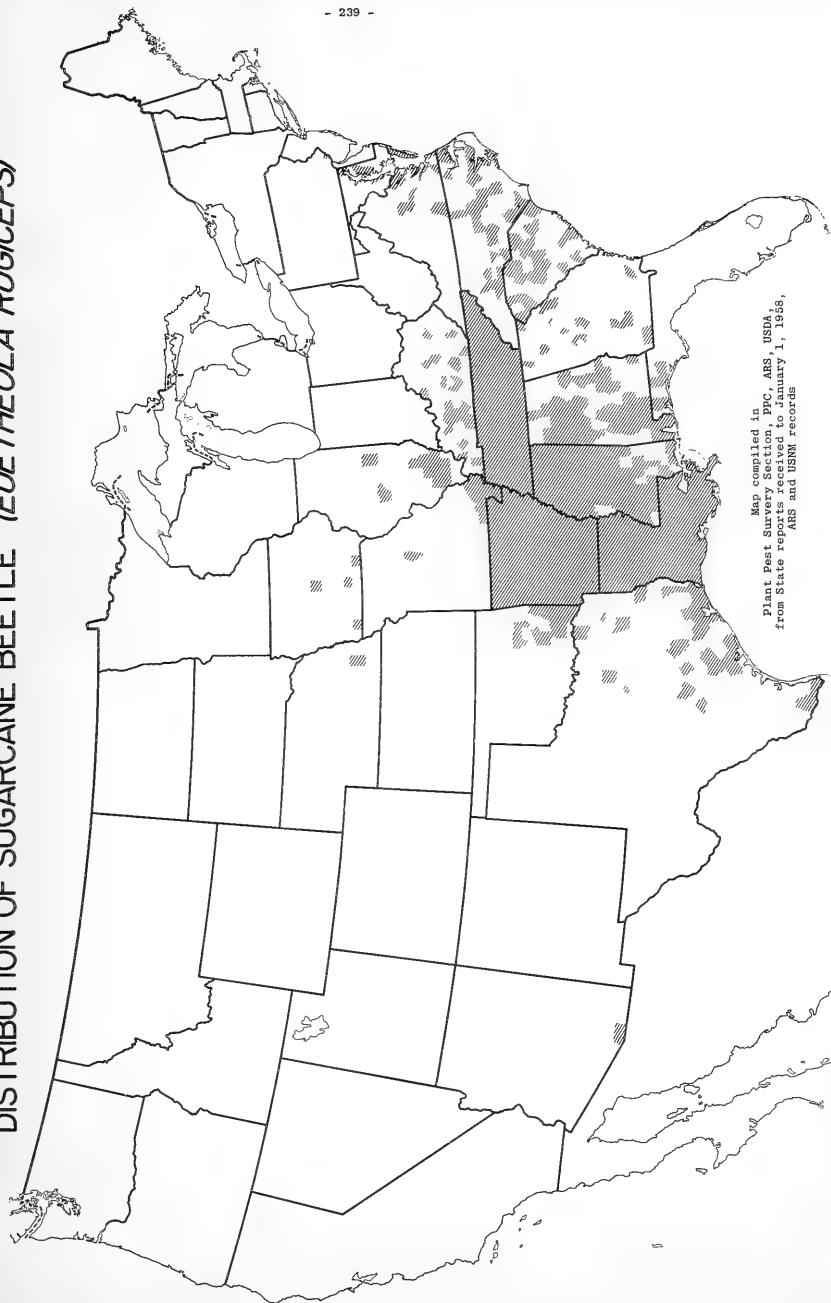
CORRECTIONS: CEIR 8(11): title page should read No. 11. Also "Reports in this issue are for the week ending March 7, 1958 unless otherwise designated."

ADDITIONAL NOTES - ALABAMA - GREENBUG counts averaged 15-20 per 10 sweeps in Escambia, Baldwin and Mobile Counties. CATTLE BITING LOUSE still causing damage to cattle in southern part of State.

LIGHT TRAP COLLECTIONS

	Hel. zea	Pseud. unip.	Proto. quin.	Laph. frug.	Agrot. yps.	Perid. marg.	Felt. subt.	Prod. ornith.
<u>ARKANSAS</u>								
Stuttgart 3/3-8		1			16			
<u>LOUISIANA</u>								
Franklin 3/9-18		1		1	1		3	
<u>SOUTH CAROLINA (County)</u>								
Charleston 3/17-23		15			3			2
<u>TEXAS</u>								
Brownsville 3/9-14	7	70	1	36	9	38	48	

DISTRIBUTION OF SUGARCANE BEETLE (*EUETHEOLA RUGICEPS*)



Map compiled in
Plant Pest Survey, ARS, USDA
from State reports received to January 1, 1958,
ARS and USNRI records

SUMMARY OF INSECT CONDITIONS - 1957

NORTH CAROLINA

Compiled by Maurice H. Farrier*

New Records of Economically Important Insects: Two SPIDER MITES, Tetranychus magnoliae on magnolia and Eotetranychus clitus on Formosa azaleas, were reported from the State for the first time. Eotetranychus clitus has been seen injuring azaleas in the State for many years but only recent taxonomic description makes possible its report. The IMPORTED FIRE ANT (Solenopsis saevissima v. richteri) was found at a site from which it was previously believed to have been eradicated in Brunswick County and at a site near where it was previously eradicated in Mecklenburg County.

Highlights: There was a notable absence of reported damage by CUTWORMS early in the season. The ARMYWORM clipped heads of small grain over a five-county area in the south central part of the State. Spread of the ALFALFA WEEVIL to the southern border and throughout the Piedmont occurred. The SPOTTED ALFALFA APHID did not cause economic damage except in one area in Wake County which suffered from extended drought. JAPANESE BEETLES, feeding on the silks, caused poor fertilization of corn in some areas. BILLBUGS extensively damaged corn in southeastern counties with the severely affected area extending inland as far as Elizabethtown. The MEADOW SPITTLEBUG was more abundant than usual early in the season in the western area. Soybeans suffered damage by the CORN EARWORM in northeastern counties, the MEXICAN BEAN BEETLE in the middle eastern counties and the VELVETBEAN CATERPILLAR in the southern Coastal Plain and southern Piedmont. Leaves of both domestic and wild grapes were severely skeletonized in the Coastal Plain and Piedmont by the GRAPE LEAF SKELETONIZER. Wax beans in the northern Coastal Plain were rejected by the canners in the early summer because of infestation by the CORN EARWORM. Drought conditions in mid- and late summer aggravated the problem of TWO-SPOTTED SPIDER MITE and TOBACCO THRIPS on peanuts in the northern Coastal Plain and later the VELVETBEAN CATERPILLAR attacked the pods in the stacks in the southern Coastal Plain. Late sweet corn was seriously damaged by the FALL ARMYWORM in southeastern counties. Flue-cured tobacco was injured more severely by the TOBACCO and TOMATO HORNWORMS than in the past three or four years. Foliage loss to insects, excluding the TOBACCO FLEA BEETLE, was estimated just under a million dollars. The state-wide average percentage of cotton squares infested by the BOLL WEEVIL ranged from 15.8 to 22.6 in treated fields in late July and early August, and untreated fields ranged from 29.8 percent to 58.9 percent in the same period. First BOLLWORMS of the season appeared in south central counties on August 1. Infestations of TWO-SPOTTED SPIDER MITE and Tetranychus cinnabarinus on cotton varied greatly and in general caused considerable damage. SCREW-WORMS were severe in the southern half of the State from the coast to the western border. Veterinarians reported treating over 450 cases in September. GNATS greatly reduced fieldworker efficiency in the Coastal Plain late in the season, and CATERPILLARS possessing urticating hairs were more abundant than in the four preceding years. The SALT-MARSH MOSQUITO continued its plague of coastal residents and tourists. GIANT HORNETS became more abundant as pests. Cured meat suffered the heaviest losses in years to the CHEESE SKIPPER.

Cereal and Forage Crops: ALFALFA WEEVIL (Hypera postica) was active noticeably in southern North Carolina by mid-February. The first cutting of about 21,000 acres would have been destroyed had it not been protected by insecticides.

*Summarizing over 950 reports of more than 150 individuals representing over 24 Federal, State and private agencies who submitted specimens or data regarding 341 species of the 11,000 arthropods known to be in North Carolina.

The most severe injury would have occurred in the area east of a line through Davidson and Union Counties. A total of 42 additional counties was found infested for the first time. The heaviest incidence in years of the CLOVER LEAF WEEVIL (*Hypera punctata*) on alfalfa hindered early determinations because of the similarity of the larvae of the two species. It was estimated that the first cutting of about 21,000 acres of alfalfa were sprayed an average of about 1½ times. Infestation of 20 percent of the plants in fields of alfalfa by the MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) was not uncommon in western North Carolina in late April and early May. The VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) stripped plants in some alfalfa fields in Richmond County in late September. The only infestation of the SPOTTED ALFALFA APHID (*Therioaphis maculata*) of economic importance occurred in Wake County during a three-week drought, but rain halted its damage in that instance. Corn in the southeastern part of the State was seriously damaged by larvae of BILLBUGS (*Calendra* sp.). Losses necessitating replanting were common throughout the area which extended inland beyond previous areas of severe damage. A high percentage of the corn crop in Nash County was infested with the SOUTHERN CORNSTALK BORER (*Diatraea crambidoides*). Lower leaves of partially grown corn were mined by the CORN BLOTCH LEAF MINER (*Agromyza parvicornis*) in a thirty-mile-wide area in Currituck County. Adults of the JAPANESE BEETLE (*Popillia japonica*) caused incomplete kernel set by feeding on the silk tips. Oviposition rates of the CORN EARWORM (*Heliothis zea*) on sweet corn were lower this year than during any of the previous three years. In mid-June and again in mid-July the weekly oviposition count dropped to zero. Early season counts were about the same as in 1956 but late season counts did not approach those of 1956 or 1955. Late sweet corn was attacked severely by the FALL ARMYWORM (*Laphygma frugiperda*) with up to 30 percent of the stalks infested in Duplin, Stanly and Wake Counties. Damage by a NITIDULID (*Carpophilus sayi*) was more evident in sweet corn this year than in past years in Duplin and Iredell Counties. Soybeans were defoliated severely throughout the southern Coastal Plain by VELVETBEAN CATERPILLAR before the beans had set, thus decreasing or completely eliminating seed production. The MEXICAN BEAN BEETLE (*Epilachna varivestis*) was light to moderate on beans, and the CORN EARWORM caused moderate injury to soybeans in limited areas of the Coastal Plain and Piedmont. In Edgecombe County, GRASSHOPPERS (*Melanoplus* sp.) were the most important pest of soybeans in September. Heads of wheat and other small grains were clipped in limited areas of the southern Piedmont and northern Coastal Plain by the ARMYWORM (*Pseudaletia unipuncta*). Some fields suffered 60 percent losses but most were nearer 20 percent.

Peanuts in the northern Coastal Plain were injured severely by the TOBACCO THRIPS (*Frankliniella fusca*) in mid-June. In late July and August, usually less than 3 percent of the plants were injured by a ROUND-HEADED BORER (*Prionus* sp.) in some localities in the northern Coastal Plain. Later in the same area the CORN EARWORM was reported light to heavy and the TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was general and moderate to heavy throughout August. Peanut plants in the southern Coastal Plain were stripped of the foliage in local areas by the VELVETBEAN CATERPILLAR in early September. Later the insect was found eating peanuts in the stacks. In late August the YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) and the FALL ARMYWORM (*Laphygma frugiperda*) caused local damage to peanuts in Martin and Pender Counties, respectively.

Fruit Insects: Blueberries in Beaufort County were infested with a WAX SCALE (*Ceroplastes* sp., near *ceriferus*) which has been on the increase in distribution and density in recent years. Larvae of the RASPBERRY CANE BORER (*Oberea bimaculata*) were taken from a forty-acre field in Pender County where tunneling and loss of plants had occurred. Grapes in many home plantings in Graven and Pitt Counties suffered 70 percent defoliation by the GRAPE LEAF SKELETONIZER (*Harrisina americana*).

Truck Crop Insects: Wax beans suffered 70 percent to 90 percent of the pods damaged by the CORN EARWORM (*Heliothis zea*) on over 250 acres in Chowan County in early June and resulted in the rejection of the last half of the crop by the canners. BEAN LEAF BEETLE (*Cerotoma trifurcata*) was more abundant than usual on beans in Granville and Jones Counties, causing moderate damage. MEXICAN BEAN BEETLE (*Epilachna varivestis*) was light to moderate over the Coastal Plain throughout the season. COWPEA CURCULIO (*Chalcodermus aeneus*) was injurious noticeably to green beans in Halifax and Wake Counties in mid-July. The TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) was injurious to green beans in Wake and Lenoir Counties in late July and early August. The first adults of the IMPORTED CABBAGEWORM (*Pieris rapae*) was seen in Duplin County during the week of April 12. The pest caused severe damage in local areas in Haywood County. CABBAGE LOOPER (*Trichoplusia ni*) was reported abundant and difficult to control on cabbage in Granville County in September. Collards suffered rather severe losses to CABBAGE APHID (*Brevicoryne brassicae*) in the northern Coastal Plain in February and in Bladen County in November. Pepper plants were injured in Columbus County by the COWPEA CURCULIO (*Chalcodermus aeneus*). Untreated Irish potatoes had lost 2/3 of the foliage to the COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) by May 17 in Duplin County. Fields of Irish potatoes past bloom in the Weeksville area of Pasquotank County averaged 4.5 to 5.5 larvae of EUROPEAN CORN BORER (*Pyrausta nubilalis*) per plant on May 30. Those fields in bloom on May 30 were not infested. Potatoes in adjacent Currituck and Camden Counties also were injured. LEAF-FOTTED BUG (*Leptoglossus phyllopus*) caused severe wilting of terminals of Irish potatoes, locally, in Duplin, Moore and Haywood Counties. Sweetpotatoes in Onslow County were severely damaged in some areas by WIREWORMS. Tomatoes suffered some damage early in the season in Granville and Wake Counties due to the TOMATO FRUIT-WORM (*Heliothis zea*).

Tobacco Insects: Tobacco was without apparent injury due to APHIDS during the season. They did not become noticeably abundant until mid-June or early July. CUTWORMS were unusually scarce on tobacco in Granville County during the early season. GRASSHOPPERS were general and very light in the Coastal Plain through late June. STINK BUGS caused some wilting of terminals in some fields in Columbus and Pender Counties but without distinct evidence of injury. JAPANESE BEETLE (*Popillia japonica*) severely defoliated limited areas of tobacco in Pitt County. Several acres also were injured by a SOD WEBWORM in Sampson County. The first eggs and larvae of the TOBACCO BUDWORM (*Heliothis virescens*) were seen on tobacco in Granville County on May 22. During the same week infestations in the Coastal Plain and Piedmont ranged from none to 32 percent of the plants examined. During the last week in May the same area averaged 3.5 larvae per 25 tobacco plants. From early June through mid-July there was a continued general decrease in infestation. In early May, infestations of the TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) were general on newly set tobacco in the Coastal Plain with local damage severe enough to cause delay in growth. Infestations were general and light to moderate in the Piedmont in mid- and late May except Forsyth County which had an average of 128 beetles per 40 plants. The first eggs of HORNWORMS (*Protoparce* spp.) were found in Granville County on May 20 with more southerly fields showing 1 percent to 20 percent of the plants infested during the same week but infestations in the Oxford area never approached those in more southern areas of the State. The following averages are indicative of the infestations during the two weeks at the peak of the second brood. Note that on July 5, as one proceeds northward (down the table), there is a progressive decrease in the number of eggs oviposited indicating the presence of an oncoming northward-moving wave. The crest of the wave would appear to reach Clayton during the week of July 12. Thus, if such a wave of oviposition is, in fact, found to exist, its movement from the southern to the northern border occurs in two to three weeks.

Average Number of Eggs of the Second Brood of Hornworms per 50 Tobacco Plants in Five Areas of North Carolina - July 1957.*

Location	Week ending	Eggs
Cerro Gordo	5 July	26.6
	12 July	0
Whiteville	5 July	4.3
	12 July	10.3
Greenville	5 July	2.4
	12 July	13.6
Clayton	5 July	0.7
	12 July	23.0
Oxford	5 July	0
	12 July	0

In July a survey of 50 fields of flue-cured tobacco in all belts except the border belt indicated that farmers were loosing \$2.23 per acre due to BUDWORMS and HORNWORMS. This was a total loss of just under one million dollars which is very comparable to a similar survey conducted throughout the season in 23 fields in all belts except the old belt. This estimate is at considerable variance to that of the opinion of a group of agricultural workers who estimated the loss of tobacco to insects in 1957 at 6.2 percent of the crop or about 30 million dollars. WIREWORMS (*Conoderus vespertinus* and *C. lividus*) injured newly set tobacco plants causing replanting in numerous fields in the Coastal Plain. Infestations were as high as 75 percent in Robeson County, 35 percent in Wilson County, 40 percent in Wake County and 98 percent in Jones County but the average was much lower. The VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) and WHITE-FRINGED BEETLES (*Graphognathus* spp.) injured tobacco plants in limited localities. Burley tobacco suffered little damage by insects except very light damage by the TOBACCO BUDWORM (*Heliothis virescens*).

Cotton Insects: Infestations by the BOLL WEEVIL (*Anthonomus grandis*) throughout the State are summarized in the following table:

Summary of Average Percent of Square Infestation by the Boll Weevil in North Carolina as Surveyed by County Agents

Date	Treated with insecticides		Not treated with insecticides	
	No. of farms	Average % of squares infested	No. of farms	Average % of squares infested
21 June	32	24.8	31	24.8
28 June	71	19.3	50	35.2
5 July	93	16.9	38	32.5
12 July	122	15.8	49	29.8
19 July	142	12.1	34	41.5
26 July	140	18.6	35	43.8
2 August	131	12.6	21	58.9
9 August	55	22.6	4	39.3

Last-instar larvae of the TOBACCO BUDWORM (*Heliothis virescens*) were first noticed in bolls on August 1 in Scotland County. The COTTON APHID (*Aphis gossypii*) came to attention in late July and early August only in localized areas. Adults of the COTTON LEAFWORM (*Alabama argillacea*) were caught first

*Original data collected by F. E. Guthrie, R. L. Baron, and M. H. Farrier.

in the light traps in early September. By mid-September larval damage began appearing in middle and northern Coastal Plain but was too late to cause reduction in yields. In late July and early August general widespread and moderate to severe damage by SPIDER MITES (Tetranychus telarius and T. cinnabarinus) became evident throughout the State.

Forest, Shade and Ornamental Insects: First adult emergence during the season of the JAPANESE BEETLE was on May 20 in New Hanover County. Adults were more abundant than in past years, especially in Duplin and Henderson Counties. Nymphs of Brood XIV of the PERIODICAL CICADA (Magicicada septendecim) first emerged in Buncombe County, April 19. Infestations were not observed at lower altitudes of some of the western counties, but damage to nursery, fruit and forest trees in most counties was serious locally with as many as 5 to 10 females attempting to deposit eggs in small branches. A SPIDER MITE (Eotetranychus clitus) was injurious particularly to the Formosa azalea which is the only variety it noticeably injures. Boxwoods in the Coastal Plain and Piedmont were damaged by a SPIDER MITE (Eurytetranychus buxi). Elms throughout the State were skeletonized, in some cases severely, by the ELM LEAF BEETLE (Galerucella xanthomelaena). An infestation of American holly by a HOLLY LEAF MINER (Phytomyza species) destroyed 50 percent of the leaf area of an ornamental planting in Forsyth County. BAGWORMS (Thyridopteryx ephemeraeformis) locally defoliated junipers throughout the Piedmont. A BURROWING WEBWORM (Acrolophus sp.) and larvae of the GREEN JUNE BEETLE (Cotinis nitida) were principal pests in lawns throughout the State. The principal pest of the magnolia was the MAGNOLIA SCALE (Neolecanium cornuparvum). The MIMOSA WEBWORM (Homadaula albizziae) injured mimosa and some locust trees in the northern Piedmont. SOLITARY OAK LEAF MINER (Cameraria hamadryadella) was more severe than usual in 1957 in the Piedmont, and SPIDER MITES (Oligonychus sp.) caused discoloration of foliage in local areas throughout the Piedmont. NANTUCKET PINE MOTH (Rhyacionia frustrana) injured isolated plantings throughout the Coastal Plain. SOUTHERN PINE BEETLE (Dendroctonus frontalis) was a pest of pine, particularly in Buncombe and Cherokee Counties. WHITE-PINE APHID (Cinara strobi), WHITE-PINE SAWFLY (Neodiprion pinetum) and WHITE-PINE WEEVIL (Pissodes strobi) injured white pine in local areas.

Insects Affecting Man and Animals: First infestations of the SCREW-WORM (Callitroga hominivorax) came to the attention of a veterinarian in McDowell and Avery Counties on June 17. By mid-July it had become general in Avery, McDowell and Burke Counties and caused loss of a calf in Lincoln County. In late July reports of the SCREW-WORM were confirmed from the central and southeastern counties. Reports to the State Veterinarian in September exceeded 462 cases, mainly from counties in the southern half of the State. Infestations of the IMPORTED FIRE ANT (Solenopsis saevissima var. richteri) were found in November in Brunswick County and on December 16 in Mecklenburg County, both at or near sites of known previous infestations which were believed to have been eradicated. Again, eradication has been attempted. Surveys of the third site in Wake County, previously located and eradicated, have failed to reveal any infestation at this time. Principal pests of dogs were the BROWN DOG TICK (Rhipicephalus sanguineus) and SCREW-WORM. A much wider variety of insects and related pests directly affecting man was reported this year than in past years. SALT-MARSH MOSQUITOES (Aedes sollicitans) continued their plague of coastal residents and tourists. Some areas had biting counts running as high as 50 per minute. In mid-July very low populations of the SALT-MARSH MOSQUITO were present along the coast but in late August, with increasing rains, they were general along the coast and severe from Carteret County southward. They continued abundant in the latter areas through September. PUSS CATERPILLAR (Megalopyge sp., prob. opercularis) was unusually abundant throughout the Piedmont in late August as were larvae of a FLANNEL MOTH (Norape cretata) in Wilkes County. Larvae of both species caused "stings" to children and adults. Those of the PUSS CATERPILLAR, in some instances, required medical attention. The AMERICAN DOG TICK (Dermacentor variabilis) caused temporary paralysis of a Pender County girl by attaching

to the back of her neck. DEER FLIES were abundant in the swamps around Currituck Sound in early May and in some areas of Davie and Carteret Counties in early July. During July and August large numbers of the COMMON MALARIA MOSQUITO (*Anopheles quadrimaculatus*) were present in the Kerr Lake area. The SOUTHEASTERN SCORPION (*Vejovis carolinus*) was active in Polk County during July. GNATS were a severe problem in September in the Coastal Plain in that they caused loss of efficiency of field workers by flying around their faces.

Household Pests: Residents of New Hanover County were pestered with a LYGAEID BUG (*Ischnodemus falicus*) swarming about houses in early November. The BROWN DOG TICK (*Rhipicephalus sanguineus*) was a pest in homes throughout the State, and in all cases there was a history of having a dog in the house. BROWN SPIDER BEETLE (*Ptinus hirtellus*) was a pest in some homes in the Coastal Plain in April. CIGARETTE BEETLE (*Lasioderma serricornis*) invaded business offices and homes in large numbers in one locality in Guilford County in September. The GIANT HORNET (*Vespa crabro germana*) became more abundant this year, especially in Wake County. At dusk they were attracted to porch and entrance lights. A commonly reported initial nesting site was an unoccupied bird house on the premises. MILLIPEDES caused people to temporarily abandon homes in part of the city of Concord in June. Adults of the SOUTHERN PINE SAWYER (*Monochamus titillator*) emerged from walls of homes in Edgecombe, Alexander, and Davie Counties. BLOW FLIES were particularly abundant during January and February in Duplin County. HOUSE FLIES (*Musca domestica*) were noted to be extremely abundant in some areas at certain times, usually where little attention was given to control.

Structural Pests: The OLD-HOUSE BORER (*Hylotrupes bajulus*) infested houses from the mountains to the coast, one house within two years of erection. Infestations by the SOUTHERN LYCTUS BEETLE (*Lyctus planicollis*) were limited mainly to the Piedmont in houses and furniture.

Stored-Product Pests: The heaviest damage by the CHEESE SKIPPER (*Piophilina casei*) in years was seen in cured meat in the State. Grain products suffered losses to the SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*), the CONFUSED FLOUR BEETLE (*Tribolium confusum*) and the RED FLOUR BEETLE (*T. castaneum*). Improperly stored Irish potatoes in the Coastal Plain were attacked by the POTATO TUBERWORM (*Gnorimoschema operculella*) from May through August. Some of the lots infested contained over 150 bushels.

Beneficial Insects: HONEY BEES (*Apis mellifera*) had favorable weather conditions for early spring brood-rearing. Swarming, usually confined to early May, continued on through most of June. A common parasite of white grubs, a SCOLIID (*Scolia dubia*) was seen in Alamance and Yancey Counties in August. Larvae of FLOWER FLIES were attacking actively aphids on collards in Bladen County in November.

Miscellaneous Pests: Requests for aid in control of the EARTHWORM MITE (*Fuscuropoda agitans*) continued to increase this year. Reports of infestations were limited to the Coastal Plain.

SUMMARY OF INSECT CONDITIONS - 1957

IDAHO

Compiled by A. R. Gittins

Highlights: ALFALFA WEEVIL was general throughout alfalfa areas of southern Idaho with total damage much below 1956. Many species of APHIDS were unusually abundant due primarily to favorable spring weather conditions for aphid increase. PEA APHID, ENGLISH GRAIN APHID, APPLE APHID and ROSY APPLE APHID were among the most abundant species. BEET LEAFHOPPER was more abundant than during 1956 with considerable increase in the incidence of curly-top on beans. CHERRY FRUIT FLY populations increased in recently infested southern areas and extensions of known infested areas were recorded. CLOVER SEED WEEVIL surveys during 1957 indicate distribution over most of the state. GARDEN SYMPHYLID problems increased on a variety of crops with four new county records. LARCH CASEBEARER infested over 15,000 acres in St. Maries area. First recorded occurrence in western forests. MEADOW SPITTLEBUG is now apparently well established in northern areas. ONION MAGGOT continued in unusually high populations in Boise Valley. SITONA WEEVILS were common almost statewide in legumes in southern areas. SPOTTED ALFALFA APHID was not recorded from Idaho during 1957. A STORED GRAIN MOTH (*Haplotinea ditella*) was found in grain mill at Arimo. First record of occurrence in United States.

Cereal and Forage Insects: Overwintered ALFALFA WEEVIL (*Hypera postica*) adults became active throughout the southwest during late March. Damage was generally minor to first-crop alfalfa. A few fields in the south central area showed 20-50 percent foliage loss. By June larvae were retarding second cutting in many southwestern and south central areas. Some alfalfa fields near Grangeville were heavily infested during mid-June with considerable foliage loss. Parasites became relatively abundant in the southwest by late June. Populations in eastern area were more moderate than in west or central areas. ALFALFA CATERPILLAR (*Colias philodice eurytheme*) adult populations were below 1956 numbers statewide but were common in some counties. Larval feeding was minor except one area near Twin Falls where injury was extensive to beans, potatoes and sugar beet fields adjacent to alfalfa. ALFALFA LOOPER (*Autographa californica*) caused marginal damage to bean fields in south central areas after migrating from recently cut alfalfa. Adults of a CLOVER ROOT CURCULIO (*Sitona flavescens*) averaged 1 per sweep in second cutting red clover near Nampa during July. This insect is becoming more common in forage crops in southwestern Idaho. BROWN WHEAT MITE (*Petrobia latens*) continued to cause slight damage to grain in southeastern areas. CLOVER APHID (*Anuraphis bakeri*) increased rapidly in early August in some red clover fields in Canyon and Twin Falls Counties where up to 95 percent of blossoms were infested. Some extremely heavy populations were noted on clover seed fields in northern Idaho during mid-July. A CLOVER BUD CAPTEPILLAR (*Grapholitha conversana*) destroyed up to 90 percent of blossoms in spots some alsike clover fields near Grangeville. CLOVER LEAF WEEVIL (*Hypera punctata*) was abundant in alfalfa in the Weiser area and caused some injury. CLOVER ROOT BORER (*Hylastinus obscurus*) populations reached 10-15 larvae and pupae per root in some southwestern fields. By September damaging populations were present on many second-year red clover fields in Canyon County. CLOVER ROOT CURCULIO (*Sitona hispidula*) adults were general in alfalfa and clovers throughout the State by early May. In northern and eastern areas feeding damage was minor. Southwestern adult populations varied from 4-16 per crown in early July. By mid-July red clover seed fields near Nampa and Roswell were infested with up to 40 larvae per square foot. CLOVER SEED CHALCID (*Bruchophagus gibbus*) was adults ranged 1-6 per sweep in most red clover seed fields of Canyon County during summer. Statewide surveys during July and August indicate CLOVER SEED WEEVIL (*Miccotrogus picrostris*) is now distributed throughout most of the state. Populations were abundant on

clovers in northern counties with mating general and populations often exceeding 5 per sweep by June 30. There were few reports of CORN EARWORM (Heliothis zea) with negligible larval feeding damage during 1957. Over-all CRICKET populations averaged less than 1 per square yard in surveys during late April. Populations of Steiroxys pallidipalpus were noted over wide areas of Ada, Gem and Payette Counties with occasional counts of 10 per square yard. In late spring and early summer infestations of Mormon crickets developed on range areas of Payette and Gem Counties. High populations occurred in southeast Adams, Western Valley, northeast Gem, central Custer and small localized areas in Fremont, Bonneville, Caribou, Payette and Washington Counties. Extended warm, dry, fall weather allowed crickets to lay near maximum numbers of eggs. ENGLISH GRAIN APHID (Macrosiphum granarium) was on grain in northern areas by the second week in July. Infestations were general and heavy. In the Grangeville area 80 percent of the heads were infested averaging 5-50 aphids per head. Heavy infestations were also reported on 4,000 acres of grain in Kootenai River bottom area. By July 19 spring grains in northern counties averaged 8 per head with 6.4 percent parasitism. By August 2 parasitism and predation had reduced aphid numbers below economic levels. Yield losses were low. GRASSHOPPER activity was considerably above that of 1956. Fall surveys indicate that approximately 450,000 acres of crop and rangelands will require treatment during 1958. Statewide approximately 90 percent of each economically important infestation was composed of Melanoplus bilituratus with local scattered infestations of M. bivittatus, Oedaleonotus enigma, Asemoplus montanus, Cannula pellucida, M. foedus, M. packardii and M. femur-rubrum. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) larvae were found in 68 percent of red clover heads near Middleton with 63 percent parasitism June 7 and in 28 percent near Nampa with 8 percent parasitism. Populations were abundant on some white clover in the Mountain Home area with damage to developing heads. By late June extremely heavy populations of newly emerged adults were in red clover in Washington County.

LINED STALK BORER (Oligia fractilinea) was feeding on stems of Agropyron subsecundum at Aberdeen with some reduction in seed yield noted. LYGYUS BUGS were light on alfalfa and clover in south central and eastern Idaho, never averaging more than 2 per sweep as late as June. Nymphal populations of 10 per sweep were found on white clover in Nez Perce County by mid-June. Populations remained relatively low in most southeastern and south central areas but became numerous by early September in untreated alfalfa. In most cases Lygus hesperus was considerably more abundant than L. elisus or L. desertus. MEADOW SPITTLEBUG (Philaenus leucophthalmus) and other spittlebug species were common and occasionally abundant particularly on alfalfa and red clover in northern areas. Surveys indicate that overall spittlebug populations are increasing in northern counties. A PYRALID MOTH (Parargyractis kearfottalis) was found in exceedingly large numbers in the adult stage in legume fields in Owyhee and Canyon Counties. This is the first time this moth has been found in such numbers in Idaho and the reasons for the superabundance are unknown. PEA APHID (Macrosiphum pisi) infestations were general on alfalfa in southern areas by mid-May and numerous severe infestations developed by mid-June. Populations in southeastern and south central areas were generally lower than in the southwest. RED-BACKED CUTWORM (Euxoa ochrogaster) larvae numbered 4-6 per square foot in scattered spots throughout clover fields in northern Valley County but were lighter than in 1956. Intermittent but extensive surveys failed to determine the presence of SPOTTED ALFALFA APHID (Therioaphis maculata) in Idaho. SWEETCLOVER WEEVIL (Sitona cylindricollis) caused considerable damage to sweetclover stands in some areas, particularly southern Idaho. A PLANT BUG (Irbisia sp.) damaged wheat grasses locally and injured wheat fields in Payette area during late June. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was often abundant causing moderate to heavy damage to legumes and corn throughout southern areas with most severe infestations in the Boise Valley and the Idaho Falls areas confined to red clover or alfalfa. SWEETCLOVER APHID (Myzocallidium riehmii) was present on most sweetclovers throughout southern Idaho but of little or no economic importance. WIREWORMS AND FALSE WIREWORMS continued to cause some losses to dryland crop

areas throughout the State. Much irrigated land, however, has been treated for wireworm control and these insects are becoming of less concern.

Fruit Insects: APPLE APHID (Aphis pomi) populations increased rapidly in southern areas after mid-May and by late June severe infestations were found throughout southwestern counties and at Idaho Falls. Considerable injury to new growth resulted where control measures were omitted in southwestern and southeastern areas. BLACK CHERRY APHID (Myzus cerasi) was above normal with moderate to severe infestations on cherries in some areas. BLACK VINE WEEVIL (Brachyrhinus sulcatus) caused moderate to severe root injury to strawberry plantings in Nez Perce County during June. CODLING MOTH (Carpocapsa pomonella) infestations were generally below 5 percent in properly sprayed commercial orchards but often reached 100 percent where control measures were neglected. CURRENT FRUIT FLY (Epochra canadensis) infested a planting of gooseberries in Roswell during early June with approximately 30 percent yield loss. EUROPEAN RED MITE (Panonychus ulmi) was common throughout fruit areas of state with high populations general on apples and in prune orchards in southwestern counties. High populations in commercial orchards probably resulted from improper timing of control measures. EYE-SPOTTED BUD MOTH (Spilonota ocellana) infestations were severe in some orchards during mid-May. GREEN PEACH APHID (Myzus persicae) populations were generally above 1956 being common and occasionally abundant in fruit growing areas of southeastern and eastern Idaho. A LEAF TIER was common on various species of Prunus in all parts of southeastern Idaho during June; occasional severe damage on commercial plums. MEALY PLUM APHID (Hyalopterus arundinis) built up rapidly in late spring in southwestern areas on plums and continued abundant in orchards particularly around Nampa following control measures. PEACH TWIG BORER (Anarsia lineatella) was minor during 1957 but some damage was evident near Emmett. PEAR LEAF BLISTER MITE (Eriophyes pyri) was common in orchards in southwestern areas and scattered infestations were noted in other areas. Considerable injury occurred on pears and pear foliage in the Lake Lowell area. PEAR PSYLLA (Psylla pyricola) adults were general in pear orchards in the Boise Valley by April 8 and fourth and fifth-instar nymphs were noted by mid-May. In well-sprayed Canyon County orchards during July no nymphal populations were seen but some migrant adult forms were observed.

CLOVER MITE (Bryobia praetiosa) was general during 1957 with few severe infestations recorded. FRUIT TREE LEAF ROLLER (Archips argyrospila) caused considerable rolling of leaves and defoliation on plum in Bonner County. PEAR-SLUG (Caliroa cerasi) was common on pears and cherries in southeastern areas with serious damage in some cases, generally minor in western areas. ROSY APPLE APHID was exceedingly abundant in southwestern orchards. Even where control measures were utilized populations continued high partly as a result of population pressures. Early attacks were severe with many older leaves damaged prior to July. SAN JOSE SCALE, LECANIUM SCALE and EUROPEAN PEACH SCALE were present as scattered infestation throughout orchard areas of State but relatively unimportant except where controls neglected. STRAWBERRY APHID (Pentatrichopus fragaefolii) occurred in very low numbers two commercial untreated strawberry fields in Canyon County. STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) adults were common in western Idaho by early May with populations of 1-3 moths per plant in southwestern areas. By late June heavy infestations were observed in commercial strawberry fields in southwestern Idaho with pupation just commencing. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was common and often abundant on a wide variety of fruit crops occasioning considerable injury. Above normal populations continued partly due to poor timing and poor coverage of chemical sprays. WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) adults were first collected from stickyboards in Washington County in late May and Twin Falls area June 6. Infestations averaged 2-3 maggots per cherry in non-controlled trees. Surveys during 1957 indicated this insect is well established in Twin Falls and Washington Counties and has extended its range to Ada County.

Truck Crop Insects: POTATO APHID (*Macrosiphum solanifolii*) was the most prevalent aphid on potatoes but was generally low.

ASPARAGUS BEETLE (*Crioceris asparagi*) adults were often extremely abundant on asparagus patches in southwestern areas. One of the highest BET LEAFHOPPER (*Circulifer tenellus*) populations since 1943 entered the fall of 1956 and winter of 1956 and winter of 1956-57 under favorable conditions. During March and April host plants were generally abundant and widely distributed. Overwintering adults left range areas and entered cultivated crops by late April. Representative breeding areas averaged 78 adults per 100 square feet of weed host as compared with 25 in 1956 and an average of 31 for the past 15 years. Egg laying began in late March and hatching in early May. Cool damp spring weather caused a higher than average mortality but also extended the life of desert spring host plants which aided normal development and maturation of spring generation leafhoppers. Movement of leafhoppers in cultivated areas was also extended over a longer than usual period. The insects were first noted in sugar beet fields near Buhl on May 29. By July 31 adults had moved into contract bean fields west of Jerome and Twin Falls causing an estimated damage exceeding \$500,000 by transmitting curly-top virus disease to beans, whole fields being plowed up during this period. BET WEBWORM (*Loxostege sticticalis*) spring generation larvae appeared in young sugar beet plantings in American Falls area in Late June. Second generation populations failed to develop on sugar beets and damage during 1957 was negligible. CABBAGE APHID (*Brevicorvne brassicae*) became abundant during June on cabbages in the Parma area. By late July numbers were abundant on 5,000 acres of rape in Lewis County but damage was minor. CABBAGE LOOPER (*Trichoplusia ni*) damaged numerous fields of lettuce in Canyon County during late May and early June when larval populations, mostly second instar, ranged 0-5 per plant. CABBAGE SEEDPOD WEEVIL (*Ceutorhynchus assimilis*) populations reached 5 adults per sweep in turnip seed field near Fruitland and on rape seed fields in Nez Perce County during May. Damage was light to moderate.

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) infestation was general with highest numbers in northern Bingham, Bonneville and Fremont Counties and appeared better established in northern Butte and Custer Counties than previously. Severe infestation occurred on potatoes near Burley with exceptionally heavy egg laying. Spotted infestations continued in northern Bingham, Fremont and Bonneville Counties as late as mid-August and third control treatments were required. GARDEN SYMPHYLID (*Scutigereilla immaculata*) increased in importance rapidly during 1957. New county records of damage for 1957 on truck crops were from Canyon, Clearwater, Nez Perce and Payette Counties. A LEAFHOPPER (*Empoasca filamenta*) gradually built up through the summer with highest numbers of 60-70 per sweep in September on potatoes. Some severe foliage discoloration occurred in many potato fields eastern area. LESSER BULB FLY (*Eumerus tuberculatus*) maggots appeared in commercial onion bulbs in Canyon County by August 1. Prior to this most injury had been confined to bulbs of seed onions. A LETTUCE APHID (*Macrosiphum barri*) was below average abundance. ONE-SPOT STINK BUG (*Euschistus variolarius*) was extremely abundant in home gardens at Lenore and Peck. ONION MAGGOT (*Hylemya antiqua*) adults became abundant in Canyon County onion growing areas during early April. Early maggot injury wiped out 200-300 acres of seedling onions. Early damage, however, was lighter than during 1956 and the degree of late damage was not as high as anticipated. Many growers carried on fair control programs and reduced populations by mid-season. Seed production was cut by 50 percent in some isolated cases with a probable over-all seed production loss of 10 percent. Commercial bulb production was 9,200,000 pounds less than 1956 with about 4 percent more acres. About 500 acres were not harvested mainly due to maggot injury. ONION THRIPS (*Thrips tabaci*) populations were generally low on seed and commercial onion in southwestern areas. In south central areas some severe infestations developed on onions and beans. PEA APHID (*Macrosiphum pisi*) built up rapidly in pea and lentil fields from Grangeville north to Benewah County and by mid-June exceptionally heavy populations up to 60 per tip were recorded. Most severe infestations were recorded from unsprayed fields in Latah and Nez Perce Counties. In numerous cases second and third insecticidal

treatments were required. Heavy populations continued through July in some areas. By mid-August populations were on a general decline but losses exceeded \$500,000 on over 75,000 acres. SPINACH LEAF MINER (Pegomya hyoscyami) was above normal for 1957 particularly in the Minidoka-Power-Bingham County area and caused injury to sugar beets throughout this area. SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) damage was apparent in improperly treated fields near Idaho Falls during August. TOMATO HORNWORM (Protoparce quinquemaculata) was spotted with some light infestations. WESTERN BEAN CUTWORM (Loxagrotis albicosta) adults began emerging in late July at Rupert but failed to materialize as a pest of beans in southern areas and no commercial dusting or spraying was necessary for control. Appreciable flights of adult moths in Rupert were noted during the latter part of July and throughout most of August. WESTERN BLACK FLEA BEETLE (Phyllotreta pusilla) heavily damaged sugar beets and cabbage fields in Madison County and moderately injured sugar beets in the Boise Valley area. Adults were extremely abundant on broccoli in some areas. WESTERN POTATO FLEA BEETLE (Epitrix subcrinita) infestations were general but variable. Peak populations were reached by mid-August with counts up to 60 per sweep in potatoes. There was considerable larval feeding injury in potatoes for processing. Generally flea beetles more abundant than during past several years. EUROPEAN EARWIG (Forficula auricularia) caused about average annoyance and damage to vegetable crops. LYGUS BUGS (Lygus spp.) were abundant on various vegetable seed crops. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was common on numerous crops and occasionally caused severe injury, particularly on watermelons in the Parma area. Larvae of A LYCAENID BUTTERFLY (probably Strymon melinus) were found in large numbers causing considerable cluster drop on hops in Canyon County during early August with feeding confined to the clusters.

Forest, Shade Tree, and Ornamental Insects: APHIDS - Owing to spring weather conditions completely favorable to overall aphid buildup, aphid problems on forests, shade trees and ornamentals were greater than those experienced for a number of years. A total of 23 species caused concern to this group of plants in Idaho during 1957. Periphyllus lyropictus became extremely abundant on maples in the Moscow area by the end of May with extensive honeydew production. Anuraphis viburnicola was exceedingly abundant statewide with particularly heavy infestations in southwestern and south central areas. Numerous snowball bushes were drastically pruned to prevent complete loss. BARK BEETLES, particularly the DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) continued abundant causing losses to forests which were difficult to evaluate. Scattered infestations of BLACK-HEADED BUDWORM (Acleris variana), involving several thousand acres of hemlock and grand fir forests in the Kanixsu National Forest, caused heavy defoliation during late summer. Heavy infestations of BLACK PINE LEAF SCALE (Aspidiotus californicus) were noted on ponderosa pine in a small area of the lower Potlatch River Valley with some tree mortality evident. A BILLBUG (Calendra parvula) caused considerable damage to lawns at Buhl during mid-summer. DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) larval specimens were collected from Craters of the Moon area in late July, which has extended the known area of distribution in the State. ELM LEAF BEETLE (Galerucella xanthomelaena) caused almost complete skeletonization of many elms in southwestern area in spring. Second-generation larvae completely skeletonized great numbers of elm trees in Canyon, Payette and Washington Counties. COTTONY-MAPLE SCALE (Pulvinaria innumerabilis) was severe Gooding, Jerome, Twin Falls and some other areas. FOREST TENT CAPERPILLAR (Malacosoma disstria) caused considerable damage to green ash in southwestern Bingham County. Elsewhere infestations were spotted with only minor defoliation. CHRYSOMELIDS (Altica spp.) were extremely abundant on willow on the south fork of the Salmon River with approximately 80 percent of foliage destroyed. EUROPEAN EARWIG (Forficula auricularia) infestations were moderately heavy throughout most of State and caused considerable annoyance. CLOVER MITE (Bryobia praetiosa) was abundant statewide in lawns and flower gardens with damage often evident. Defoliation by A LARCH BUDMOTH (Zeiraphera griseana) continued to increase from 33,000 acres in 1955 to an estimated 250,000 acres in scattered centers during

1957 throughout northern Idaho and Montana. LARCH CASEBEARER (*Coleophora laricella*) was recorded in the northern part of the State for the first time during 1957. Infestations of approximately 15,000 acres observed in young larch stands near St. Maries where feeding produced severe defoliation. LARCH LOOPER (*Semiothisa sexmaculata*) was found in all examined larch stands but damage was low. A GALL MIDGE (*Dasyneura gleditschiae*) retarded growth in some young honey locusts in the Boise Valley. A MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) outbreak occurred in the Lewiston area on maples and control measures were necessary. MOUNTAIN PINE BEETLE (*Dendroctonus monticolae*) infestations in lodgepole pine timber appeared to be at a low level during 1957. One long-time infestation on privately owned land near Soldier's Reservoir south of Lewiston was still highly epidemic and the beetle was active to a limited extent in white pine stands in the Clearwater National Forest. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) occurred spottedly. PINE BUTTERFLY (*Neophasia menapia*) in large numbers in portions of Nez Perce National Forest lightly damaged ponderosa pine. Adults were also observed in large numbers in various localities within western white pine forests. PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) occurred in spotted infestations. POPLAR BORER (*Saperda calcarata*) infestations on poplars were heavy in the Challis area with considerable damage. POPLAR AND WILLOW BORER (*Sternochetus lapathi*) was found abundantly attacking willows in an area from Moscow east to Elk River during May. ROSE APHID (*Macrosiphum rosae*) was more abundant than normal during 1957. SAGEBRUSH DEF. (*Aroga websteri*) was severe on sagebrush over an area of 1,000 acres northwest of Minidoka. SPRUCE BUDWORM (*Choristoneura fumiferana*) infestations continued to enlarge in distribution and severity during 1957. Ground and aerial surveys revealed approximately 512,300 acres of infestation in the Boise, Challis, Payette, Sawtooth, and Salmon National Forests. A few areas of re-infestation were noted in previously sprayed areas consisting of 16,000 acres in the Boise and 84,000 acres in the Salmon National Forests. Aerial and ground surveys also revealed approximately 200,000 acres of Douglas-fir still infested in the Craig Mountain area of northern Idaho. This latter total of uncontrolled infested acreage represents an increase of about 10,000 acres during 1957. SPRUCE MITE (*Oligonychus ununguis*) appeared in southern Idaho in fir stands sprayed during 1956 to control budworm. Lesser infestations noted outside spray areas but heavy populations and damage coincided with previously sprayed areas. Approximately 22,300 acres were damaged through foliage discoloration.

Insects Affecting Man and Animals: CATTLE GRUBS (*Hypoderma bovis* and *H. lineatum*) were near normal. Many reports of CATTLE LICE throughout southern and northern Idaho were received and with many unsprayed herds heavily infested during late fall and early winter. DEER FLIES were moderately abundant and a considerable nuisance in northern Latah County. Few reports of HOG LICE (principally *Haematopinus suis*) were received. HORN FLY (*Siphona irritans*) caused approximately average annoyance to livestock. MOSQUITOES were above normal during 1957 partly as a result of cool, moist, extended spring weather. They were of considerable nuisance to man and animals in northern areas.

Stored-Product Insects: Extensive surveys in mills, feed stores, etc. failed to disclose the presence of KHAPRA BEETLE (*Trogoderma granarium*) in the State. Except for one moderate infestation in a feed and seed mill in Twin Falls no other reports of LESSER GRAIN BORER (*Rhyzopertha dominica*) were received. SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) was common and occasionally abundant particularly in northern Idaho and especially in grain in storage from current harvest. A GRAIN MOTH (*Haploteina ditella*) was discovered in a grain shipment from Arimo, Idaho, to California in 1956. Surveys in 1957 at the point of shipment disclosed a small infestation of this insect. This was the first recorded establishment of this pest in the United States. Heavy infestations of an APHID (*Anuraphis tulipae*) in gladiola bulbs in storage at Parma.

Household Pests: One heavy infestation of AMERICAN COCKROACH (Periplaneta americana) in a dwelling at Mountain Home. ANTS were particularly abundant in and around dwellings. GIANT CARPENTER ANT (Camponotus levigatus) was exceedingly abundant in and around dwellings in northern Idaho. BOXELDER BUGS (Leptocoris trivitatus) caused annoyance to householders statewide. Numerous reports of CARPET BEETLE (Attagenus spp.) damage. SUBTERRANEAN TERMITES were reported infesting homes at Idaho Falls, Caldwell and Parma.

Beneficial Insects: LADY BEETLES were abundant on many crops in the Clearwater River Valley and the Moscow area throughout the summer. By late June they were becoming abundant in much of southern Idaho. OTHER PREDATORS were at or above normal numbers during 1957. In one localized area near Lewiston mature larvae of KLAMATHWEED ROOT BORER were common in Klamathweed roots by mid-April and were causing some plant mortality. A KLAMATHWEED BEETLE (Chrysolina gemellata) continued to severely reduce Klamathweed stands in the Clearwater and Salmon River areas during 1957. PREDACIOUS MITES (Typhlodromus spp.) were relatively abundant in many legume areas where two-spotted mite populations were high. A MINUTE PIRATE BUG (Orius tristicolor) ranged from 2 to 20 per sweep in alfalfa and red clover seed fields in southern Idaho by late August.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

LUCERNE-FLEA* (Sminthurus viridis Lubbock)

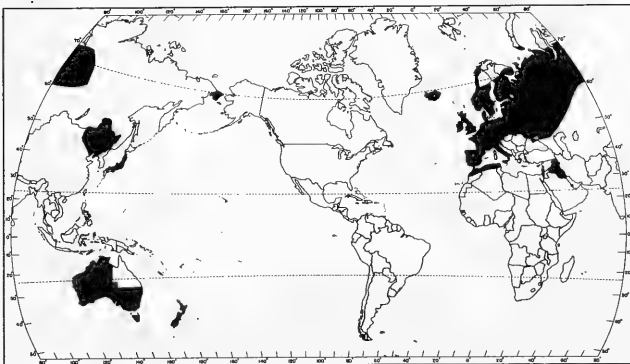
Economic Importance: This springtail is a serious pest of pasture and field crops, particularly legumes. It is considered to be the most troublesome pest of clover and alfalfa in the wetter parts of South Australia, and has been recorded as damaging on occasions in Europe. It is active only during the wet season, the length of the period varying according to the district or type of season. There are usually two peak populations during a season, one during the fall and one in the spring. Populations of as many as 1,298 per square foot have been recorded in New Zealand. During May of 1937 in that country, it was determined that 38 percent of the weight loss of subterranean clover was attributed to lucerne-flea in a section of North Island.

Distribution: Most of Europe, including the British Isles, and the northern coast of Africa. Also recorded from Israel, Iceland, Iraq, Japan, China, New Zealand and Australia (except Queensland).

Hosts: A pest of many plants, but prefers legumes such as clover, alfalfa and peas. Truck crops such as lettuce, turnips and carrots are attacked, especially in seedling stage. Young barley, oats and wheat are sometimes damaged on heavy soils.

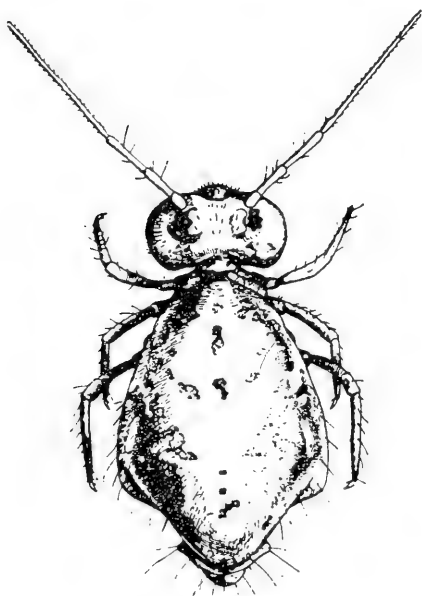


Damage to Clover



General Distribution of Lucerne-flea

Life History and Habits: The eggs are laid on the soil, usually in little batches or heaps of 50 or 60. They are covered with a fluid which upon drying, renders the eggs very difficult to find. Under favorable conditions, eggs hatch in 3 to 4 days in Western Australia. Incubation of the eggs is governed principally by soil moisture. Nymphal development normally takes place in about a month, but varies greatly with weather conditions. The mean monthly temperatures ranging between 52^oF. and 60^oF. accompanied by adequate soil moisture, offer optimum conditions for population growth in New Zealand. In unfavorable conditions, the insect survives in the egg stage. In Scotland, the unfavorable period is winter, when development is inhibited by low temperature, while in South and Western Australia, the unfavorable conditions are in the summer when development is inhibited by low relative humidity. Feeding injury is quite characteristic; small irregular portions of leaf may be eaten away, leaving a ragged hole, or lower surface of leaf may be left intact as a whitish film. The adult jumps rapidly when disturbed, moving distances of up to 12 inches at a time.



Sminthurus viridis Adult

Description: The eggs are yellowish and cylindrical, measuring approximately .25 mm. Newly emerged nymphs are less than 1 mm. in length and yellow in color. As growth progresses, a greenish tinge appears. The adult is about 2.5 mm. in length; body soft and somewhat globular; general color greenish or greenish-yellow with irregular darker patches on the abdomen. It is wingless in all stages and young nymphs resemble the adults except in size.

(Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(13) 3-28-58

Figures (except map): *S. viridis* adult from Jenkins, C. F. H. and Forte, P. N. 1948. Jour. Agr. West. Austral. 25(2):116-120. Damage from Dumbleton, L. J. 1938. New Zealand Jour. Sci. and Tech. 20(4A):197A-211A.





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APRIL 4, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

ALFALFA WEEVIL larvae active in some eastern areas. (p. 258).

BOLL WEEVIL winter survival unusually low in Mississippi, North and South Carolina and Virginia. (p. 259).

IMPORTED FIRE ANT distribution and eradication in Texas. (p. 261).

SUMMARY OF INSECT CONDITIONS - 1957 - Washington (p. 264).

BEEF LEAFHOPPER and curly top conditions in the southern Great Plains and adjacent areas in 1957. (p. 270).

Distribution of LESSER CLOVER LEAF WEEVIL. (p. 263).

INSECTS not known to occur in the United States. (p. 271).

ADDITIONAL NOTES. (pp. 262,269).

Reports in this issue are for the week ending March 28 unless otherwise designated.

WEATHER BUREAU 30-DAY OUTLOOK

APRIL 1958

The Weather Bureau's 30-day outlook for April calls for temperatures to average below seasonal normals east of the Appalachians and generally over the southern half of the nation. Above normal averages are indicated over the northern third of the country from the Great Lakes westward to the Pacific coast. In unspecified areas near normal is predicted.

Precipitation is expected to exceed seasonal normals along the Atlantic Seaboard and also west of the Continental Divide. Subnormal amounts are predicted for the Great Lakes Region, Upper Mississippi Valley, and Southern Texas. In the remaining area about normal amounts are in prospect.

WEATHER OF THE WEEK ENDING MARCH 31

An area of high pressure, centered over the Hudson Bay region of Canada extended over the Great Lakes region, the upper Mississippi Valley, and the Dakotas all week, continuing the dry weather regime which has prevailed in these areas throughout most of the winter. March precipitation set new record lows at many stations in Michigan and some marsh and wood fires occurred in central Wisconsin.

In the remainder of the Nation, the effects of several low pressure systems were frequent precipitation and mostly cloudy skies. Precipitation for the week totaled over an inch in most of the South and along the Pacific Coast. Fla. was one of the heaviest rainfall areas, with weekly totals ranging from 1 to 2 inches in central sections and 2 to 4 inches in southern portions. At Fort Myers, Fla., March precipitation through the 30th totaled 10.31 inches, an amount exceeded only by 11.77 inches in March 1852. March has been unusually cloudy in the greater portion of the country. A good example of this is furnished by Boston, Mass., where only 3 clear days have set a new March record. Cloudy skies with frequent precipitation have kept soils too wet to work, except in extreme north-central areas where a few spots are too dry. In the western Great Plains, no significant duststorms in March, owing to wet soil and lack of strong winds, is unusual.

Temperatures for the week averaged above normal along the Canadian Border and below normal elsewhere. From the lower half of the Great Plains to the Atlantic coast, the week was 6° to 9° cooler than normal, and a light freeze occurred in extreme northern Mississippi on the 28th. A few inches of snow fell in the west-central Great Plains on the 28th, but it nearly all melted by the end of the week. The snow cover east of the Rockies is now limited to a few inches in portions of the Upper Michigan Peninsula, up to a foot or more in northern New England, and a few inches in some sections of north-central Pennsylvania and south-central New York State. In the Far West, the ground is bare at nearly all lower elevations. Mountain snow depths increased in the northern Rockies. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - NEW MEXICO - No infestations on wheat in Curry, Roosevelt and Quay Counties. (N. Mex. Coop. Rept.). TEXAS - Light to heavy infestations feeding on small grain in Rockwall, Hunt and Kaufman Counties. (Hawkins).

EUROPEAN CORN BORER (Pyrausta nubilalis) - SOUTH DAKOTA - Survival in fields averaged 73 percent in 7 counties in the east central area. (Hantsbarger).

ENGLISH GRAIN APHID (Macrosiphum granarium) - TEXAS - Reported as heavy on oats and barley in Kaufman County. (Hawkins). LOUISIANA - Small numbers on wheat and oats in St. Joseph Parish. (Clower, Spink).

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Infesting small grain in Brazos County. (Whipplecht).

A LEAFHOPPER (Dikraneura carneola) - UTAH - Active on small grains and grass in northern counties. (Knowlton).

A LEAF MINER (Phytomyza nigra) - OREGON - Infestations in grass and grain fields more numerous than for several years in Benton and Lane Counties. Miners entering pupal stage. (Every, March 23).

A WHEAT SAWFLY (Pachynematus sporax) - CALIFORNIA - Survey of wheat fields in the Cuyama Valley negative to date. Mapping and preparations for treatment of approximately 20,000 acres in the Valley are underway. (Cal. Coop. Rept.).

Wireworm Injury Survey of Field Corn in Maryland, 1957: In early June 35,000 young corn plants in 7 counties, representing all sections and soil types in the State were examined for injury by wireworms. Characteristic injury was found in only 0.5 percent of the plants. Wicomico County showed the highest injury rate of 0.9 percent. Indications are that wireworms were not a general problem in field corn in 1957. (U. Md., Ent. Dept.).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - OREGON - Active with feeding damage on clover and in flower beds in Marion County. (Capizzi, March 23).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Very light infestations in alfalfa fields in Quay and Union Counties. Most populations in southern and eastern areas have declined in number. (N. Mex. Coop. Rept.). TEXAS - Light on alfalfa in Brazos County. (Whipplecht).

POTATO LEAFHOPPER (Empoasca fabae) - FLORIDA - None taken on blue lupine at University of Florida Experiment Station, Gainesville, Alachua County, to March 23. This is probably due to the cold winter. By same date in 1957, 153 had been taken. (Mead).

PEA APHID (Macrosiphum pisi) - DELAWARE - Small colonies on alfalfa in Primehook area, Sussex County. (MacCreary, Conrad). VIRGINIA - Very light in an alfalfa field in Montgomery County. (Morris).

LYGUS BUGS (Lygus spp.) - UTAH - Active in Box Elder, Weber, Salt Lake, Duchesne and Uintah Counties. L. elisus on alfalfa and grass in Cache County. (Knowlton).

CLOVER LEAF WEEVIL (Hypera punctata) - DELAWARE - Few fourth-instar larvae on alfalfa in New Castle and Sussex Counties. (MacCreary, Conrad). VIRGINIA - Present in alfalfa and clover fields in Montgomery, Prince Edward, Nottoway, Lunenburg, Charlotte and Halifax Counties with light damage. (Morris).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Surveys of alfalfa fields on lower Eastern Shore showed light numbers of small larvae hatching in opening leaflets. Activity generally retarded by cool wet weather. (U. Md., Ent. Dept.). NORTH CAROLINA - Larval feeding in Piedmont area almost halted by cold weather. Little or no damage on new growth, some damage to old terminals. (Farrier). VIRGINIA - Adults active in alfalfa in southern part of State. Small larvae observed on alfalfa in Nottoway, Lunenburg, Charlotte and Halifax Counties. Light damage observed in these counties as well as Prince Edward and Montgomery Counties. (Morris).

FRUIT INSECTS

PEAR THRIPS (Taeniothrips inconsequens) - OREGON - Began emerging in the Willamette Valley by mid-March and reached peak March 25. Infestations appear lighter than in 1957. (Jones).

APHIDS - UTAH - Eggs abundant in apple orchards at Honeyville, Box Elder County. (Knowlton).

SCALE INSECTS - MARYLAND - Some growers reporting infestations, including Aspidiotus perniciosus and A. forbesi. (U. Md., Ent. Rept.).

PACIFIC MITE (Tetranychus pacificus) - CALIFORNIA - Medium populations infesting almond trees in Durham area of Butte County. (Cal. Coop. Rept.).

HALL SCALE (Nilotaspis halli) - CALIFORNIA - Final inspection of Stilson Canyon area completed during February. Final inspections being made in the Chico City area. Microscope examinations of twigs during February were negative. (PPC, West. Reg., Rept.).

FILBERT LEAF ROLLER (Archips rosana) - OREGON - Eggs began hatching in Benton County, March 27. (Every).

A FILBERT APHID (Myzocallis coryli) - OREGON - Nymphs appeared in moderate numbers in Willamette Valley in mid-March. (Every).

PURPLE SCALE (Lepidosaphes beckii) - FLORIDA - All stages averaging hundreds per stem on satsuma and kumquat at Monticello, Jefferson County. (Fla. Coop. Surv., March 10).

GREENHOUSE SLUG (Milax gagates) - CALIFORNIA - Heavy on citrus in Highgrove area of Riverside County. (Cal. Coop. Rept.).

TRUCK CROP INSECTS

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Infestations on cabbage and collards light to moderate in Colquitt and Thomas Counties and moderate to heavy in Brooks County. (Johnson). Texas - Infestations increasing on late-planted cabbage in lower Rio Grande Valley. (Deer).

IMPORTED CABBAGEWORM (Pieris rapae) - NORTH CAROLINA - First adult of season seen in Wake County. (Scott, March 23).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light infestation on collards in Brooks County. (Johnson).

A CUTWORM (Platyperigae extima) - CALIFORNIA - Medium infestation on strawberries in Watsonville area, Santa Cruz County. (Cal. Coop. Rept.).

POTATO PSYLLID (Paratrioza cockerelli) - TEXAS - Observed feeding on tomatoes in lower Rio Grande Valley. (Deer).

SERPENTINE LEAF MINER (Liriomyza sp.) - FLORIDA - Sudden light infestation on potatoes, pole beans and tomatoes in Redlands area of Dade County. (Fla. Coop. Surv., March 4).

TOMATO FRUITWORM (Heliothis zea) - TEXAS - Observed feeding on tomatoes in lower Rio Grande Valley. (Deer).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Heavy infestations on tomato plant beds in Colquitt County. (Johnson).

COTTON INSECTS

Boll Weevil Survival Survey - Spring 1958

SOUTH CAROLINA, NORTH CAROLINA and VIRGINIA - Spring surface woods trash examinations were made February 27 - March 28 in the same five representative areas of these States in which fall examinations were made in 1957. Results of examinations were as follows:

<u>Areas</u>	<u>Avg. No. Weevils Per Acre</u>	<u>Percent Survival</u>
1. South central S. C.	457	11.5
2. Coastal Plains S. C. & N. C.	403	3.5
3. Piedmont S. C. & N. C.	296	4.4
4. North central North Carolina	53.8	2.4
5. Southeastern Virginia	53.8	1.6

As can be seen, the percent survival was lowest in Virginia and highest in south central South Carolina. These numbers are far below the 1957 spring averages and survival percentages. In Florence County, South Carolina, an average of 538 weevils per acre was found this spring with a winter survival of 6.9 percent, which is the lowest percent survival on record for the county. At no time have fewer weevils been found in spring examinations in this county.

MISSISSIPPI - Collections of woods trash were begun March 15 and examinations completed March 21. Wherever possible, samples were taken from the same locations that were sampled last fall. Results of the survey are shown in the following table.

<u>Area</u>	<u>Average No. Weevils Per Acre</u>	<u>Percent Survival</u>
1. Lower delta	418	8.51
2. Central delta	551	9.31
3. North delta	381	3.44
4. Hill section	219	5.33

These percentage survivals are the lowest recorded since records have been kept in this State. (Ent. Res. Div. in Coop. with States and PPC)

CUTWORMS - TEXAS - Attacking seedling cotton in lower Rio Grande Valley. (Deer).

SPIDER MITES - TEXAS - Infesting cotton in lower Rio Grande Valley. (Deer).

TOBACCO INSECTS

GREEN PEACH APHID (Myzus persicae) - GEORGIA - Light to moderate infestations on tobacco plant beds in Colquitt, Lowndes and Pierce Counties. (Johnson).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light infestations on tobacco plant beds in 8 counties. (Johnson).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

TURPENTINE BEETLES - TEXAS - Causing damage to pine trees in Hardin County. (Peck, Turney).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - CALIFORNIA - Heavy infestations attacking Colorado blue spruce in Auburn area of Placer County. (Cal. Coop. Rept.).

A PINE BARK APHID - PENNSYLVANIA - Quite heavy on large ornamental pines in Greene County. (Udine).

A MITE (Pentamerismus erythreus) - CALIFORNIA - Heavy populations on thuja in Redwood City, San Mateo County. (Cal. Coop. Rept.).

HOLLY LEAF MINER - OREGON - Phytomyza ilicis pupation occurred at Portland by March 18. (Goeden). VIRGINIA - Phytomyza sp. larvae and pupae are heavy in leaves of a holly tree at Bon Air, Chesterfield County. (Rowell).

A GRASS BUG (Arhyssus barberi) - OREGON - Abundant on locust trees near Pilot Rock, Umatilla County. Det. John D. Lattin. (Chinn).

A SCALE (Lineaspis cupressi) - CALIFORNIA - Heavy infestations on native juniper in Ventucopa area of Santa Barbara County. (Cal. Coop. Rept.).

A TWIG GIRDLER (Agrilus politus politus) - CALIFORNIA - Heavy populations on weeping willow in Scaramento, Sacramento County. (Cal. Coop. Rept.).

GREEDY SCALE (Aspidiotus camelliae) - CALIFORNIA - Populations heavy on camellia at Hayward, Alameda County. (Cal. Coop. Rept.).

ROSE APHID (Macrosiphum rosae) - NEW MEXICO - Heavy infestation on roses at Alamogordo, Otero County. Continues as a minor problem in all areas except in northern part of State. (N. Mex. Coop. Rept.).

PEA LEAF WEEVIL (Sitona lineata) - OREGON - Adults have attacked a planting of miniature roses in Washington County. Feeding was particularly evident on lower growing plants and lower leaves of others, with 100 percent of leaves injured on some plants. Feeding was most evident March 1-9, but has probably been intermittent since early January. (Getzendaner).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - OREGON - Infestations local but severe in Marion County with maggots pupating. (Larson).

APHIDS - NEW MEXICO - Heavy infestation on iris at Fort Sumner, De Baca County. (N. Mex. Coop. Rept.).

WESTERN TUSSOCK MOTH (Hemerocampa vetusta) - CALIFORNIA - Infestations on malva in San Ysidro area of San Diego County reported as heavy. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (*Hypoderma* spp.) - NEW MEXICO - Attacking cattle in Harding County. (N. Mex. Coop. Rept.). UTAH - Common, and sometimes numerous, in herds in many parts of the State. (Knowlton). VIRGINIA - Averaged 6 per head in a herd of cattle in Rockbridge County. Approximately 75 percent were *H. bovis* and 25 percent *H. lineatum*. (Turner).

CATTLE LICE - NEW MEXICO - One heavy infestation on 4-6 month old calves near Maxwell, Colfax County. Most other range areas of State have spotty light infestations. (N. Mex. Coop. Rept.).

EAR TICK (*Otobius megnini*) - TEXAS - Infesting ears of cattle in Limestone County. (Turney).

HORSE SUCKING LOUSE (*Haematopinus asini*) - SOUTH DAKOTA - Heavy infestation on a saddle horse in Brookings, Brookings County. (Lofgren).

SHEEP KED (*Melophagus ovinus*) - PENNSYLVANIA - Numerous on untreated sheep and quite heavy on lambs in Greene County. Treated herds free. (Udine).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (*Trogoderma granarium*) - ARIZONA - One new infestation found during February. Total of 193 infestations found since beginning of program in State. Inspections in NEVADA were negative. Intensive surveys were made in northeastern COLORADO and one county in western Colorado. All specimens submitted were negative. Inspections were made, mainly on coastal areas, in WASHINGTON by State personnel. (PPC, West. Reg., Rept.).

Stored-grain Pest Survey, Oklahoma: Inspection of 21 feed and seed establishments in the northeastern part of the State showed RICE WEEVIL severe in 1, heavy in 1, light in 1; LESSER GRAIN BORER light in 2; RED FLOUR BEETLE light in 2; INDIAN-MEAL MOTH severe in 1, heavy in 1, medium in 1, light in 6; SAW-TOOTHED GRAIN BEETLE light in 1; CADELLE light in 3, occasional in 2; ANGOUMOIS GRAIN MOTH heavy in 1; DERMESTIDS occasional in 2; FLAT GRAIN BEETLE light in 1; YELLOW MEALWORM light in 1; KHAPRA BEETLE was negative. Various grains and seeds were included in the inspection. (Coppock, Stiles).

BENEFICIAL INSECTS

HONEY BEE (*Apis mellifera*) - CALIFORNIA - Serious damage to 45 colonies caused by flood waters in an apiary in Tehama County. (Cal. Coop. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - TEXAS - Has been found in Orange, Jefferson, Newton, Tyler, Jasper, Hardin, Harris, Smith, Liberty, Henderson, Gregg, Harrison and Bexar Counties. There have been 1,581.6 acres treated for this insect as of March 21. (Texas Coop. Surv., PPC).

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Entering homes and causing annoyance to homeowners in Baltimore and in College Park, Prince Georges County. (U. Md., Ent. Dept.).

BROWN-BANDED ROACH (*Supella supellectilium*) - CALIFORNIA - A nuisance in the kitchen and bathroom of a home in Sacramento, Sacramento County. This roach is new to the State and has seldom been reported in heavy populations. (Cal. Coop. Rept.).

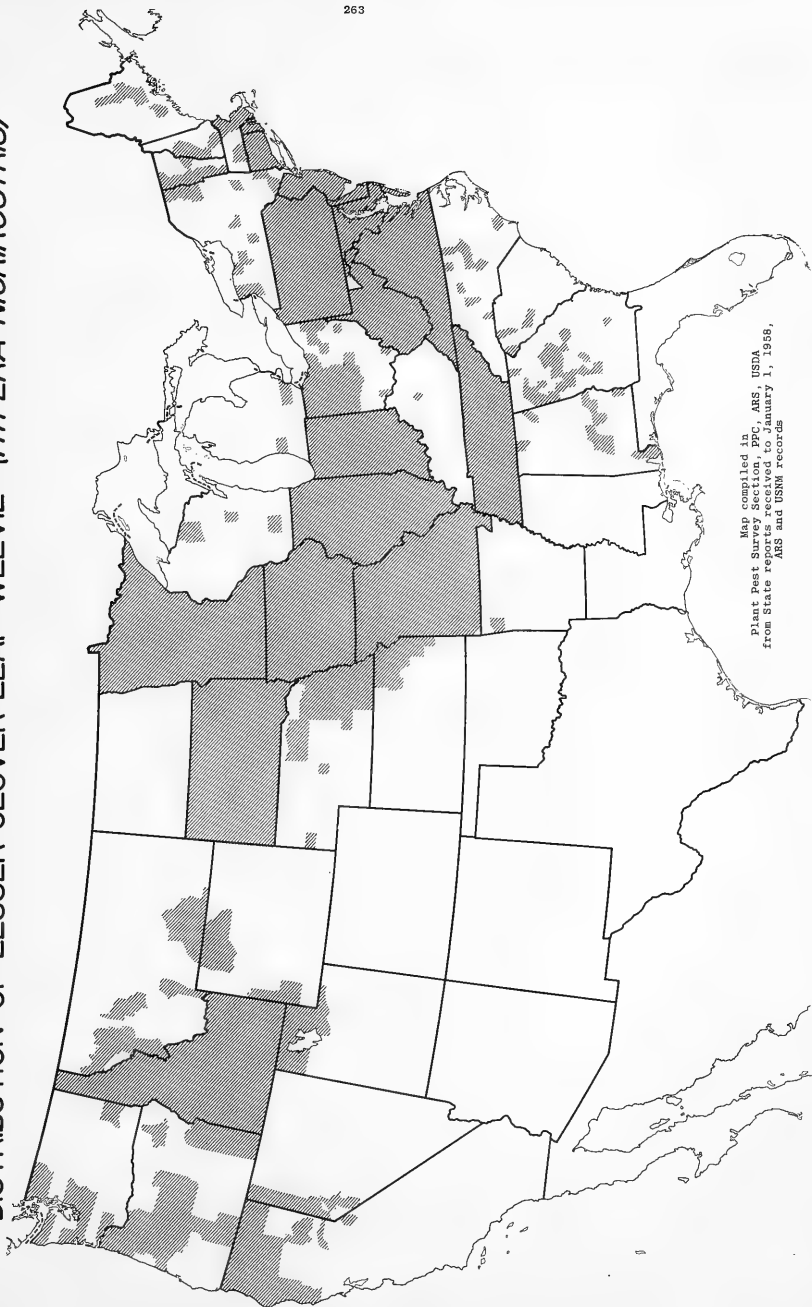
ADDITIONAL NOTES

OKLAHOMA - Very low numbers of SPOTTED ALFALFA APHID in northeastern counties. Remaining populations of GREENBUG generally light in Hennessey area; spraying has given good control. Occasional to light numbers of WINTER GRAIN MITE in small grains in Creek County. Scattered APPLE GRAIN APHID colonies average 0-100 per linear foot in wheat in Creek County. CLOVER LEAF WEEVIL larvae number 0-2 per alfalfa crown in Tulsa County. CATTLE LICE present in heaviest infestation in years in southern counties.

LIGHT TRAP COLLECTIONS

	Hel. zea	Pseud. unip.	Trich. ni	Laph. frug.	Agrot yps.	Perid. marg.	Felt. subt.	Prod. ornith.
FLORIDA								
Monticello 3/18,25		9			3			
Quincy 3/17		10			5			
Sanford 3/19	1		2		2			
LOUISIANA								
Baton Rouge 3/21-27					1			
TEXAS								
Brownsville 3/15-21	4	68	4	16	40	28	76	
Weslaco 3/1-15		447	22	48	24	92	119	22
SOUTH CAROLINA (County)								
Charleston 3/24-30		14			1	1		2

DISTRIBUTION OF LESSER CLOVER LEAF WEEVIL (*HYPERA NIGRIROSTRIS*)



Map compiled by
Plant Pest Survey, PPC, ARS, USDA
from State reports received to January 1, 1958,
ARS and USNM records

SUMMARY OF INSECT CONDITIONS - 1957

WASHINGTON

Prepared by E. F. Dailey

Highlights: A number of unusual insect conditions occurred during the 1957 season which were associated more or less directly with weather conditions. APHID populations in general were considerable heavier than in 1956. Heavy chemical treatment was required to control PEA APHID in Walla Walla and Palouse areas. BEAN APHID required control treatment in Yakima Valley and Columbia Basin areas. Infestations of BALSAM WOOLLY APHID continued to increase. LILAC LEAF MINER was more destructive in western areas than at any previous time. PEAR PSYLLA reached heaviest populations ever recorded in Yakima and Wenatchee areas. More adults of CORN EARWORM were trapped in the Yakima Valley than at any time since 1954. Extremely heavy populations of BEET LEAFHOPPER occurred in eastern areas.

Cereal and Forage Insects: The migrant population of PEA APHID (Macrosiphum pisi) on alfalfa was severely reduced by intermittent rains in the Walla Walla area May 19-25. However, populations increased to higher than usual average densities on peas later in the season and required the greatest amount of chemical control since 1954. Cool weather resulted in late maturing of dry peas in the Palouse area and heavy pea populations built up, 28 June to 5 July. By 12 July counts averaged 30 per tip in the Pullman area and approximately 5,000 acres received chemical treatment. ENGLISH GRAIN APHID (Macrosiphum granarium) was light to moderate in eastern wheat growing areas. CLOVER APHID (Anuraphis bakeri) caused light to moderate damage on red clover in eastern and western counties. A CHLOROPID STEM MAGGOT (Oscinella nitidissima) caused approximately 5 percent stand loss in plantings of Kentucky bluegrass at the plant introduction nursery at Pullman. GLASSY CUTWORM (Crymodes devastator) and CRANBERRY GIRDLER (Crambus topiarius) though generally lighter than in 1956, continued moderate to heavy damage to Merion bluegrass and other seed grasses in Spokane County. A GELECHIID (Chionodes psiloptera) caused moderate to heavy damage to seed grasses in higher elevation non-irrigated fields along with the cranberry girdler. DATE MITE (Oligonychus pratensis) produced heavy damage to Merion bluegrass near Dayton, Columbia County. WHEAT HEAD ARMYWORM (Faronta diffusa) caused light damage to wheat in Klickitat County. A MINT CUTWORM (Heliothis phloxiphaga) attacked developing wheat heads in Whitman County. A MEALYBUG (Heterococcus graminicola) produced light damage in Merion bluegrass seed fields in Spokane and Garfield Counties. A heavy infestation of TWO-SPOTTED SPIDER MITE (Tetranychus telarius) severely damaged Ladino clover seed fields near Quincy in July. During May CLOVER ROOT BORER (Hylastinus obscurus) caused severe crown damage to most red clover areas in Grays Harbor County, while LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) caused severe localized damage in several red clover fields in the County. CLOVER LEAF WEEVIL (Hypera punctata) was scarce. PEA LEAF WEEVIL (Sitona lineata) caused considerable foliage notching in red clover seed fields near Chehalis, Lewis County, in August, up to 75 adults per 25 sweeps. SWEETCLOVER WEEVIL (Sitona cylindricollis) continued to cause extensive and severe damage to sweet clover throughout eastern Washington.

The clover root curculio, lesser clover leaf weevil and sweetclover weevil were present in the Columbia Basin in small numbers and, in the case of the first two species, in localized areas only. The ALFALFA WEEVIL (Hypera postica) was not found in 1957. Heavy infestations of CLOVER SEED CHALCID (Bruchophagus gibbus) caused severe damage locally in eastern areas on

alfalfa and red clover due to improper cultural practices during the previous season. LYGUS BUGS (Lygus hesperus and L. elisus) were generally well controlled on alfalfa throughout eastern Washington with only occasional reports of damage. Total cost of insecticide treatments on alfalfa seed fields amounted to \$200,000. CORN EARWORM (Heliothis zea) infestations ranged from 3-100 percent in the area from Yakima to Prosser with most fields examined showing over 60 percent infested. WIREWORMS were of smaller consequence in corn than in 1956. PACIFIC COAST WIREWORM (Limonius canus) and SUGAR-BEET WIREWORM (L. californicus) caused heavy stand loss in two fields of spring wheat near Walla Walla. GRASSHOPPERS were present in considerably greater numbers than during 1956, being present in relative abundance in many counties where generally only moderate populations occur. The species in order of prevalence and importance were Melanoplus bilituratus, M. bivitattus, M. packardi, Aulocara ellioti, Camnula pellucida and Oedaleonotus enigma. Control treatments on croplands were applied principally on small acreages of alfalfa scattered through Ferry, Okanogan, Stevens, Asotin, Chelan, Douglas and Grant Counties. A number of red clover fields in Grant County also received control treatment. The adult grasshopper survey indicated threatening to severe infestations on 326,000 acres. Heavy infestations of the GRAY GARDEN SLUG (Deroceras reticulatum) caused light to moderate damage to ladino clover/orchard grass cover crop in Grays Harbor County.

Tree Fruit Insects: GRASSHOPPERS (primarily Melanoplus bilituratus and M. bivitattus) required control on young fruit trees in Chelan County. PEAR-SLUG (Caliroa cerasi) infestations throughout western Washington were most extensive noted in several years. Widespread damage occurred on pear and cherry during August with almost complete defoliation of many cherry trees. APPLE AND THORN SKELETONIZER (Anthophila pariana) occurred in western areas in greater abundance than for several years causing severe damage to apple trees during August and September. Effective CODLING MOTH (Carpocapsa pomonella) control resulted in negligible damage in all commercial apple growing areas of eastern Washington. Total cost of control amounted to \$1,300,000. ORIENTAL FRUIT MOTH (Grapholitha molesta) remains confined to the Lombard Hill-Knight Loop area in Yakima County. During the fall of 1956 there was a $\frac{1}{4}$ -mile spread to the southeast. Good control was obtained with negligible damage throughout the area. PEACH TWIG BORER (Anarsia lineatella) continues extensive damage on peach trees in north central areas and occasional heavy damage in the Wenatchee area. Causes of injury were generally attributed to improper timing or omission of sprays. GREEN PEACH APHID (Myzus persicae) was more abundant on peach trees in lower Yakima Valley than for several years. APPLE APHID (Aphis pomi) was generally more abundant than during 1956. Moderate to heavy infestations occurred throughout the Yakima Valley and in the Okanogan area. Damage in these areas was generally moderate; occasionally severe. WOOLLY APPLE APHID (Eriosoma lanigerum) was of general concern throughout the Yakima Valley and caused moderate damage. The heaviest outbreak of PEAR PSYLLA (Psylla pyricola) was recorded in the Wenatchee and Yakima areas. Frequent periods of cool spring weather were probably a major factor contributing to the unusual abundance early in the season. Activity reached a low point during the first 2 weeks of July in Wenatchee and Yakima orchards and late season build up was light, well below anticipated levels in both areas. Although damage was extensive it was less severe than anticipated. Another significant factor in this outbreak may have been an unusually large overwintered population resulting from omission of dormant sprays and pre-pink sprays on winter injured trees in 1956. Also, dormant sprays are now being regularly omitted by many growers in Yakima and mainly Wenatchee. In addition, field observations indicate that this species is becoming "difficult to control with phosphorous materials." EUROPEAN FRUIT LECANIUM (Lecanium corni) caused moderate damage on apricots in localized orchards in the Wenatchee area. WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) was well controlled with negligible damage in all commercial cherry areas. PEAR RUST MITE (Epitrimerus pyri), APPLE RUST MITE (Vasates schlechtendali), PEACH SILVER MITE (Vasates cornutus) and PLUM NURSERY MITE (Vasatus fockui), on cherry,

built up heavily on their host trees in localized areas where controls were inadequate in the Okanogan and Wenatchee areas during warm weather in July. In general, rust mites caused light to moderate damage in the Yakima and Wenatchee areas. TWO-SPOTTED SPIDER MITE (Tetranychus telarius)-light infestation over the general Wenatchee area. EUROPEAN RED MITE (Panonychus ulmi) caused moderate damage to fruit trees throughout the Yakima Valley and moderate to heavy damage in some orchards in the Wenatchee area. CATFACING of peaches by lygus bugs (Lygus hesperus, L. elisus) stink bugs and cutworms was more serious in the Wenatchee area than it has been for 10 years.

Small Fruit Insects: A GRAPE LEAFHOPPER (Erythroneura elegantula) was more prevalent in the lower Yakima Valley than for several years. Damage was generally light. The GRAPE MEALYBUG (Pseudococcus maritimus) was prevalent in grape areas of Yakima County. Thick deposits of honeydew and the presence of eggs and crawlers on fruit caused concern in processing plants. A heavy overwintered population of SPIDER MITES (probably Tetranychus willamettii) occurred in raspberry fields in Skagit and Whatcom Counties. Workers complained of dermatitis from handling canes. All infestations were satisfactorily controlled. A heavy post-harvest infestation of the TWO-SPOTTED MITE (Tetranychus telarius) in September required control in several raspberry fields in the Puyallup Valley. Raspberry mosaic virus disease spread by the APHID (Amphorophora rubi) caused an estimated loss of 5 percent evaluated at \$20,790 on raspberries in Snohomish County. Heavy infestations of the RASPBERRY CANE MAGGOT (Pegomya rubivora) occurred in raspberry in Mt. Vernon area. Severe infestations of BLACK-HEADED FIREWORM (Rhopobota naevana) were observed in several neglected cranberry bogs in Pacific and Grays Harbor Counties. Heavy first broods are anticipated for 1958. Populations of the CYCLAMEN MITE (Stenotarsonemus pallidus) on strawberries were unusually low and slow in developing in Snohomish, Skagit and Whatcom Counties but heavy infestations occurred in some fields in August. Heavy infestations of a RASPBERRY BUD WEEVIL (Nemocestes incomptus), causing moderate to severe damage, occurred on strawberries planted in recently cleared brush land throughout Skagit, Snohomish and Whatcom Counties. Virus disease spread by the STRAWBERRY APHID (Pentatrachopus fragaefolii) caused an estimated 5 percent loss evaluated at \$30,185 on strawberries in Snohomish County; damage by slugs accounted for approximately 1 percent or \$6,000 and damage by STRAWBERRY ROOT WEEVIL (Brachyrhinus spp.) and the raspberry bud weevil amounted to about 3 percent or \$18,100.

Truck Crop Insects: Larvae of ALFALFA LOOPER (Autographa californica) and CELERY LOOPER (Anagrapha falcifera) caused difficulty in packing plants on green peas from the Palouse and Walla Walla areas. PEA APHID (Macrosiphum pisi) caused a 2 percent crop loss in green peas in Skagit County evaluated at approximately \$53,625. Though well controlled, PEA WEEVIL (Bruchus pisorum) damaged processing peas in local areas in the Yakima Valley. This species continues to be a rarity in the Palouse area. GARDEN SYMPHYLID (Scutigerella immaculata) appears to be increasing and spreading, especially in the Yakima Valley where it caused light to moderate damage on beets, asparagus, mint and field corn in localized areas. In western Washington it caused severe damage to a 640 acre planting of mint. BET LEAFHOPPER (Circulifer tenellus) was unusually abundant in areas throughout the southeastern quarter of the State. Severe loss through curly top disease occurred on susceptible varieties of beans and on cantaloups, watermelons and tomatoes in the Yakima Valley and Columbia Basin. A crop loss in red kidney beans valued at approximately \$123,800 occurred in the Quincy area where about 1,000 acres were plowed under and near Moses Lake where an estimated 20 percent loss occurred over approximately 100 acres. Several fields of early crop tomatoes in the Yakima Valley and particularly in the West Wapato area suffered 60-100 percent severe curly top disease and some fields were disc'd during July. Total loss on tomatoes in the Walla Walla area due to curly top estimated at \$5,000. Unusually heavy populations of BEAN APHID (Aphis fabae) occurred in eastern Washington. This species caused a 25 percent loss on pole beans in King

County and a 2 percent loss in Skagit County evaluated at \$31,580. Colonies of GREEN PEACH APHID (*Myzus persicae*) became established on potatoes during the last of May and early in June in the Union Gap area and near Quincy and required controls by June 28. Heavy damage occurred on tomatoes in West Wapato area. Populations increased rapidly late in August in the Columbia Basin and treatment was required in many fields. A 4 percent potato crop loss, due to net necrosis valued at approximately \$190,460 occurred in the Moses Lake-Quincy area and a 2 percent loss of approximately \$7,400 occurred in Skagit County. INTERMOUNTAIN LEAFHOPPER (*Empoasca filamenta*) caused generally very light damage on potatoes in the Columbia Basin. PACIFIC COAST WIREWORM (*Limonius canus*) caused a 6 percent loss of potatoes, valued at approximately \$21,270 in Skagit County. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) damage to potatoes in the Yakima Valley and in Grant and Adams Counties ranged from light to heavy with severe damage occurring in local fields. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) occurred in light to heavy populations on potatoes, sugar beets and mint in the Yakima Valley and Columbia Basin. Populations were particularly heavy on potatoes in the Quincy area during August when many fields received control treatment. Moderate to severe damage occurred on spearmint just before harvest in the Roza district. Moderate to heavy infestations of MINT APHID (*Phorodon menthae*) occurred on mint in the lower Yakima Valley. A very light infestation of *Anuraphis menthae-radicis* was found on peppermint roots at Grandview on 15 August; first reported record of species in the State. A CUTWORM (*Heliothis phloxiphaga*) caused light to moderate damage to mint throughout the lower Yakima Valley. PEA MOTH (*Laspeyresia nigricana*) continues to be effectively controlled in commercial pea growing areas of western Washington. Severe damage continues on onions by ONION MAGGOT (*Hylemya antiqua*) and, to a lesser degree, by SEED-CORN MAGGOT (*Hylemya cilicrura*) and LESSER BULB FLY (*Eumerus tuberculatus*). In general, damage to onions by these species was less extensive than during 1956. Populations of the onion maggot, however, were heavier in the Columbia Basin than during 1956. Approximate evaluations of onion crop losses: \$53,300 in the Walla Walla area, \$32,900 in the Moses Lake-Quincy area and \$18,360 in King County.

SEED-CORN MAGGOT (*Hylemya cilicrura*) caused moderate damage on beans throughout the Yakima Valley. ASPARAGUS MINER (*Melanagroyza simplex*) occurred in the heaviest populations in recent years in the lower Yakima Valley. Severe damage was caused in many fields in the Grandview-Toppenish area. ASPARAGUS BEETLE (*Crioceris asparagi*) and SPOTTED ASPARAGUS BEETLE (*Crioceris duodecimpunctata*) required control on many fields during mid-May. Damage over the lower Yakima Valley was severe in localized fields. CUTWORMS (*Euxoa* spp.) caused a 3 percent loss evaluated at \$9,600 on asparagus in the Walla Walla area. CARROT RUST FLY (*Psila rosae*) caused heavy damage on carrots in western Washington. A loss of 25 percent evaluated at \$41,190 occurred in King County. Infestations of a CARROT APHID (*Cavariella aegopodii*) in the Walla Walla area caused a loss of \$22,500 due to 20 percent size reduction. Heavy infestations of CORN EARWORM (*Heliothis zea*) occurred on late season sweet corn in the lower Yakima Valley and in the Walla Walla area. Earworm damage accounted for a sweet corn crop loss of approximately \$4,760 in the Walla Walla area. Crop losses resulting from damage by the CABBAGE MAGGOT (*Hylemya brassicae*) amounted to 15 percent, or approximately \$3,500 on radishes and turnips in the Walla Walla area. CABBAGE APHID (*Brevicoryne brassicae*) accounted for approximate \$94,485 loss on crucifers in Skagit, Snohomish and King counties. DIAMONDBACK MOTH (*Plutella maculipennis*), the IMPORTED CABBAGEWORM (*Pieris rapae*), and the CABBAGE LOOPER (*Trichoplusia ni*) losses approximated \$90,520 on crucifers in these counties. LYGUS BUGS (*Lygus hesperus* and *L. elisus*) caused a 75 percent loss in spring processing spinach evaluated at \$67,500 and a 25 percent loss due to feeding deformity on cabbage evaluated at \$3,000 in the Walla Walla area. Damage on beets varied from moderate to serious in localized areas in the Yakima Valley.

Forest, Ornamental and Shade Tree Insects: LILAC LEAF MINER (*Gracilaria*

syringella) occurred in record abundance throughout western Washington. Lilacs and privets were heavily infested and many were completely defoliated. A rather extensive infestation of the ORANGE TORTRIX (*Argyrotaenia citrana*) occurred on carnations in a greenhouse at Summer. This species has become a pest of minor importance in the Puyallup Valley in recent years presumably due to natural control by native parasites. FALL WEBWORM (*Hyphantria cunea*) was present in generally moderate abundance in most areas. Infestations of the WESTERN TENT CATERPILLAR (*Malacosoma pluviale*) and the FOREST TENT CATERPILLAR (*M. disstria*) were rare on cultivated plants. These species are slowly increasing in western Washington following their severe reduction in 1955. Forest insect outbreaks increased in extent and severity after 3 years of decline. BALSAM WOOLLY APHID (*Chermes piceae*) increased 10,000 acres. ENGLEMANN SPRUCE BEETLE (*Dendroctonus engelmanni*) increased in extent with the largest area of damage covering 3,840 acres on the Yakima Indian Reservation. WESTERN PINE BEETLE (*Dendroctonus brevicomis*) increased heavily with greatest damage occurring on 1,600 acres in the Okanogan National Forest. DOUGLAS-FIR BEETLE (*Dendroctonus pseudotsugae*) had steadily declined since its peak year of infestation in 1954. The only large outbreak occurred in 7,040 acres on the Coleville Indian Reservation. Light infestations of SILVER FIR BEETLES (*Pseudohylesinus* spp.) totaling 1,120 acres occurred in the Mount Baker and Snoqualmie National Forests. The first epidemic outbreak in more than a decade of the BLACK-HEADED BUDWORM (*Acleris variana*) occurred over 252,800 acres with the heaviest infestations on hemlock and fir in the Snoqualmie National Forest area.

HEMLOCK SAWFLY (*Neodiprion tsugae*) was associated with the black-headed budworm in an outbreak covering approximately 2,500 acres of hemlock in Pend Orielle County. LARCH BUD MOTH (*Zeiraphera griseana*) outbreaks covered 39,520 acres located mostly in the Okanogan National Forest. Areas of infestation by this species reported in 1956 in Pend Orielle County are continuing. Previous outbreaks of *Acleris variana* and *Zeiraphera griseana* have subsided without causing significant tree mortality. BLACK PINE LEAF SCALE (*Aspidiotus californicus*) persists in epidemic status near Mead, Spokane County and heavy infestations occurred on pines near Cashmere and Dryden in Chelan County. Infestations of PINE NEEDLE SCALE (*Phenacapsis pinifoliae*) increased in extent on pine in northeastern Washington and in Chelan County causing moderate damage in localized areas. Heavy infestations occurred on ornamental pines at Pullman.

OYSTERSHELL SCALE (*Lepidosaphes ulmi*) caused severe damage to poplar, cottonwood, willow and other watershed vegetation in the Wenatchee area. Heavy infestations of the COTTONY-MAPLE SCALE (*Pulvinaria innumerabilis*) with mortality of occasional trees continues in the Pullman, Yakima and Wenatchee areas. PINE BARK APHID (*Pinus strobi*) was seasonally prevalent and caused frequent damage on ornamental conifers in western Washington. Infestations of NORWAY MAPLE APHID (*Periphyllus lyropictus*) increased to very heavy levels on shade tree maples in the Yakima and especially in the Wenatchee areas. Heavy infestations of ELM LEAF BEETLE (*Galerucella xanthomelaena*) caused severe defoliation of occasional elm trees in Wenatchee and Yakima. This species has been at low levels in western Washington since 1953.

Heavy infestations of WALNUT APHID (*Chromaphis juglandicola*) caused severe damage to many black walnut trees throughout Yakima County. SPRUCE APHID (*Aphis abietina*) occurred in the heaviest infestations on ornamental spruces ever noted in the Seattle area. Heavy infestations of the APPLE AND THORN SKELTONIZER (*Anthophila pariana*) caused severe damage to ornamental apple varieties in western Washington. Heavy infestations of SOD WEBWORM caused moderate to severe damage to lawns in the Seattle and Edmonds areas.

Beneficial Insects: KLAMMATHWEED BEETLES (*Chrysolina quadrigemina* and *C. hyperici*) have become well established in Clark County from 1953 releases. Successful colonizations were reported from 1956 releases in Pacific County

and on Oreas Island in San Juan County. Klammathweed in areas of 1949 release points in Whitman County were controlled. The few regrowth weeds present were being heavily attacked. The BUPRESTID (Agrius hyperici) that was released in the Union Flats area of Whitman County for klammathweed control was present in very low numbers. A single larva and pupa were recovered. CONVERGENT LADY BEETLES (Hippodamia convergens) were particularly abundant on maples infested with Norway-maple aphid and cottony-maple scale at Pullman. The introduced COCCINELLID (Stethorus punctillum), a mite predator, was abundant in raspberry fields in the Puyallup Valley that were heavily infested with the two-spotted spider mite.

Severe reduction of activity of ALKALI BEE (Nomia melanderi), due to inclement weather during the alfalfa seed set period, resulted in a reduction in seed set estimated at 20-40 percent in areas of normally low bee populations in the West Wapato area. Greater numbers of the MINING BEE (Agapostemon cocerelli) were observed working in alfalfa fields than during 3 or 4 previous years. Infestations of clover aphid in some red clover seed fields in the Columbia Basin were reduced by the PARASITE (Aphelinus lapislignii) from an average of 100-150/head on 2 August to 5-10/head by 16 August. Field inspection of cocoons of the western tent caterpillar and the forest tent caterpillar indicated that the primary PARASITES (Tachinomyia similis, Rileymyia americana and Labrorychus sp. were typically numerous and that Sarcophaga aldrichi and S. houghi were present in abundance as usual. Chalcid egg parasites were active on egg masses. A EUROPEAN PREDATORY FLY (Aphidoetes thompsoni) was released in areas infested by balsam woolly aphid.

Bee Poisoning: In the Yakima Valley several hundred HONEY BEE (Apis mellifera) colonies were damaged by pre-pink insecticide treatments on tree fruits approximately 2,000 hives were damaged by insecticides applied to alfalfa seed fields and about 500 hives were damaged by treatments applied to mint fields. Damage includes killing as well as weakening of colonies causing loss of honey crop and failure to overwinter. Of the 2,000 hives damaged by alfalfa insecticides it was estimated that 500 were killed and that 50 percent of the remainder would not overwinter.

Miscellaneous Insects: A single specimen of the TENEBRIONID (Tribolium destructor) was found infesting food in a Seattle home, September 12. This is a new distribution record, the species being previously known from Vancouver, B.C. Damage to homes by a SUBTERRANEAN TERMITES (Reticulitermes hesperus) appears to be increasing in western Washington judging by the number of complaints received.

Stored-Product Insects: KHAPRA BEETLE has not been found in the State. Scattered outbreaks of the SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) occurred in early October in stored grain throughout the State. Infestations of RED FLOUR BEETLE (Tribolium castaneum) were frequent by mid-November. In general, stored-grain insect infestations were more widespread and occurred earlier than usual. Primary contributing factors were a higher than normal moisture content of grain at harvest time and unusually mild winter temperatures. Barley was more heavily infested than other grains by all species. Small infestations of Trogoderma parabile, Anthrenus spp., Megatoma spp., Dermites spp., and Attageus piceus were found in feed mills seedhouses and breweries during the Khapra beetle survey. Ptinus ocellus and P. fur. were common in feed mills in eastern Washington.

ADDITIONAL SUMMARY NOTE FOR 1957 - TEXAS - LESSER CORNSTALK BORER (Elasmopalpus lignosellus) caused considerable damage to peanuts and field peas. DOGWOOD TWIG BORER (Oberea tripunctata) was heavy in the peach-growing and plum-growing areas in East Texas. (Tex. Coop. Ins. Surv.). (See CEIR, Vol. 8, No. 12, p. 221).

Beet Leafhopper and Curly Top Conditions
in the Southern Great Plains and Adjacent Areas, 1957

Studies by Romney during the 1930's showed that the spring breeding areas of the beet leafhopper (*Circulifer tenellus* (Bak.)) east of Arizona and Utah were confined to southern New Mexico and southwestern Texas. Drought since 1951, with less than one-half normal rainfall in the western half of Texas and eastern New Mexico, has allowed the beet leafhopper to spread over this area and into western Oklahoma and western Kansas. Curly top, a virus disease transmitted by this insect, has been widely distributed over this area since

1953. Spinach growers in the Winter Garden area of Texas, flax growers in Bee and Live Oak Counties of Texas, and tomato and sugar-beet growers in the remainder of the area have suffered the greatest losses.

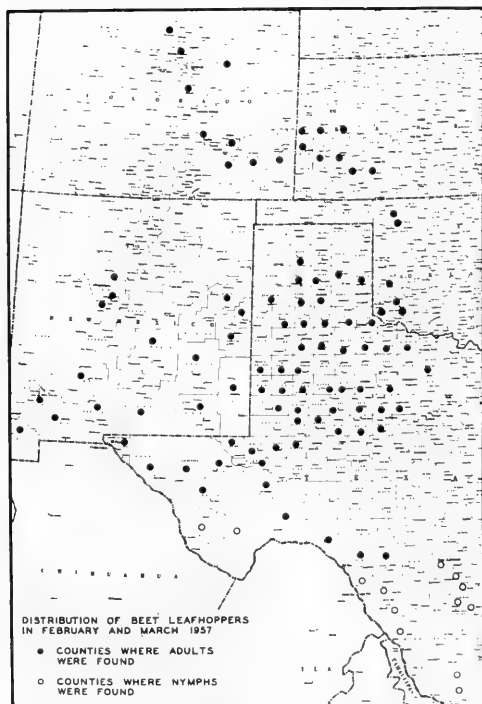
In order to gather more information on this problem and to determine what might take place in 1957, a study was made in eastern Colorado and New Mexico and in western Texas, Oklahoma and Kansas during February and early March 1957. The map shows that adults of the leafhopper were found well distributed from the Rio Grande River east to the 98th meridian and north to the Arkansas River Valley of Colorado and Kansas, but the populations were very low. Nymphs and newly developed adults were found from the Big Bend area of Texas south to the tip, which shows that this insect had been breeding in that area during the winter. The only high concentrations of leafhoppers were found near Pharr, Texas, in the extreme southern tip. In general, the population was one of the smallest found during the past 4-year study.

Leafhoppers were found on 31 different host plants. The most important were tansy-mustard, townmustard, patata*, Russian-thistle, pepperweed, and filaree.

Generally, the host plants were very sparse where present, but were lacking over most of the Area.

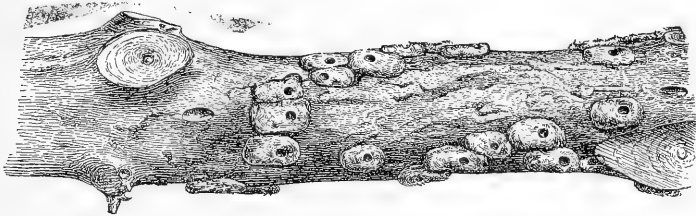
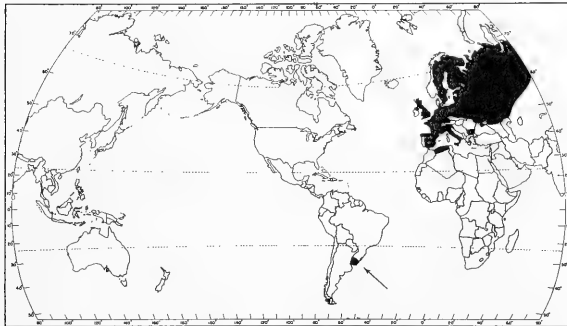
Flax in Bee and Live Oak Counties and spinach in the Winter Garden area of Texas were severely damaged by the insect-transmitted virus disease of curly top. (ARS and States Coop.)

*(Chenopodiaceae)



INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATESBANDED PINE WEEVIL (*Pissodes notatus* F.)

Economic Importance: *Pissodes notatus* and the closely related species *P. pini*, are among the most important forest insects in the British Isles. *P. notatus* is one of the chief pests of pines in parts of USSR where large portions of new plantations are often killed. Young pines are also severely damaged in Finland and Spain. The weevil first appeared in Uruguay about 1919 and by 1924 it had become a serious pest, destroying thousands of young pine trees. Banded pine weevil is injurious in both the larval and adult stages.

Characteristic Damage by *Pissodes notatus*

General Distribution of Banded Pine Weevil

Distribution: Most of Europe into eastern Siberia, also Algeria and Uruguay.

Hosts: Pine, spruce, larch, fir.

Life History and Habits: *Pissodes notatus* adults are long-lived, being found during all the warm months of the year. Life cycle from egg to egg usually requires about one year. Females oviposit in punctures in bark of young pines between the root collar and first whorl of branches and in older trees on trunk and branches. The larvae tunnel between bark and the wood, often producing radiating galleries. These galleries end in the pupal chamber which consists of a hollow, roofed with chips and fibers. Both larvae and adults cause damage. Larvae mine bark of stems and roots, adults feed on young shoots. Favorite breeding sites are in 2-10 year old pine plantations. Attack on pine is characterized by fine punctures on stem, swellings on bark from developing larvae and pupae and exit holes made by emerging adults.

Description: Adult 4-8 mm. in length, red-brown to dark brown. Elytra have two distinct bands of scales. Bands yellowish and white, anterior not meeting in middle, posterior broadened in center. Striae small, not distinct. Antennae inserted at middle of snout, femora not toothed. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(14) 4-4-58



Pissodes notatus Adult

Figures (except map): Adult from Forestry Commission. 1952. *Pissodes* weevils. Leaf. 29, 12 pp. London. Damage from Boas, J. E. V. 1924. Dansk Forstzoologi. 761 pp. Copenhagen.





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APRIL 11, 1958

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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

EUROPEAN CORN BORER survival from 66-84 percent in three areas of Illinois. (p. 275).

GREENBUG light to heavy in areas of Texas. Also active in Alabama and Oklahoma. (p. 275).

WHEAT CURL MITE heavy in Harvey County, Kansas, wheat. (p. 275).

CLOVER LEAF WEEVIL larvae active in legumes in several States. (p. 276).

Early, heavy buildup of APHIDS on citrus of concern in California. (p. 277).

Survey on POTATO PSYLLID on overwintering hosts indicates potential outbreak populations this season. (p. 278).

Largest populations of BEET LEAFHOPPER since 1954 expected in cultivated areas of eastern New Mexico, South Plains and Panhandle of Texas and Arkansas River Valley of Kansas and Colorado. (p. 278). Nevada report on page 280.

COLORADO POTATO BEETLE adults active at Charleston, South Carolina. (p. 279).

BOLL WEEVIL and COTTON FLEAHOPPER survival survey at Waco, Texas. (p. 281).

SUMMARY OF INSECT CONDITIONS - 1957 - Missouri (p. 284).

INSECTS not known to occur in the United States. (p. 289).

Distribution of LESSER GRAIN BORER. (p. 288).

ADDITIONAL NOTES. (p. 280). CORRECTION. (p. 283).

Reports in this issue are for the week ending April 4, unless otherwise designated.

WEATHER OF THE WEEK ENDING APRIL 7

The first week of April brought thundershowers and rising temperatures to areas east of the Rockies. Precipitation exceeded an inch in most of the East and Midwest, but was less than 0.50 inch along the north central border, parts of the lower Great Plains and the extreme lower Mississippi Valley. A coastal storm early in the week was responsible for most of the heavy rain in the East. This storm developed great intensity off the coast of New England. Tides caused tremendous damage along the shores of Maine, New Hampshire, and Massachusetts, with maximum damage south of Portland, Maine. Highways and sea walls were washed out, and hundreds of cottages and beach concessions were damaged or destroyed. Two inches of snow fell along the east Maine coast where power and communication lines were downed. A weekend storm brought precipitation to all north central and eastern areas. Moderate to heavy rains in most of the north central interior ended a 3-month dry spell there, except in northern Minnesota where precipitation was virtually nil. Twelve inches of new snow fell at Rhinelander and Antigo, Wis., on the 5th, and on the same date at least 3 tornadoes occurred in Illinois, killing one person, injuring several, and causing property losses estimated at about \$500,000. In the lower Great Plains the storm brought only strong, drying winds which whipped up dust in parts of eastern Colorado, western Kansas, the Oklahoma Panhandle, causing some wheat damage. Temperatures for the week averaged 6° to 12° above normal near the Canadian Border in the north central interior and slightly above elsewhere east of the Rockies except 3° to 6° below along the coast of Virginia and the Carolinas. Maximum temperatures rose into the 70's on several days in the lower Great Plains, the warmest weather in some sections there since the first week in October. West of the Continental Divide the week was cold with almost daily precipitation, except in some extreme southern areas where only a few light showers occurred. Temperatures for the week averaged 9° below normal in the Great Basin. Rainfall totaled several inches along the Pacific coast.

Precipitation was particularly heavy in California, exceeding 6 inches in the San Francisco and the central Pacific coastal area where much flooding occurred. A small tornado occurred on the 1st near the San Francisco Airport, where 0.96 inch of rain fell in 1 hour on the 2d, the most intense rainfall there since 1.07 inches in 1912. Santa Maria measured 4.22 inches during the first 6 days, the greatest amount for the entire month of April since 1900. Heavy snows fell in the Sierras above 3,000 feet. The station at Soda Springs was buried by snow. Norden reported a 5-day fall of 10 feet, increasing the snow depth there to 269 inches on the 4th. Plant growth and farm work with few exceptions, are now about 2 weeks behind east of the Rockies due to cold wet, weather and wet soil. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

EUROPEAN CORN BORER (Pyrausta nubilalis) - ILLINOIS - Winter survival was 84 percent in northwestern, 77 percent in western and 66 percent in central areas. (Ill. Ins. Rept.).

GRASSHOPPERS - NORTH DAKOTA - Limited survey in southwestern areas showed egg development from clear to well-segmented stage. High percentage of examined eggs in coagulated stage. (N. D. Ins. Rept.). NEBRASKA - Eggs of Melanoplus femur-rubrum in southeastern areas in clear to coagulant stage. M. differentialis eggs in late coagulant to very early eyespot stage. Many meloid parasites present and many eggs covered with fungus. (Andersen, Bell).

GREENBUG (Toxoptera graminum) - ALABAMA - Average 10-15 per 10 sweeps in fields of oats, wheat and vetch in Lee, Macon, and Russell Counties. (Grimes). OKLAHOMA - Up to 150 per linear foot in scattered fields of wheat in Hennessey area, Kingfisher County. Considerable spraying has been done. (Owens). Light counts of 0-30 per linear foot in majority of fields in south central counties with as many as 500 per linear foot in Cleveland County, 250 in Carter County and 300 in Love County. Light damage noted in a few fields. Lady beetles common and actively feeding in some locations. Populations reduced by a fungus in Logan County. (Coppock, Pennington). KANSAS - None found in wheat and barley fields in several areas surveyed. (Matthew, Somsen, Marvin). TEXAS - Infestations on small grain spotted heavy through north central areas (Chada), medium to heavy locally in Brazos County (Whipprecht), medium to heavy on 800-1,000 acres in Bowie County (Lynch) and light to heavy in Grimes, Limestone, Navarro, Kaufman and Hunt Counties, with stand killed in some fields (Randolph).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light numbers in small grains in all sections of State. Heavy in some south central and east central fields with hundreds per linear foot. (Coppock, Pennington).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Common in small grains throughout central and southern areas with 0-100 per linear foot in most counties. (Coppock, Pennington). DELAWARE - Colonies forming on annual ryegrass in central and western Sussex County. (MacCreary, Conrad).

CORN LEAF APHID (Rhopalosiphum maidis) - ALABAMA - Infestations medium to heavy on oats in Dallas County. (Hays). TEXAS - Light to medium infestations in Hunt and Kaufman Counties. (Randolph).

WHEAT CURL MITE (Aceria tulipae) - KANSAS - Heavy populations found in Harvey County fields. Numerous colonies and eggs present in curled wheat leaves throughout area. Populations elsewhere in central counties generally light and confined to drilled fields with abundant volunteer plants. (Somsen, Matthew).

FALSE WIREWORMS (Eleodes spp.) - SOUTH DAKOTA - Larval counts averaged 1-2 per linear foot of row in a winter wheat field in Stanley County. (Hantsbarger).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Present in Lee and Macon Counties. (Guyton, Grimes).

CUTWORMS - ILLINOIS - Counts in the northwest averaged 0.5 per square foot, 0.1 in the west and 0 in the central part of the State. (Ill. Ins. Rept.).

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Light infestations on small grain in Brazos County. (Whipprecht).

ARMY CUTWORM (Chorizagrotis auxiliaris) - KANSAS - None found in any of the wheat, barley or alfalfa fields surveyed in 12 counties. (Marvin). TEXAS - Few found on vetch in Kaufman County. (Randolph). UTAH - Moderately numerous in some Box Elder County alfalfa fields. (Knowlton).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Hundreds per linear foot in small grains in Love County. (Coppock, Pennington).

A PLANT BUG (Hormostes reflexulus) - CALIFORNIA - Light infestations in wheat in the Ventucopa area of San Luis Obispo County. (Cal. Coop. Rept.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ALABAMA - Light numbers in Lee County. (Grimes). OKLAHOMA - Populations remain extremely low in all sections with heaviest numbers, 2-5 per 10 sweeps, reported from Murray County. (Coppock, Pennington). KANSAS - None found in any fields examined in several areas. (Matthew, Somsen). TEXAS - Light on alfalfa in Brazos County. (Whipplecht).

PEA APHID (Macrosiphum pisi) - NEW MEXICO - Light infestations in Socorro County alfalfa fields. (N. Mex. Coop. Rept.). OKLAHOMA - Building up in some central, south central and east central alfalfa fields with counts of 20-225 per 10 sweeps in Okfuskee County and 10-40 in Garvin County. (Coppock, Pennington). KANSAS - Nymphs found in non-economic infestation at 1 location in northern Shawnee County. (Matthew). TEXAS - Heavy infestations on vetch in a Brazos County orchard (Turney, Garner), light on alfalfa in Grimes County and light in vetch in Kaufman and Hunt Counties (Randolph).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Light numbers on burclover and vetch in Lee and Macon Counties. (Guyton, Grimes). TEXAS - Light on alfalfa in Grimes, Burleson, Hunt and Kaufman Counties. (Randolph).

TARNISHED PLANT BUG (Lygus lineolaris) - ILLINOIS - Adults averaged 0.5 per square foot in northwestern, 0.3 in western and 0.3 in central areas of the State. (Ill. Ins. Rept.).

LYGUS BUGS (Lygus spp.) - SOUTH DAKOTA - Overwintering adults active in alfalfa fields in west central area. (Hantsbarger). NEW MEXICO - Average 1 per sweep in alfalfa fields in Socorro County. (N. Mex. Coop. Rept.).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - ILLINOIS - Adults averaged 0.2 per square foot in northwest, 0 in western and 1.6 in central counties. (Ill. Ins. Rept.).

CLOVER ROOT CURCULIO (Sitona hispidula) - MARYLAND - Light in Talbot County red clover fields. (U. Md., Ent. Dept.).

CLOVER LEAF WEEVIL (Hypera punctata) - MARYLAND - Larval numbers light to moderate on red clover fields, Montgomery and Talbot Counties. Leaf feeding conspicuous. (U. Md., Ent. Dept.). ALABAMA - Larvae numerous on Lee County burclover. Many in last instar. (Guyton, Grimes). OKLAHOMA - Common in alfalfa throughout State with counts of 0-6 larvae per alfalfa crown. Light feeding injury in many fields. (Coppock, Pennington). DELAWARE - Late-instar larvae fairly common in Kent County, less so in eastern Sussex and New Castle Counties. (MacCreary, Conrad). KANSAS - Larvae found in all alfalfa fields surveyed in 5 central, 1 south central and 4 east central counties. Counts ranged 0.5-3 larvae per alfalfa crown. (Matthew, Somsen). ILLINOIS - Larvae average 5.0 per square foot, 3.5 and 0.1 in northwestern, western and central regions respectively. (Ill. Ins. Rept.). VIRGINIA - Larvae damaging alfalfa in Culpeper, Albemarle and Prince Edward Counties. (Evans).

ALFALFA WEEVIL (Hypera postica) MARYLAND- Light numbers of small larvae on new growth alfalfa at Fairland, Montgomery County. Hatching retarded by cool wet weather. (U. Md., Ent. Dept.). VIRGINIA - First-stage larvae observed in Prince Edward County (Evans) and in Fluvanna County (Smith, March 31). First and second-stage larvae feeding in alfalfa in Pittsylvania County. (Dominick).

CUCUMBER BEETLES - ALABAMA - Few specimens of (Diabrotica undecimpunctata howardi) observed in vetch in Macon, Lee and Russell Counties. (Guyton, Grimes). NEW MEXICO- Relatively large numbers of Diabrotica sp. in alfalfa fields throughout southern half of State. (N. Mex. Coop. Rept.).

FRUIT INSECTS

APHIDS - CALIFORNIA - Generally increasing on citrus in areas of San Bernardino, Los Angeles, Riverside, and Ventura Counties. The situation is being very closely observed as there is concern over this early heavy buildup. (Cal. Coop. Rept.).

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - CALIFORNIA - Populations heavy in peach trees at San Jose in Santa Clara County. (Cal. Coop. Rept.).

CLOVER MITE (Bryobia praetiosa complex) - NEW MEXICO - Eggs beginning to hatch on apple trees in Bernalillo and Sandoval Counties. Larvae grouping on green bud tips in unsprayed orchards. (N. Mex. Coop. Rept.).

GREEDY SCALE (Aspidiotus camelliae) - CALIFORNIA - Heavy populations on citrus fruit at La Jolla in San Diego County. (Cal. Coop. Rept.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) FLORIDA - No new finds since November 26, 1957, making 115 fly-free days through March 21. (Fla. Coop. Surv.).

PEACH TREE BORER (Sanninoidea exitiosa) ALABAMA - Causing severe damage in 2 small orchards in Lee and Russell Counties. (Grimes). FLORIDA - First reported in 1958 at Gainesville, Alachua County. Det. R.E. Waites. (Fla. Coop. Surv.).

SAN JOSE SCALE (Aspidiotus perniciosus) NEW MEXICO - Heavy infestation on unsprayed and unattended apple trees in Bernalillo and Sandoval Counties. (N. Mex. Coop. Rept.).

PEAR PSYLLA (Psylla pyricola) CALIFORNIA - Light infestations reported on pear at Chicago Park in Nevada County. (Cal. Coop. Rept.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) OKLAHOMA - Spinning webs in native plums in Atoka, Coal and Hughes Counties. Infestation light. (Coppock). TEXAS - Infesting peach and plum trees in Brazos County. (Turney, Garner).

PECAN WEEVIL (Curculio caryae) OKLAHOMA - Examination of fallen pecans in University orchard at Stillwater showed live larvae in approximately 5 percent of nuts. Escape holes indicated most weevils have emerged and entered soil. (Bieberdorf).

PECAN NUT CASEBEARER (Acrobasis caryae) OKLAHOMA - No specimens of overwintering stage found in over 275 pecan branch tips examined in 2 Okfuskee County orchards. (Coppock, Pennington).

OBSCURE SCALE (Chrysomphalus obscurus) TEXAS - Killing pecan branches in Brazos County. (Turney, Garner).

HICKORY SHUCKWORM (Laspeyresia caryana) ALABAMA - Large numbers in pecan shucks on the ground in Lee County. (Guyton).

FILBERTWORM (*Melissopus latiferreanus*)-OREGON - Collected from Franquette variety of walnut at Newberg, Yamhill County, in fall of 1957. Det. H.W.Capps. This appears to be first record from this variety in Oregon. (Every).

TRUCK CROP INSECTS

Potato Psyllid Survey on Overwintering Host

Potato psyllid surveys are conducted during late March in the southern overwintering areas. Generally, the weather was favorable for the 1958 survey in Texas. Development of lycium varied considerably between sections and condition of the plants was fair to excellent. Eggs were found in the Big Spring-San Angelo section indicating emergence was not complete.

Lycium was abundant and well advanced in growth in Arizona and California; mostly dormant in New Mexico; beginning to leaf in the Big Springs and El Paso section; one-half to well developed leaves in San Angelo-Del Rio section; very woody in Sanderson section. Severe winter and late spring east of the Continental Divide probably delayed development of lycium except in the southern areas. Potential population for 1958 is greater than in 1957 because of abundance of host and the survey indicates a potential outbreak this season. A comparison of populations found in 1957 and 1958 spring surveys is shown in the table below.

Potato Psyllid Survey on Overwintering Host

State	District	Average No. per 100 Sweeps	
		1958	1957
Texas	San Angelo	217	184
	Big Springs	227	516
	Del Rio	134	17
	Sanderson-Marathon	181	129
	El Paso	6	158
New Mexico	Southern	7	158
Arizona	Southern	93	95
California	Southern	96	143

(PPC and Coop. States).

Beet Leafhopper Conditions in the Southern Great Plains and Adjacent Areas, 1958

As of March 8, 1958, beet leafhopper (*Circulifer tenellus*) conditions in the southern Great Plains and adjacent areas may be summarized as follows: The overwintering adults of this insect and its host plants are more abundant and widespread than in any of the past 5 years. Current indications are that the number of spring-generation leafhoppers that will move from the spring breeding areas of the Edwards Plateau & adjacent plains area into cultivated districts of eastern New Mexico, the South Plains and Panhandle of Texas, and the Arkansas River Valley of Kansas and Colorado will be the largest since the study was started in 1954.

The magnitude and time of the movement will depend upon unpredictable weather conditions during March and April. The beet leafhopper is a sunloving, dry-climate insect, and the size of the spring generation can be reduced very rapidly if stormy, wet weather occurs at the time they are hatching.

Details of the 1958 survey: Surveys made in the beet-leafhopper spring breeding areas of New Mexico, western Texas, western Kansas, and eastern Colorado during late February and early March showed the weed-host plants of this insect to be more abundant and widespread than in any year since the study was started in 1954. Stops made at regular intervals throughout the area showed that host plants were present at all but 25 percent of the stops in New Mexico and all but 6 percent of those in Texas. They were abundant and widespread at 23 percent of the stops in New Mexico and 39 percent of those

in Texas. In Kansas and Colorado, the host plants were very scarce. They were found at only 20 percent of the stops, and at the majority of those places, they were very scattered.

Beet leafhoppers were found at 49 percent of the stops sampled in New Mexico and averaged 35 per 100 square feet. They were found at 54 percent of the stops sampled in Texas and averaged 21 per 100 square feet. The largest populations of leafhoppers per unit-area were found in the Rio Grande Valley of New Mexico and Texas, but the host plants were scarce. South from Alpine and Sonora, Texas, which is near the 30°30' latitude, the host plants were abundant, but the leafhoppers were scarce. The large breeding area this year is centered around Monahans, Texas, and the southeastern corner of New Mexico. In that area host plants were abundant, widespread, and in good condition for producing a large spring brood, and there was an average of 31 overwintered females per 100 square feet of host plant at the time the survey was made. The spring generation of leafhoppers produced in this area are the ones that move north to infest tomatoes, beets, and other crops in eastern New Mexico, western Texas, western Kansas, and eastern Colorado. (ARS and Coop. States).

BEAN APHID (Aphis fabae)- CALIFORNIA - Heavy populations on horse beans in the Richvale area, Butte County. (Cal. Coop. Rept.).

BEEF LEAFHOPPER (Circulifer tenellus)- TEXAS - Less than 1 per 100 sweeps collected March 7, 14 and 24 in Winter Garden area. (Harding).

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Infestations on cabbage moderate to heavy in Thomas, Colquitt and Brooks Counties. (Johnson).
SOUTH CAROLINA - Populations on early spring cabbage/lower than usual during past winter. Reports now indicate numbers sufficiently abundant to warrant control measures on some plantings. (Reid).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - SOUTH CAROLINA - First adults seen on March 28 in field in which potato plants were coming up. (Reid).

IMPORTED CABBAGEWORM (Pieris rapae)- GEORGIA - Cabbage lightly infested in Colquitt and Brooks Counties. (Johnson). SOUTH CAROLINA - Adults seen laying eggs on cabbage, April 1. (Reid).

MELON APHID (Aphis gossypii) - TEXAS - Damage to seedling watermelons in Winter Garden area. (Harding).

SOUTHERN POTATO WIREWORM (Conoderus falli) - SOUTH CAROLINA - Overwintering larval populations in potato fields now lower than during past two springs. No adults taken in light traps during February and March for first time since 1954. (Reid).

CUCUMBER BEETLES - NEW MEXICO - Diabrotica sp. caused moderate damage to lettuce in Valencia County. (N. Mex. Coop. Rept.). TEXAS - Diabrotica undecimpunctata howardi damaging seedling watermelons in Winter Garden area. (Harding).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light to moderate on tomato plant beds in Thomas and Colquitt Counties. (Johnson).
CALIFORNIA - Light to medium damage to tomato plants in Reedley area of Fresno County. (Cal. Coop. Rept.).

STRAWBERRY CROWN MOTH (Ramosia bibionipennis) - OREGON - Limited damage to raspberry plantings in Yamhill County, March 31. Continues scarce in strawberry fields except for infestations in hill area of Washington County. (Rosenstiel).

RASPBERRY ROOT BORER (*Bembecia marginata*) - OREGON - Second-year larvae actively feeding in year-old cane stubs and at base of this year's fruiting canes in Washington and Marion Counties. (Rosenstiel, March 31).

TOBACCO INSECTS

GREEN PEACH APHID (*Myzus persicae*) - GEORGIA - Infestations on tobacco plant beds light to moderate in 8 tobacco-growing counties. (Johnson).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - GEORGIA - Light to moderate infestations on tobacco plant beds in tobacco-growing areas of State. (Johnson).

ADDITIONAL NOTES

UTAH - MOSQUITO larvae have appeared in many counties, 1-35 *Aedes dorsalis* and *A. vexans* per dip along railroad right-of-ways. Most sections have first and second instars; very few pupae. (Fronk, Knowlton, April 2).

FLORIDA - An ARBORVITAE APHID (*Cinara tujafilina*) found on arborvitae in Brevard and Seminole Counties in late February and early March. (Fla. Coop. Rept.).

ILLINOIS - APHIDS beginning to hatch March 31 in southern area. Several tarnished plant bugs and other bugs noted. (Meyer).

NEVADA - SPOTTED ALFALFA APHID generally light in Clark and southern Nye Counties. PEA APHID light to medium in these counties and 10 to 15 times more numerous than spotted alfalfa aphid. (Zoller, Peterson). Additional spring rains have caused continued good growth of winter and spring vegetation in southern Nevada breeding grounds. Some movement to tomato plants in Moapa Valley, Clark County. Curly top in many of these plants. (Dorst). TICK specimens collected from a Rocky Mountain sheep in Clark County August 10, 1957, determined as *Dermacentor hunteri* by C. F. W. Muesebeck. (Bechtel).

COTTON INSECTS

Boll Weevil Survival Survey - Spring 1958

TEXAS (Waco) - Five hundred field-collected boll weevils were installed on October 29-31, 1957, in each of 10 cages located in a wood lot in a continuation of survival studies made each year beginning with the winter of 1939-1940. Activity in March, 1958, was 2.1 weevils per inspection, compared with the moderate to high survival years when activity ranged from 4.3 to 26.5. Rainfall for January, February and March, 1958, was 1.23 inches below normal. Weather during the winter was cool but there were no extremely low temperatures or long freezing periods. Freezing temperatures occurred on 28 days with the lowest being 20° on February 13. Because the winter was relatively mild, survival of weevils may be expected to be fairly high and to fall within the range of that occurring in 1957, 1954, 1953, 1952, 1950, 1946, 1945, and 1944, but less than that of 1955 and 1949, when survival was extremely high. After a dry July and August, rains during September, October and November, 1957, made conditions for fruiting cotton favorable and there was a late population buildup, weevils entering hibernation quarters last fall in normal numbers for the area. (Parenchia et al.).

Cotton Fleahopper Hibernation and Survival at Waco, Texas: Two species of croton were collected on November 8, 1957, for the cotton fleahopper survival studies. One hundred Croton texensis plants were collected from one location in each of Bell, Coryell, and Bosque Counties and 100 Croton capitatus plants were collected from one location in each of McLennan, Falls, Limestone and Hill Counties. The host plants were installed in emergence cages (100 plants per cage) on February 14, 1958. The first emergence of cotton fleahopper nymphs occurred on March 19. This is the latest date of emergence since 1952 when it was recorded on March 20. Total emergence for the month was 1558. This was greater than in 1956, 1954 and 1952, but considerably less than in 1957, 1955 and 1953. The host plants were collected in the same locations each year. Rains during the fall of 1957 resulted in a heavy crop of croton over the central Texas area. Carryover on this host plant is expected to be general. Moisture conditions are favorable for the development of early hosts and evening primrose has already made considerable progress in development which will be favorable for build-up of early fleahopper populations. If favorable conditions continue, horsemint should make normal progress and the pest should migrate to cotton in late May and early June. Since the early-season insect control program is practiced in this area during that period, it should prevent cotton fleahopper damage to the crop. (Parenchia et al.).

Cotton Insect Situation in Lower Rio Grande Valley, Texas: Small amount of damage being caused to cotton by cutworms, spider mites, aphids and fleahoppers. (Deer).

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Inspection of 4 lint cleaners in Tillman County March 26 revealed 1 larva. (Hatfield).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SCALE INSECTS - ALABAMA - Kermes galliformis and Lecanium quercifex numerous on twigs of oak trees in Lee County. Specimens of Toumeyella numismaticum scarce, but those found almost full-grown. (Guyton). TEXAS - Icerya purchasi infesting ornamental plants in Waller County. (Turney). OREGON - Based on number of inquiries, greater than normal infestations of Pulvinaria floccifera and Coccus hesperidum are occurring in the State this spring. (Every).

A CURCULIONID (Pissodes sp.) - WEST VIRGINIA - Killing young Scotch pine in a Mason County nursery. (W. Va. Ins. Surv.).

A HACKBERRY BYLLID (Pachypsylla venusta) - KANSAS - Beginning to emerge at Manhattan, Riley County. (Matthew).

A PSYLLID (prob. Trioza tripunctata) - WEST VIRGINIA - Infestation moderate to heavy on red, Scotch and white pine statewide, particularly in plantations. (W. Va. Ins. Surv.).

WHITEFLIES - ALABAMA - Heavy infestations in Lee County on Ligustrum japonica, with large numbers of immature forms on most leaves. Upper surfaces of leaves covered with black fungus. (Guyton).

A LEAF MINER (Liriomyza dianthi) - CALIFORNIA - Occurred on Dianthus caryophyllus at Auburn for a first record in Placer County. (Cal. Coop. Rept.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - SOUTH DAKOTA - Linognathus vituli and Haematopinus eurysternus prevalent on cattle in widespread locations throughout the State. (Hantsbarger).

SHEEP KED (Melophagus ovinus) - NEW MEXICO - Quite abundant on sheep in Lincoln, Torrance and De Baca Counties. (N. Mex. Coop. Rept.).

STORED-PRODUCT INSECTS

Stored Grain Insects, Oregon: No khapra beetles were found during the inspection of 114 establishments from January through March, 1958. Lesser grain borer was recovered from 4 locations and saw-toothed grain beetle was most prevalent species collected. (Larson).

A DERMESTID (Trogoderma sternale ssp.) - NEVADA - Reared from mixed grain products collected at Minden, Douglas County, Nov. 26, 1957. Det. G. T. Okumura. This appears to be second State record for this species. (Bechtel).

BENEFICIAL INSECTS

ANTHOCORID BUGS (Anthocoris spp.) - SOUTH DAKOTA - Nymphs and adults becoming active in west central area alfalfa fields. (Hantsbarger).

DAMSEL BUGS (Nabis spp.) - SOUTH DAKOTA - Adults active in alfalfa fields of west central area. (Hantsbarger). NEW MEXICO - Averaged about 20-30 per 100 sweeps in alfalfa fields in Socorro County. (N. Mex. Coop. Rept.).

LADY BEETLES - ALABAMA - Several species found in Lee, Macon and Russell Counties, with Olla abdominalis the most common. (Guyton). Hippodamia convergens fairly common in fields of small grain and clover. (Guyton, Grimes).

MISCELLANEOUS INSECTS

BROWN-BANDED ROACH (*Supella supellectilium*) - NORTH DAKOTA - With the reporting of 6 new infestations since January 1, this pest is shown to be established over a wide area of the State. (N. D. Ins. Rept.). - OREGON - Infestation reported from a Redmond house, March 31. Known distribution increasing in the State. (Every).

EASTERN LUBBER GRASSHOPPER (*Romalea microptera*) - FLORIDA - Nymphs noted on *Erigeron* sp. at Collier Seminole State Park, Collier County. First specimens noted for the year, March 20. (Fla. Coop. Surv., March 28).

EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) - DELAWARE - First swarm of season noted April 1 in house in New Castle County. (MacCreary, Conrad).

IMPORTED FIRE ANT (*Solenopsis saevissima v. richteri*) - FLORIDA - Extensions found in Jackson, Calhoun and Gadsden Counties. First heavy infestation found in southern Hillsborough County. (Fla. Coop. Surv.).

VARIED CARPET BEETLE (*Anthrenus verbasci*) - OREGON - Numerous reports of home infestations this spring. (Every).

CORRECTION: CEIR 8(14):259 - The last sentence in the boll weevil survey section for South Carolina, North Carolina and Virginia should read: "In only one year (1940) have fewer weevils been found in spring examinations in this county."

LIGHT TRAP COLLECTIONS

	Hel. zea	Pseud. unip.	Trich. ni	Laph. frug.	Agrot yps.	Perid. marg.	Felt. subt.	Prod. ornith.
FLORIDA								
Monticello 4/1		1	1					
Quincy 3/24		29						
SOUTH CAROLINA (County)								
Charleston 3/31-4/6		10		1	1	2		
TEXAS								
Brownsville 3/22-28	80	20	28	60	50	8	222	
Weslaco 3/16-21		953	214	21	89	64	226	36
Winter Haven 3/20		39	7		22	31	11	

SUMMARY OF INSECT CONDITIONS - 1957

MISSOURI

Reported by Stirling Kyd, R. E. Munson and G. W. Thomas

Insect Outbreak Highlights: The heaviest infestation of POTATO LEAFHOPPER within the last decade caused severe yellowing of alfalfa over most of the State during late May and continued into mid-July. Scattered, severe infestations of CUTWORMS resulted in replanting of some cotton and corn fields during May and again in early July in the cotton-growing section of the State, and in mid-July heavy damage to small corn occurred in scattered fields over the northeast quarter of the State. VARIEGATED CUTWORM destroyed new growth following first cutting of alfalfa in the extreme southwest area. EUROPEAN CORN BORER populations reached an all time high as revealed by fall abundance survey, however, the east central and southeast areas showed considerable decline. The State mean for seven districts in 1957 was 346 compared with 90 in 1956 and 132 in 1955. Although no live, overwintering SOUTHWESTERN CORN BORER larvae could be found during the month of April, a moderately heavy first-brood infestation developed in several extreme southwestern counties, and a heavier second-brood developed on late corn in this same area. Percentage of girdled stalks ranged from less than 1 up to 44 percent. Heavy infestations of FALL ARMYWORMS began on late-planted corn early in July and on late-planted grain sorghum in early August and continued throughout the season over most of the State. Damage was light. Scattered fields of late-planted corn and soybeans were heavily damaged by GARDEN WEBWORMS over the western half of the State in mid-July and very heavy populations developed on alfalfa in August over most of the State.

Very heavy populations of CORN LEAF APHIDS were present on grain sorghums and corn by late June and continued into early August over the State, but apparently little or no economic damage occurred. Both first and second generations of CHINCH BUGS caused considerable damage to corn and grain sorghums in the western half of the State. Fall survey revealed that out of 37 counties surveyed 6 counties rated very severe, 8 counties rated severe, 5 counties rated threatening, 3 counties rated light and 15 counties rated non-economic. All heavily infested counties were along the western side of the State. A very heavy outbreak of BAGWORMS occurred from June through August over the State. Several species of shrubs and trees were damaged with some cedars and evergreens killed. BOLLWORM populations began to increase late in July and by mid-August had reached outbreak proportions in parts of Dunklin, New Madrid and Pemiscot Counties. For the second consecutive year, a very few BOLL WEEVILS successfully overwintered in Missouri, but it was not until mid-August that damage reached the point requiring controls. Excessive rains and late cotton provided excellent reproductive conditions which continued until the freeze of October 23, and allowed a high number of weevils to enter hibernation.

Corn Insects: *CUTWORMS (*Agrotis ypsilon*, *Feltia subgothica* and *A. gladiaria*). (see insect outbreak highlights). WIREWORMS (mainly *Melanotus* spp.) - Many fields of corn over the northern half of the State were reduced from 2 to 5 percent while a few fields in the west central area had stands reduced up to 30 percent. Widely scattered fields of small corn in Dunklin and New Madrid Counties had spots of $\frac{1}{4}$ to 1 acre killed by SAND WIREWORM (*Horistonotus uhlerii*). CORN FLEA BEETLE (*Chaetocnema pulicaria*) populations were considerably lower than the past three years and averaged 1 to 2 beetles per plant over much of the northern two-thirds of the State. CHINCH BUG. (see highlights). *Reported by Peters, Kyd, and Thomas.

NORTHERN CORN ROOTWORM (Diabrotica longicornis) caused heavy lodging in several fields of early planted corn in Mississippi and New Madrid Counties. Several fields along the Missouri River bottoms showed similar injury. CORN LEAF APHID (Rhopalosiphum maidis) was heavy in the whorls and on tassels of corn, but little or no evidence of plant injury was observed. CORN EARWORM (Heliothis zea) whorl infestations ranged from 1 to 8 percent, which was much lower than during the past several years. With the large acreage of late planted corn, ear infestation continued high with from 75 to 100 percent of the ears showing damage. Fall surveys of ear damage showed an average State loss of 4.53 percent. FALL ARMYWORM and SOUTHWESTERN CORN BORER (see highlights). CORN SAP BEETLES (Carpophilus sp.) larvae caused moderate to heavy damage to ears. EUROPEAN CORN BORER (see highlights).

Grain Sorghum Insects (Reported by Munson, Kyd and Thomas) A few fields in west central and northwest areas, where untreated seed was used, had to be replanted due to the feeding of KAFIR ANT. FALL ARMYWORM, CORN LEAF APHID, CHINCH BUG. (see highlights). CORN EARWORM infestation and damage to the heads of grain sorghum was considerably lower than during the past three years except in the extreme southeast area where outbreak resulted in loss of 7 to 33 percent of grain. SORGHUM WEBWORM (Celama sorghiella) was light to heavy over the extreme southeast area. Loss of grain ranged from 5 to 20 percent in the more heavily infested fields. SORGHUM MIDGE (Contarinia sorghicola)- A very few fields of hybrid grain sorghum were heavily damaged in the extreme southeast area where the set of grain was reduced from 75 to 95 percent. EUROPEAN CORN BORER (Pyrausta nubilalis)- In several hybrid seed production fields in Carroll and Saline Counties second-generation infestations became very heavy on the male rows with 45 to 65 percent of the stalks infested.

Cereal Insects (Reported by Kyd and Thomas) WINTER GRAIN MITE (Penthaeus major) remained non-economic in the southwest area. ENGLISH GRAIN APHID (Macrosiphum granarium) by the first week in June, averaged 2 to 7 aphids per head of wheat over the northern half of the State. Parasites, predators and insect diseases were largely responsible for keeping this aphid under control. APPLE GRAIN APHID (Rhopalosiphum fitchii) - From 50 to 60 percent of the wheat fields in the north central and northwest areas had light populations, 2 to 32 aphids per linear foot of drill row. No infestations of GREENBUG (Toxoptera graminum) were observed. SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) built up to the point of some yellowing in several fields of barley in the southwest area. A few fields of wheat in the west central area, especially in the Missouri River bottoms, had spots of 1/2 to 1 acre in size stunted, yellowed, or killed by WIREWORM feeding. ARMYWORM (Pseudaletia unipuncta) - The first larvae were observed in barley and fescue on April 25, in extreme southeast Missouri. Economic populations of up to 12 larvae per square foot developed in rank, lodged barley generally over the southeast area and in scattered fields of barley over the remainder of the southern half of the State. From 30 to 70 percent of the larvae became parasitized by Tachina or Apanteles species. Chemical controls were used primarily in the extreme southeast area. CHINCH BUG (Blissus leucopterus)- Moderate to heavy infestations in small grains were common in the west central, northwest and north central areas where counts ranged up to 15 bugs per linear foot of drill row. HESSIAN FLY (Phytophaga destructor)- The heaviest infestation continued to be in the east central area and a considerable buildup appeared in the southeast area, where several fields were from 10 to 15 percent lodged by this pest. The stubble survey revealed only 5 counties with more than 10 percent of the stubble with "flaxseed." The state average for the 65 counties surveyed was 3.53 percent of the stubble infested. FALL ARMYWORM (Laphygma frugiperda)- A very few fields of early, fall seeded barley was damaged to the point of replanting.

Legume and Pasture Insects: (Reported by Kyd, Thomas and Munson) PEA APHID (Macrosiphum pisi) was a problem only in individual fields of alfalfa in the southeast and north central areas. Generally, populations were much lower than during the past several years. SPOTTED ALFALFA APHID (Therioaphis maculata) - During the first week of May, from 1 to 2 nymphs and wingless adults per 100 sweeps were taken in the north central and northwest areas. This indicated that these aphids probably came from overwintering eggs. Populations remained very light until late July and August when some buildup occurred over most of the State. It is felt that timely summer rains were largely responsible for keeping populations below economic levels. YELLOW CLOVER APHID and CLOVER APHID (Myzocallis trifolii and Anuraphis bakeri) populations were much lower than during the past two years. SWEETCLOVER APHID (Myzocallidium riehmi) was light and lower than during the past season. CLOVER LEAF WEEVIL (Hypera punctata) ranged up to a high of 7 larvae per crown of alfalfa and 3 larvae per crown of red clover. A fungus disease had largely eliminated the problem by early May. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) adults began appearing in red clover fields over the northern half of the state early in May, but larval infestation in the stems and heads was less than 50 percent of the past two years. DINGY CUTWORM (Feltia subgothica) (see highlights). BRONZED CUTWORM (Nephelodes emmedonia) - A few bluegrass pastures in Clay County (west central) had small spots killed by the larval feeding. WHEAT STEM MAGGOT (Meromyza americana) - From 1 to 4 percent of the stems of bluegrass in the northwest seed producing area was destroyed. CLOVER ROOT CURCULIO (Sitona hispidula) and SWEETCLOVER WEEVIL (Sitona cylindricollis) caused light to moderate damage to red clover, sweetclover and alfalfa in old, established stands. POTATO LEAFHOPPER (Empoasca fabae) (see highlights). BLISTER BEETLES (Epicauta spp.) - Small spots within widely scattered fields of alfalfa and soybeans had heavy foliage damage from striped blister beetle. Black blister beetle caused some light damage to the foliage and blooms of alfalfa during September.

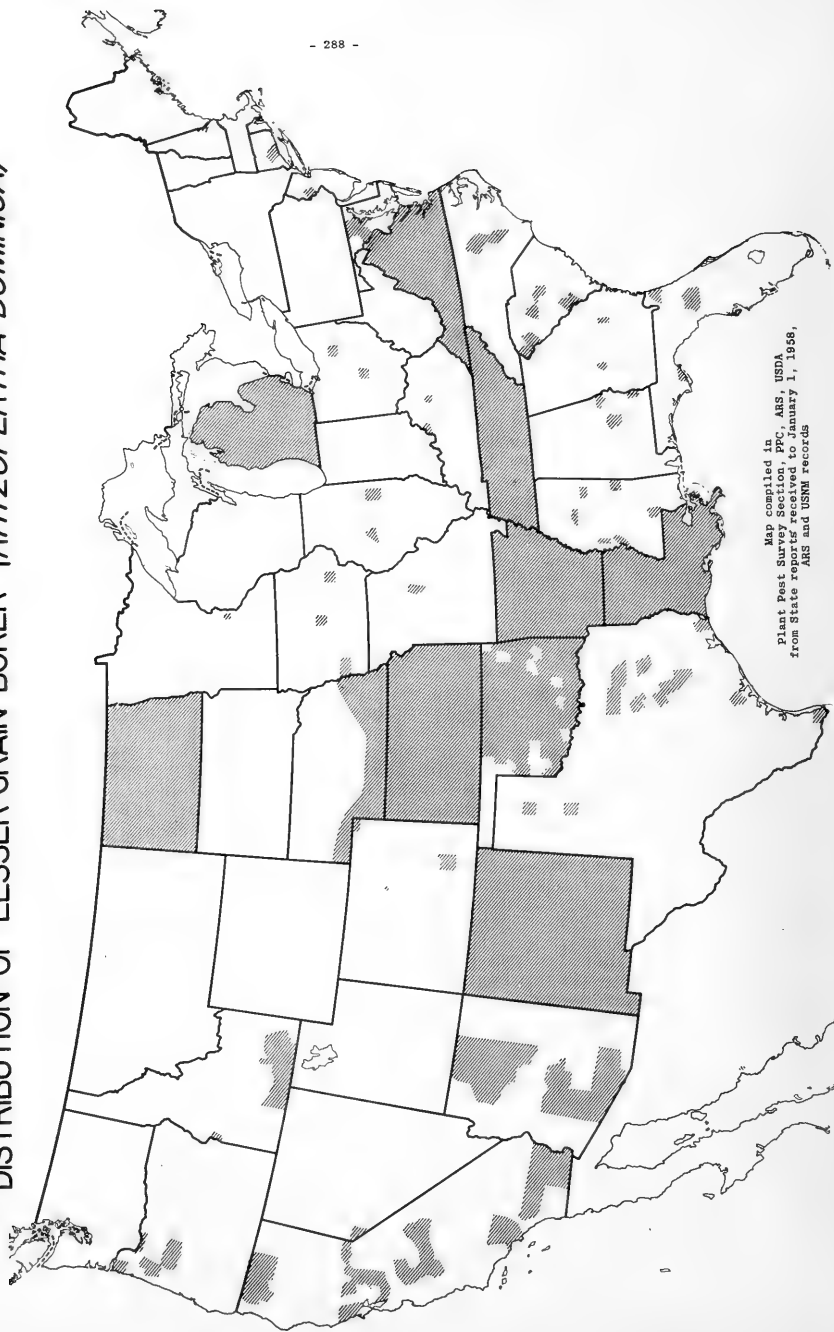
GARDEN WEBWORM (Loxostege similalis) (see highlights). PLANT BUGS (Lygus lineolaris, Adelphocoris lineolatus and A. rapidus) became numerous (up to 7 nymphs and adults per sweep) on alfalfa over the northern third of the state, but apparently caused little damage to the second cutting. THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) was present in most alfalfa fields over the southern third of the State but populations were so low that damage was non-economic. GRASSHOPPER (Mainly Melanoplus bilituratus, M. femur-rubrum and M. differentialis) population started out in moderate to high numbers in most pastures and legume fields. Areas of heaviest grasshopper concentrations included the southwest and the northwest areas. As the season developed nymphal populations declined, and, by the time of the fall adult survey, most of the state had non-economic numbers except for a few scattered spots of light to moderate populations in the northwest area. GREEN CLOVERWORM (Plathypena scabra) populations on alfalfa were slightly higher this year than last although no controls were needed. Soybeans in the west central area showed heavy silvering from THrips feeding. Leaf counts ranged up to 11 thrips per leaf. Populations soon declined, and, apparently plants fully recovered. BEAN LEAF BEETLE (Cerotoma trifurcata) - Adult populations on germinating and newly emerging soybeans in the extreme southeast area was less than during the past several years and would average about 1 beetle per 5 linear feet of row. During late July and August, adults caused considerable leaf feeding injury in the central, east central and northwest area where counts ranged from 1 to 3 beetles per linear foot of row. SOYBEAN CYST NEMATODE (Heterodera glycines) - Up to November 30, 1957, USDA, Plant Pest Control Division personnel and Missouri State Department of Agriculture personnel had sampled 3,342 fields consisting of 105,713 acres in 47 counties. Known infested area was still confined to three extreme southeast counties as follows: 1 field of 60 acres in Stoddard County, 6 fields of 108 acres in New Madrid County, and 77 fields of 2,886 acres in Pemiscot County.

COTTON INSECTS (George W. Thomas & Perry L. Adkisson). Adverse weather conditions plagued the Missouri cotton crop throughout the 1957 season. There were several major insect problems occurring generally over large portions of individual counties but not over the entire cotton-growing area. PLANT BUGS (including tarnished plant bug and rapid plant bug)- Activity of the fleahopper complex reached a peak late in July and continued high throughout August. Economic populations occurred in many fields but damage was generally light. Control measures were used in only a few individual fields. SPIDER MITES (mainly Tetranychus atlanticus). - Marginal infestations were present by early July but heavy rainfall prevented a serious buildup. Some increase did occur in late August resulting in about 25 percent of the fields showing scattered small spots of locally heavy mite populations. Control measures were largely marginal. Apparently T. atlanticus appeared to survive heavy rainfall much better than other species of mites. BOLLWORM (Heliothis spp. et al.) infestations increased late in July and reached a peak by mid-August. Heavy infestations continued well into September. At the peak of infestation, up to 50 eggs and 65 to 100 larvae per 100 terminals could be found in Dunklin, Pemisicot, and New Madrid Counties. Control measures were generally used in these heavily infested counties and good control was obtained with from 1 to 2 applications of recommended materials.

For the second consecutive year, a very few BOLL WEEVILS (Anthonomus grandis) successfully overwintered in Missouri. Very light marginal infestations were found in Dunklin County late in June and infestations slowly increased in Dunklin, New Madrid, Scott and Stoddard Counties until mid-August. Migration began in mid-August and percentage of field infestations rose sharply and continued to increase until the killing freeze of October 27. Boll damage to mid-season and late-planted cotton ranged from light to very heavy along the western and northern margins of the cotton-growing area. Estimates of loss in this heavily infested area ranged from 0 up to as high as half a bale per acre. Weevil damage to the bolls also reduced the quality of the crop in the above-mentioned area. Some control measures were used early in September. CUTWORMS (Agrotis ypsilon and Feltia subgothica)- Scattered fields, particularly in northern New Madrid and Scott Counties, had light to very heavy infestations. Damage ranged from 2 percent up to total loss of stand in a very few fields. Spotted heavy infestations of COTTON APHID (Aphis gossypii) occurred in scattered fields in late June. Populations gradually diminished, but by mid-August again rapidly increased. An average of 5 to 20 aphids per leaf persisted until the October 27 freeze. Considerable honeydew was present but most fields escaped having honeydew on open bolls. THRIPS counts were considerably higher this season than last, due mainly to the lateness of planting. Several fields had 5 to 13 thrips per plant of 4 to 6-leaf cotton in June but the fields soon outgrew this injury. For the third consecutive year, third-brood EUROPEAN CORN BORER (Pyrausta nubilalis) larvae were present in widely scattered fields of cotton in Scott, Mississippi and New Madrid Counties. Percentage of stalks infested was low, 0.5 to 2 percent. Once again it was noted that the later-instar larvae usually left the stalks and attacked nearly mature bolls causing damage similar to that of bollworm. Very low numbers of COTTON LEAFWORM (Alabama argillacea) were found early in August. Populations build up and moderate to heavy ragging appeared in many fields where controls were not applied. Due to the lateness of the crop very little staining of lint occurred.

Cooperators: The following Missouri entomologists also contributed to the Cooperative Economic Insect Survey during 1957: Harry E. Brown, Lee Jenkins, Wilbur R. Enns, Curtis W. Wingo, Don Peters, Perry L. Adkisson, W. D. Buchanan, Sam Goolsby and Robert Jackson.

DISTRIBUTION OF LESSER GRAIN BORER (*RHYZOPERTHA DOMINICA*)



Map compiled in Plant Pest Survey Section, ARS, USDA from State reports to January 1, 1958, ARS and USNM records.

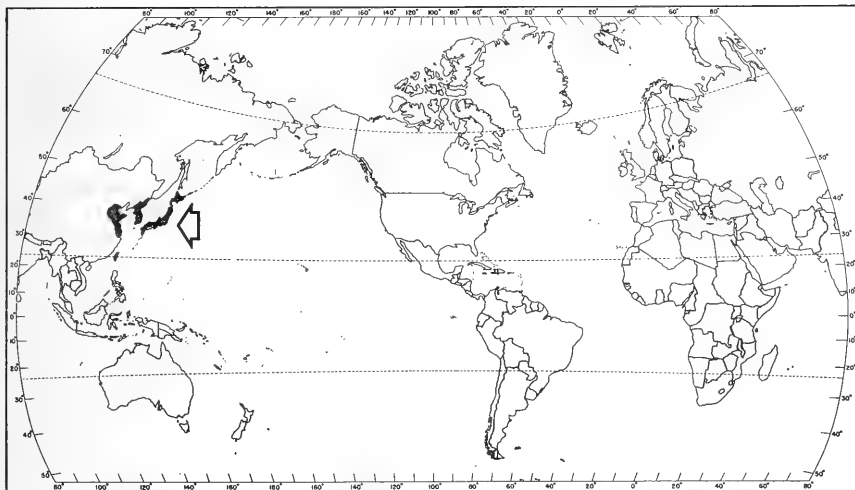
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

FRUIT WEEVIL* (Rhynchites heros Roelofs)

Economic Importance: Destruction of the fruit and fruiting twigs of host trees by this curculionid may be practically complete in severe infestations, The pest is common throughout most of Japan, Korea and in areas of China. Serious injury has occurred on pear in the latter country. After oviposition, the adults cut into the fruits which then drop to the ground. One adult may cause considerable fruit-drop from each tree.

Hosts: Attacks peach, pear, apple, cherry, apricot, plum, quince, loquat and fig. Most severe on loquat and peach in Japan.

Distribution: Known to occur in Japan, Korea, Formosa and areas of China.



General Distribution of Fruit Weevil

* Also called peach weevil (Curculionidae, Coleoptera) No. 45 of Series

Life History and Habits: Overwintering adults appear in April and begin to feed on young buds. Mating starts in 3 to 4 days and oviposition 2 days later. Deep holes about 7 mm. are eaten into the young fruit after which the female deposits from one to three eggs in each cavity. Usually only one excavation is made in each fruit, but when populations are abundant, two or more egg cavities may be made. About 35 to 50 eggs are produced by each female. A gelatinous secretion from the mouth is placed over the hole in the fruit. The eggs hatch in about a week and the larvae feed and develop in the soft seed or seed cavities of the fruit. They sometimes may leave the fruit and feed on roots of weeds and decaying vegetables. The larval period requires 40 to 50 days. Pupa-tion takes place in the soil and lasts 3 to 4 weeks. Late-maturing larvae hibernate in earthen cells and pupate in the spring. Adults live practically all summer and continue to attack available fruits. There is one generation a year. Adults are active at night, feeding on all parts of the tree. Adults may be jarred from trees in the same manner as the plum curculio.

Description: The adult is large, 10 mm. long, iridescent, reddish-purple in color, robust, with a long thick snout. It is covered with soft, dark red hairs. Body and wings densely, coarsely punctuate and furrowed. Legs long, the front pair particularly heavy. Eggs are elliptical, milk-white, about 0.7 mm. in length. Larvae 12 mm. when mature, fat with row of thorn-like cuticular projections on each segment of body. Pupae yellow, naked; long white cuticular thorns on back of head, venter of thorax, and each abdominal segment. A pair of brown thorns is found at anal end of body. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(15) 4-11-58



Rhynchites heros Adult

Figure of adult from Iconographia Insectorum Japonicorum, 2nd. edit., 1954. 1736 pp., Tokyo.





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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

Eighty-six percent winter survival of EUROPEAN CORN BORER in Boone County, Iowa. (p. 317).

GREENBUG heavy in northern Louisiana. Some damage also in Arkansas and Oklahoma. Spot infestations continue in north central Texas. (P. 317)

MEADOW SPITTLEBUG nymphs numerous in Ohio. (p. 320).

ARMYWORM moths appearing as far north as Champaign, Illinois and Riley County, Kansas. (p. 318). Also see LIGHT TRAP collections. (p. 328).

First SPOTTED ALFALFA APHID of the year in Arkansas and Florida. Buildup continues in southern New Mexico. Light to heavy populations in north central Texas. (p. 318).

PEA APHID building up in several areas including Oregon, New Mexico and Kansas. (P. 319).

PLUM CURCULIO appearing in Virginia peach orchards. (p. 320).

APPLE APHID and RED-BANDED LEAF ROLLER active in many fruit areas. (p. 320).

Some of the more IMPORTANT INSECTS in Ecuador. (p. 329).

INSECTS not known to occur in the United States. (p. 331).

ADDITIONAL NOTES. (p. 327). CORRECTION. (p. 327).

WEATHER OF THE WEEK ENDING APRIL 21

Below normal temperatures and heavy precipitation were limited mostly to the South and Pacific Northwest where farm activities were delayed. Elsewhere well-above normal temperatures and only light to moderate rain or none at all favored growth of vegetation and outside activities. Most of the rain in the South fell during the passage of an area of low pressure from the lower Great Plains from the 13th to 17th. Rainfall totaled from 1 to 2 inches generally along the immediate Gulf Coast. On the 15th, strong winds over all of Florida damaged some early crops in central and southern portions of the State. On the same date a squall line swept across the middle of the Peninsula, triggering severe thunderstorms and a few tornadoes. Ruskin reported 4.50 inches of rain in an hour, from 8:50 a.m. to 9:50 a.m. A tornado injured more than 50 persons at Fort Pierce, and damaged or destroyed numerous buildings along a path about 12 or 13 miles long.

In the northern half of the country east of the Rockies, temperatures averaged 6° or more above normal for the week, and over 12° above in the Great Lakes region and nearby areas where summerlike weather prevailed until the 19th. Pierre and Huron, South Dakota, recorded 91° on the 16th, highs in the 80's were reported in southern Michigan on the 17th, and maxima were in the 60° to 70° range in most of New England after the 14th. High temperatures greatly reduced the heavy snow cover in New England, from 31 inches to 10 at Greenville, Maine, and streams were bankfull in the south and some overflow was reported along the northern stem of the Connecticut River. In Michigan fruit has advanced 7 to 10 days ahead of normal and growers are concerned over possible frost damage. A serious fire hazard exists in northern portions of Wisconsin and Minnesota. High temperatures and strong winds on 1 or 2 days reduced moisture supplies rapidly in the northern Great Plains, and rain is needed in parts of eastern Montana and northern North Dakota. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - ARIZONA - Trimerotropis pallidipennis infesting 276,000 acres in area bounded by line from Buckeye to Florence to Casa Grande to Maricopa to Peoria. Adults, attracted by lights, causing concern in urban areas. May have damage to crops, especially cotton. (PPC, West. Reg.). OKLAHOMA - Undetermined species hatching on southern exposures on roadsides in Custer and Washita Counties. (Coppock, Goin). NEBRASKA - Some eggs of Melanoplus bilituratus in central Platte Valley in complete segmentation stage. Eggs of M. differentialis and M. bilituratus in northeast area in early eye-spot stage. (Andersen). SOUTH DAKOTA - Egg development in several counties of the central, east central and southeast regions as follows: Melanoplus bivittatus 65 percent segmented, 35 percent eye-spot; M. differentialis 60 percent segmented, 40 percent eye-spot; M. bilituratus clear to segmented. (King).

EUROPEAN CORN BORER (Pyrausta nubilalis) - ALABAMA - Not pupating in northern area April 19. (Eden). IOWA - An early spring survey in Boone County shows 86 percent winter survival. (Iowa Ins. Info.). MISSOURI - Pupation in extreme southeast area expected to begin week of April 20. (Kyd, Thomas). OHIO - Survey in Van Wert County early in April showed a reduction in viable population of 72.5 percent since early fall records. The decrease represents winter mortality and the mortality from corn-picking operation and some spring treatment work. (Triplehorn).

GREENBUG (Toxoptera graminum) - ARKANSAS - Common in southwestern, south central and as far east as Ashley County. Infestations vary up to 200 aphids per sweep. Some fields showing discoloration. Infestations spotted in many fields but field-wide in others. Small numbers of parasites and predators. (Boyer, April 12). OKLAHOMA - Light to very light damage in Kingfisher County; up to 500 aphids per linear foot in scattered wheat fields. Medium to severe damage to barley in Kingfisher County. Very light or non-existent in small grains in western and southwestern counties. (Coppock, Goin). One to two per linear foot in Canadian County. (Flora). LOUISIANA - Heavy on oats in northern part of State. Some infested fields in Bienville, Webster, Claiborne, Lincoln and Jackson Parishes being destroyed. Predators and parasites building up in these fields. Seedling corn also being damaged by the pest in some areas. (Spink). TEXAS - Spot infestations continued on small grain through the north central area, but decline in populations and no spread to other fields noted. (Chada). Medium widespread infestation on volunteer oats in Delta County. (Hawkins). KANSAS - None found. (Matthew).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Twenty to 100 per linear foot of grain in Kingfisher County. Much lighter in western and southwestern counties. (Coppock, Goin). DELAWARE - A few wingless forms on annual ryegrass in New Castle County. Not common generally. (MacCreary, Conrad). MISSOURI - Populations very low on all small grains in southeast. Counts range 0-5 aphids per linear foot of row. (Kyd, Thomas). TEXAS - Found in fields of small grain but little damage at present. (Chada). KANSAS - General throughout State. Only an occasional winged form found in northern counties. Counts low and range 2-25 per sweep. (Matthew).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light to medium (25-200 per linear foot) in small grains in Kingfisher County, 25-70 per linear foot in Kiowa and Jackson Counties. (Coppock, Goin). TEXAS - The predominant aphid in small grain in north central area. Heavy populations in fields of dense growth. Little damage appeared and population seemed on decline. (Chada).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Barley fields heavily infested through north central area and control needed in several fields. (Chada). Medium on wheat and barley in Kaufman County. (Hawkins).

- WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Common in southwest area grain, hundreds per linear foot in a few fields, lighter in most. (Coppock, Goin). Forty to 60 per linear foot in Canadian County. (Flora).
- BROWN WHEAT MITE (*Petrobia latens*) - NEBRASKA - Very light population in Republican Valley area with counts of 0-2 per 10 leaf blade sample. (Andersen).
- FALSE WIREWORMS (*Eleodes* sp.) - SOUTH DAKOTA - Infestations found in winter wheat fields of Stanley, Haakon, Jones and Mellette Counties where larval populations average one per linear foot of row. (Hantsbarger).
- ARMY CUTWORM (*Chorizagrotis auxiliaris*) - NEW MEXICO - Light on volunteer wheat in Curry County. Pupation underway. (N. Mex. Coop. Rept.).
- OKLAHOMA - About one larva per square yard in a few small grain fields in Washita County. (Coppock, Goin). COLORADO - Spotty in Boulder County. In general problem not as serious as last year. (Exp. Sta., Ext. Serv., Apr. 7). Also reported in Larimer County. (Ext. Serv.). SOUTH DAKOTA - Mixed infestations of this species and *Agrotis orthogonia* found in scattered wheat fields of Haakon, Jones and Mellette Counties. Average of one larva per linear foot of row. (Hantsbarger).
- PALE WESTERN CUTWORM (*Agrotis orthogonia*) - NEW MEXICO - Spotty and light on volunteer wheat in Curry County. (N. Mex. Coop. Rept.).
- ARMYWORM (*Pseudaletia unipuncta*) - ARKANSAS - No larvae found in 12 southern counties. (Boyer, Apr. 12). ILLINOIS - Moths noted as far north as Champaign. (Ill. Ins. Rept.). LOUISIANA - No larvae found in northern area. (Spink). KANSAS - First moth of season taken in light trap in Riley County, April 15. (Matthew).
- CORN FLEA BEETLE (*Chaetocnema pulicaria*) - ILLINOIS - Active in bluegrass alongside old corn fields; 254 per 100 sweeps in southwest, 190 in southeast and 53 in east southeast. (Ill. Ins. Rept.).
- A WHEAT STEM MAGGOT (*Hylemya cerealis*) - COLORADO - First larvae of season taken in wheat in Boulder County. (Exp. Sta., Apr. 7).
- SUGARCANE BORER (*Diatraea saccharalis*) - LOUISIANA - One egg mass per 300 plants from plantations in St. Charles and Terrebonne Parishes, two per 300 plants in Assumption Parish, and one per 60 plants in West Baton Rouge Parish. First reports for season in St. Charles and Terrebonne Parishes. (Spink).
- BILLBUGS - GEORGIA - Moderate infestations on corn in Colquitt County. (Johnson).
- SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARKANSAS - First found in State since last July. In the southwest area, 15-20 per 10 sweeps in Howard County and as many as 100 aphids per linear foot in Hempstead County. (Boyer et al., Apr. 12). NEW MEXICO - Continues to build up in alfalfa in southern area. Winged forms becoming abundant in some fields in Dona Ana County. (N. Mex. Coop. Rept.). OKLAHOMA - From 8-35 aphids per 10 sweeps in Kiowa and Tillman Counties, lighter in other southwestern, western and central counties. (Coppock, Goin). MISSOURI - None observed in southeast and southwest. (Peters, Jackson). UTAH - Present in Washington County alfalfa fields. (Knowlton). FLORIDA - Infesting alfalfa at Gainesville, Alachua County, April 3. (Tissot). This is first report of the species from the State in 1958. (Fla. Coop. Rept.). TEXAS - Infestations ranged from light to heavy on alfalfa in northern central area. (Chada). Few in alfalfa in Dimmit County. (Harding, Turney). KANSAS - None found. (Matthew).
- ALFALFA WEEVIL (*Hypera postica*) - DELAWARE - Second-instar larvae in Kent County and fairly common at Mt. Pleasant, New Castle County. Adults in

Sussex County. (MacCreary, Conrad). MARYLAND - Activity increasing. Adults ovipositing in Calvert County, April 17. Fifteen percent of alfalfa stems examined in Talbot and Wicomico Counties had small larvae. (U. Md., Ent. Dept.). VIRGINIA - Controls will be needed in many fields, especially in southern and central counties. From 1 to 25 larvae per tip and 5 to 40 percent of buds show damage. (Morris et al.). SOUTH CAROLINA - Has spread to Savannah River in Abbeville County. Also found in Anderson, Greenville and Newberry Counties. Surveys indicate infestations light northern Cherokee and Spartanburg Counties. (Nettles et al.). WEST VIRGINIA - First and second-instar larvae feeding on alfalfa in Monongalia County. (W. Va. Ins. Sur., Apr. 12). IDAHO - Second and third instars in untreated alfalfa in Boise Valley. Light injury. (Gittins). UTAH - Treatment underway in central and northern areas. (Knowlton). COLORADO - Adults fairly abundant in fields. (Exp. Sta., Ext. Serv., Apr. 7). Adult control completed in Montrose County. (Exp. Sta., Ext. Serv.) NORTH CAROLINA - In Mecklenburg County 300 larvae per 25 sweeps and some adults present. (Young).

CLOVER LEAF WEEVIL (*Hypera punctata*) - ILLINOIS - Average of 6 larvae per square foot in clover and alfalfa in southeast and 4.1 in southwest. Between 2 and 3 per square foot in remainder of State. (Ill. Ins. Rept.). IDAHO - Late-instar larvae continue common and occasionally abundant in alfalfa and clover in southwestern area. (Gittins). DELAWARE - Late-instar larvae fairly common in New Castle County. (MacCreary, Conrad). MISSOURI - Larval counts average 0.5 to 2 per crown of red clover and alfalfa over southeast quarter of State. From 10-15 percent of population showing evidence of a fungus disease. (Kyd, Thomas).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - IDAHO - Low numbers of overwintering adults noted in legumes in Boise Valley in early April. (Gittins). DELAWARE - Adults general in alfalfa. (MacCreary, Conrad).

SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - KANSAS - Causing more damage to second-year clover this year than for past 5 years. Damage to fields in north central and northeastern areas. (Gates). SOUTH DAKOTA - Adults causing considerable damage to sweetclover in Grant County. In some areas all plants show damage, some up to 50 percent defoliation. (Hantsbarger).

PEA APHID (*Macrosiphum pisi*) - OREGON - Populations unusually high in alfalfa fields of Gilliam and Umatilla Counties week of April 13. Counts per 10 sweeps averaged 45 in Gilliam and 38 in Umatilla. (Capizzi). NEBRASKA - Light on legumes in southeast counties and in Platte Valley. Counts average 10 per 100 sweeps. (Andersen). UTAH - Abundant and damaging in some Washington County alfalfa fields. (Knowlton). NEW MEXICO - Building up in alfalfa in southern area. (N. Mex. Coop. Rept.). TEXAS - Light in alfalfa in Delta County. (Hawkins). OKLAHOMA - Common in central, western and southwestern counties; 75-300 aphids per 10 sweeps in Grady and Kingfisher Counties. (Coppock, Goin). KANSAS - Populations increasing throughout southern part of State and active as far north as Marshall County, northeast area. No crop damage observed but counts as high as 1500 aphids per 25 sweeps at one place in Morris County, east central. Elsewhere counts of 14-75 per 25 sweeps in most fields of Geary, Morris and Wabaunsee, Pottawatomie, Riley and Marshall Counties. None observed in alfalfa fields in northwest counties. (Marvin). LOUISIANA - Fairly heavy on alfalfa in northern part. Averaging more than 1000 per 100 sweeps. (Spink). ARKANSAS - Up to 300 per 10 sweeps on legumes in northwest, central, southern and western areas. (Boyer, April 12). MISSOURI - Light populations on alfalfa throughout southern half of State with counts ranging from 2-15 aphids per sweep. About 5 percent adult population winged in extreme southeast area. (Kyd, Thomas). ILLINOIS - Maximum population 631 per 100 sweeps in southeastern area. Populations practically 0 in other areas. (Ill. Ins. Rept.) NORTH CAROLINA - Abundant on alfalfa, vetch and white clover in Mecklenburg County. (Young). VIRGINIA - No large populations observed. (Morris). NEW JERSEY - Few present. (Ins.-Dis. Newsl.). MARYLAND - Generally light in most areas. (U. Md., Ent. Dept.).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - ILLINOIS - Two adults observed in clover and alfalfa in southern area. (Ill. Ins. Rept.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ALABAMA - Light in some counties on crimson clover. (Grimes).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - IDAHO - Adults active in legumes in southern area; common in some areas. (Gittins). MARYLAND - One per ten sweeps in alfalfa in Calvert County. (U. Md., Ent. Dept.). DELAWARE - Adults general in alfalfa. (MacCreary, Conrad).

BRISTLY CUTWORM (*Lacinipolia renigera*) - ILLINOIS - Average .6 per square foot in southeastern clover and alfalfa. Lighter elsewhere. (Ill. Ins. Rept.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - KANSAS - In few alfalfa fields in Riley and Marshall Counties, northeast (Matthew) and in Meade, Seward, Morton and Stanton Counties, southwest (Marvin).

LYGUS BUGS - ILLINOIS - *Lygus lineolaris* adults in clover and alfalfa averaged 10 per 100 sweeps in east southeast and 8 per 100 sweeps in southwest. (Ill. Ins. Rept.). NEW MEXICO - From 15-20 *Lygus* spp. per 100 sweeps near Shiprock, San Juan County. (N. Mex. Coop. Rept.). IDAHO - *Lygus* spp. numerous in legumes in southwestern area. High adult populations, often over two per sweep, in fields with growth over 6 inches. (Gittins). OKLAHOMA - From 0-12 per 10 sweeps in alfalfa. (Coppock, Goin). DELAWARE - A few *L. lineolaris* adults in some areas. (MacCreary, Conrad). UTAH - Active in alfalfa fields but not numerous. (Knowlton). KANSAS - *L. lineolaris* is more abundant in alfalfa this year than for several years. Infestations general throughout State with counts of 4-36 per 25 sweeps. (Marvin). NEBRASKA - Populations in southeast and Platte Valley average 6 per 100 sweeps. (McKnight, Andersen).

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - OHIO - First hatch observed at Columbus on April 14 and at Wooster, April 15. Nymphs numerous and infestations expected to be heavy. (Treece).

SPITTLEBUGS - PENNSYLVANIA - Hatching on legumes in southeast area. (Menusan).

STINK BUGS - ALABAMA - *Acrosternum hilare* light in Barbour, Henry, Houston and Geneva Counties. A few specimens of *Euschistus servus* in southeast area. (Grimes).

GREEN CLOVERWORM (*Plathypena scabra*) - NEBRASKA - Very light in counties along Missouri River in eastern area. Counts average 1 per 10 sweeps. (Andersen).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - DELAWARE - In alfalfa fields in Kent and Sussex Counties. (MacCreary, Conrad).

WIREWORMS - NORTH DAKOTA - Heavy damage in a field of spring wheat in Cass County. (N. D. Ins. Rept.).

FRUIT INSECTS

APPLE APHID (*Aphis pomi*) - WASHINGTON - Eggs hatching April 16 on apple at Pullman; 1-7 days earlier than previous seasons. (Johansen). INDIANA - Readily feeding on apple buds in Vincennes area. (Hamilton). ILLINOIS - Growing rapidly in Carbondale area; should be checked in orchards where dormant spray not applied. (Meyer). VIRGINIA - Began hatching in central area on April 3. *Anuraphis roseus* started hatching few days later. All have hatched now. (Bobb). PENNSYLVANIA - Hatching in southeast area. (Menusan).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - OHIO - Began hatching April 3. Very abundant now on opening buds. (Cutright). VIRGINIA - Fairly common in Staunton area. (Woodside). PENNSYLVANIA - Hatching in southeast area. (Menusan).

APPLE MEALYBUG (*Phenacoccus aceris*) - OREGON - First egg laying in Gervais area on April 14 in filbert orchards. (Jones).

CATFACING INSECTS - INDIANA - *Lygus lineolaris* adults active in peach orchards. Heavy populations in two of four orchards April 14 in Vincennes area. Control will be needed during bloom. Occasional stink bug found on peaches in same area. (Hamilton). ILLINOIS - *L. lineolaris* very active on peaches. Stink bugs found only occasionally in Carbondale area. (Meyer). VIRGINIA - Considerable numbers of *L. lineolaris* on peach trees in central area. (Bobb).

CLOVER MITE (*Bryobia praetiosa* complex) - NEW MEXICO - Eggs hatching in apple orchards in San Juan, Rio Arriba and Taos Counties. Larvae very abundant in some fields in Dona Ana County. (N. Mex. Coop. Rept.). IDAHO - Becoming exceeding abundant over State. Migrating in some areas into homes and on host plants. (T.F.F.S., Gittins). UTAH - Common in some Washington County orchards. (Knowlton). COLORADO - Began hatching in peach orchards April 9. Heavy numbers overwintering eggs noted in some orchards in Mesa County. (Exp. Sta.). WASHINGTON - *Bryobia* sp. eggs hatching April 8-10 at Pullman; 8-12 days earlier than previous seasons. (Johansen).

A MITE (*Eriophyes insidiosus*) - COLORADO - This vector of peach mosaic not found in surveys up to April 9 in Mesa County. (Exp. Sta.).

EUROPEAN RED MITE (*Panonychus ulmi*) - OHIO - Eggs generally abundant in orchards. (Cutright). INDIANA - Not hatching at Vincennes. (Hamilton). ILLINOIS - Not hatching in Carbondale area. (Meyer).

GREEN PEACH APHID (*Myzus persicae*) - UTAH - Severely curling leaves on peach trees in Washington County. (Knowlton). COLORADO - Observed hatching in Mesa County on March 15. (Exp. Sta.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Trapping in citrus area negative. CALIFORNIA - Trap inspections negative. (PPC, West. Reg., Mar. Rept.).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - LOUISIANA - Adults emerging in Ruston and Homer areas. (Spink). VIRGINIA - Pupating, none emerged to April 18. (Bobb).

PEACH TREE BORER (*Sanninoidea exitiosa*) - ALABAMA - Larvae abundant in home peach orchards in Coffee and Covington Counties. (Grimes).

PEAR PSYLLA (*Psylla pyricola*) - CALIFORNIA - Light on pear trees at Lincoln, Placer County. (Cal. Coop. Rept.).

PLUM CURCULIO (*Conotrachelus nenuphar*) - VIRGINIA - Occasional adult has emerged and entered peach orchards. (Bobb).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - DELAWARE - Adults and eggs in Kent County orchards, April 17. (MacCreary, Conrad). INDIANA - Adults active and laying eggs in Vincennes area (prior to April 14). (Hamilton). VIRGINIA - Adults near peak of emergence in Piedmont area apple orchards. Eggs numerous in some orchards. (Bobb).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - NEW MEXICO - Several heavy infestations on apple trees in San Juan and Rio Arriba Counties. (N. Mex. Coop. Rept.). COLORADO - In neglected orchards in Montezuma County. (Ext. Serv.).

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - VIRGINIA - Emerging in apple orchards in central area. (Bobb).

HALL SCALE (Nilotaspis halli) - CALIFORNIA - Final inspections were made in Chico sector during March. A post-fumigation inspection in summer will complete area, provided results are negative. All properties completed in March have been large almond trees in commercial orchards. (PPC, West. Reg., Mar. Rept.).

TRUCK CROP INSECTS

BEAN LEAF BEETLE (Cerotoma trifurcata) - GEORGIA - Light to moderate infestations on beans in Thomas, Mitchell, Colquitt and Brooks Counties. Light to moderate on beans in Tattnall County. (Johnson).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Light to moderate infestations on beans in Thomas, Mitchell, Colquitt and Brooks Counties; light on beans in Tattnall County. (Johnson).

PSYLLIDS - TEXAS - Few found on tomatoes in Dimmit County. (Harding, Turney). Damaging many fields of tomatoes in lower Rio Grande Valley. (Deer).

ARMYWORM (Pseudaletia unipuncta) - CALIFORNIA - Light on hops at Sheldon, Sacramento County. (Cal. Coop. Rept.).

SEED-CORN MAGGOT (Hylemya ciliocrura) - LOUISIANA - Infesting watermelon in Calhoun County. (Spink).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - UTAH - Seriously damaging strawberries and raspberries south of Ogden. (Knowlton).

STRAWBERRY WEEVIL (Anthonomus signatus) - MARYLAND - First collection of season on sweepings from beds at Pittsville. (U. Md., Ent. Dept.).

OMNIVOROUS LEAF TIER (Cnephasia longana) - CALIFORNIA - Medium damage to strawberries in Salinas-Monterey area of Monterey County. Occurring on California poppies and vetch in same area. First host record for vetch in California. (Cal. Coop. Rept.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - OREGON - Egg hatching on strawberries in Willamette Valley week of April 6. (Hanna, Capizzi).

VARIEGATED CUTWORM (Peridroma margaritosa) - NEW MEXICO - Adults numerous at lights, pupae abundant in grass sod at Las Cruces, Dona Ana County. Light and spotty larval infestations on onions in Dona Ana County. (N. Mex. Coop. Rept.).

DIAMONDBACK MOTH (Plutella maculipennis) - GEORGIA - Light to moderate larval infestations on cabbage in Colquitt County. Moderate infestations on cabbage and collards in Brooks County. (Johnson).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Light and spotty infestations on lettuce in Dona Ana County. (N. Mex. Coop. Rept.).

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Light to moderate infestations on cabbage in Colquitt and Brooks Counties. (Johnson).

GRASSHOPPERS - NEW MEXICO - Nymphs damaging chili near Las Cruces, Dona Ana County, about 5-15 per square yard. (N. Mex. Coop. Rept.).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - GEORGIA - Light infestations on tomatoes in Colquitt, Brooks, Mitchell, Thomas and Tattnall Counties. (Johnson).

CUTWORMS - GEORGIA - Light infestations on tomatoes in Thomas and Tattnall Counties. (Johnson).

FLEA BEETLES - GEORGIA - Light infestations on tomatoes in Thomas and Tattnall Counties. (Johnson).

HORNWORMS - TEXAS - Some control on tomatoes started in Mission area. (Deer).

GOLDEN NEMATODE (*Heterodera rostochiensis*) - NEW YORK - The fall, 1957, surveys revealed new infestations on 2 Nassau County and 4 Suffolk County fields, having a combined gross of 524 acres. All new infestations are within the area of general infestation. (PPC, East. Reg., Mar. Rept.). CALIFORNIA - Survey started in Siskiyou and Modoc Counties, March 25. Total of 626 soil samples collected at commercial and farm storage cellars, representing 7,256 acres, on 97 sites. IDAHO - Survey begun in State during March. State inspectors collected 192 samples. (PPC, West. Reg.).

TOBACCO INSECTS

A COLLEMBOLA (*Isotomurus palustris*) - NORTH CAROLINA - Abundant but no damage evident in tobacco plant bed in Bertie County. (Simmons, Wray).

GREEN JUNE BEETLE (*Cotinis nitida*) - MARYLAND - Grubs active in 2 tobacco plant beds in Charles County. (U. Md., Ent. Dept.).

GREEN PEACH APHID (*Myzus persicae*) - GEORGIA - Light infestations on plant beds in Colquitt, Thomas, Mitchell, Brooks, Cook, Berrien, Coffee and Tattnall Counties. Light on field tobacco in five counties. (Johnson).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - GEORGIA - Light infestations on tobacco plant beds in Thomas, Colquitt, Brooks, Cook, Coffee and Tattnall Counties. Light infestations on field tobacco in Thomas, Colquitt, Brooks, Mitchell, Coffee and Tattnall Counties. (Johnson).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - MARYLAND - Adults and larvae found on winter cress near tobacco plant beds at Barstow. (U. Md., Ent. Dept.).

COTTON INSECTS

Cotton Insects in Lower Rio Grande Valley, Texas: CUTWORMS causing some damage but have decreased because of growth of plants. Some treatment has been applied. SPIDER MITES and APHIDS are spreading slowly. FALSE CHINCH BUGS (*Nysius* sp.) have killed cotton in small areas of Willacy and Cameron Counties. (Deer).

BOLL WEEVIL (*Anthonomus grandis*) - ARKANSAS - Survival studies in McGehee areas of 878 weevils per acre survived. With 2412 weevils going into hibernation, this gives survival at 36.4 percent. (Lincoln, Moore; Apr. 12). MISSOURI - No live weevils recovered from trash samples nor emerged from hibernation cages to April 18. (Harrendorf, Thomas).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

- GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Spray area in State to include 379,200 acres in 1958. NEW JERSEY - Intensive scouting for egg clusters in trap sites where males caught during 1957. Results to date negative. WEST VIRGINIA - Arrangements are being made for six forest rangers to tend traps in Monongahela National Forest this season. (PPC, East. Reg., Mar. Rept.).
- EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WEST VIRGINIA - Larvae beginning to enter new buds on red pine in Hancock and Ohio Counties. (W. Va. Ins. Sur.).
- BROWN-TAIL MOTH (Nygmia phaeorrhoea) - NEW HAMPSHIRE - First finds of season reported during March. Five new webs found in town of Weare which is in 1957-1958 clean-up area. (PPC, East. Reg.).
- EASTERN TENT CATERPILLAR (Malacosoma americanum) - ARKANSAS - Becoming active week of March 29. (Warren). LOUISIANA - Defoliating trees in northern area. (Spink). KANSAS - Eggs hatching and larvae extremely numerous on wild plum trees in northeastern counties. (Gates). WEST VIRGINIA - Heavy infestations over State on black cherry. (W. Va. Ins. Sur.). MARYLAND - Tents appearing on wild cherry trees in Prince Georges County. (U. Md., Ent. Dept.). PENNSYLVANIA - Hatching on crabapple in Centre County. (Adams).
- JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Heavy infestation indicated by grub diggings in southwestern area; up to 17 grubs per square foot. (PPC, East. Reg., Mar. Rept.).
- NANTUCKET PINE MOTH (Rhyacionia frustrana) - MISSOURI - Pupation of overwintering larvae completed; 45-55 percent emergence occurred in extreme southeastern area. (Thomas, Kyd).
- SCALE INSECTS - ALABAMA - Toumeyella numismaticum fairly common on pine twigs, T. parvicorne fairly common on pine needles and infestations of Phenacaspis pinifoliae light to medium on young pines in Lee County. (Pearson, April 11). IDAHO - Severe infestation of Diaspis carueli on juniper at Nampa. (Bechtolt). OKLAHOMA - Holly trees heavily infested with Fiorinia fioriniae in Tulsa City. (Stiles). ARKANSAS - A Lecanium scale attacking pin oak in Columbia County. (Boyer). UTAH - Seriously damaging many elm trees in Salt Lake and Weber Counties. (Knowlton, Fronk). PENNSYLVANIA - Phenacaspis pinifoliae heavily infesting about 10 percent of Scotch pine plantation in Indiana County, April 9. (Udine).
- A SPRUCE NEEDLE MINER (Epinotia nanana) - PENNSYLVANIA - Overwintered larvae on partially defoliated spruce in Huntingdon County. (Drooz, April 11).
- A SAWFLY (Neodiprion taedae) - ARKANSAS - Hatching week ending March 29. (Warren).
- A FALSE SPIDER MITE (Brevipalpus cardinalis) - CALIFORNIA - Medium infestation on ash trees in Lake Yosemite Park, Merced County. (Cal. Coop. Rept.).
- MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - UTAH - Above normal abundance in north and central areas. (Knowlton).
- A PITCH MIDGE (Prob. Retinodiplosis sp.) - WASHINGTON - Larvae of species near R. inopsis causing severe damage to shelter belt of 20-year-old ponderosa pines, 2.5 miles east of Colfax. (Harwood).
- A FLEA BEETLE (Altica sp.) - IDAHO - Abundant on willows in Moscow Mountain area. (Clark).
- A MEMBRACID - WEST VIRGINIA - Moderate infestation of dogwood terminals in Pleasant County. (W. Va. Ins. Sur.),

EUROPEAN FRUIT LECANIUM (*Lecanium corni*) - WEST VIRGINIA - Moderate infestation on yellow poplar in Randolph County. (W. Va. Ins. Surv.).

CALICO SCALE (*Lecanium cerasorum*) - OREGON - Heavily infesting flowering ornamentals in Salem area. Males emerged week of April 13. (Larson).

BOXWOOD PSYLLA (*Psylla buxi*) - OREGON - Adults emerging in infested areas around Salem week of April 13. (Capizzi).

APHIDS - CALIFORNIA - *Prociphilus fraxinifolii* and *P. venafuscus* populations building up in shade trees in areas of Yuba and Sutter Counties. (Cal. Coop. Rept.). OREGON - *Cinara* sp. causing serious damage to conifers in Portland area, April 11. (Nicolaison). ARKANSAS - Pine bark aphids infesting young pines in Columbia County. (Boyer, Apr. 12). UTAH - Numerous and damaging to rose foliage at St. George and Santa Clara. *Periphyllus negundinis* extremely numerous in area of Washington County. (Knowlton). PENNSYLVANIA - Heavy infestation of white pine (including twigs) by *Pineus strobi* in Centre County. (Adams, Apr. 1).

BOXWOOD LEAF MINER (*Monarthropalpus buxi*) - VIRGINIA - Severe on boxwoods in Franklin; as many as 12 mines per leaf. Only 10 percent pupation to April 18. (Boush).

INSECTS AFFECTING MAN AND ANIMALS

AMERICAN DOG TICK (*Dermacentor variabilis*) - WISCONSIN - Observed in Grant County. (Wis. Ins. Surv.). DELAWARE - Adults taken April 18 at Newark. (MacCreary, Conrad). MARYLAND - Collected on boy at College Park. (U. Md. Ent. Dept.).

CATTLE GRUBS (*Hypoderma* spp.) - UTAH - Fairly common in herds in Millard County; most severe on young cattle. (Knowlton).

DEER FLIES - LOUISIANA - Active in northern area. (Spink).

HORN FLY (*Siphona irritans*) - LOUISIANA - Averaging 10-12 per animal in central area and 50 per animal in southwest area. (Spink).

LICE - NEW MEXICO - Light to moderate infestations on goats near Gallup, McKinley County. (N. Mex. Coop. Rept.).

MOSQUITOES - DELAWARE - Larvae of *Aedes cantator* and *A. sollicitans* collected in salt marshes in Sussex County (Darsie) and *A. canadensis* larvae collected April 10 at Newark. (MacCreary, Conrad). NORTH CAROLINA - Larvae of *A. sollicitans* collected past two weeks in Brunswick, New Hanover, Onslow and Pender Counties. (Ashton, Apr. 18). MARYLAND - *A. canadensis* larvae in standing water at College Park. (U. Md. Ent. Dept.). UTAH - Larvae, largely *A. dorsalis* and *A. nigromaculus*, common in untreated areas of Weber County; adults scarce in Weber County where treatment applied. (Fronk, Knowlton). COLORADO - Surveys in storm sewers the last week of March indicated population of *Culex pipiens* and *C. restuans* predominating with limited number of *Culiseta inornata* present. Light trap collection of April 8 indicates adults of *C. pipiens* and *C. inornata* beginning activity. (Exp. Sta.)

SHEEP KED (*Melophagus ovinus*) - UTAH - Numerous on recently sheared ewes and on lambs on herds near Cedar City and Enterprise where control was not applied. (Knowlton).

SAND FLIES (*Culicoides* spp.) - LOUISIANA - Abundant in northern area. (Spink).

SCREW-WORM (*Callitroga hominivorax*) - FLORIDA - Two infestations reported in Manatee County. (Fla. Ins. Surv.).

SHEEP PARASITES - OKLAHOMA - No external parasites found on sheep inspected in Ottawa, Adair, McIntosh, Choctaw, Grady, Carter, Washita, Dewey and Alfalfa Counties. (Flora).

SHEEP SCAB MITES - IOWA - Continue to cause trouble in State. As of March 25, 56 flocks infested in 1958. (Iowa Ins. Inf.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (*Trogoderma granarium*) - Surveys were conducted on 40 grain establishments in NEW JERSEY, 9 establishments in VIRGINIA, 12 properties in WEST VIRGINIA, and in the Scranton District of PENNSYLVANIA. All determinations received to end of March on specimens submitted were negative. (PPC, East. Reg., Mar. Rept.). Four infestations found during March in ARIZONA and 2 in CALIFORNIA; all in previously infested counties. Inspections continued during month in eastern WASHINGTON and in Malheur County, OREGON. (PPC, West. Reg., Mar. Rept.).

STORED GRAIN PESTS - ALABAMA - Angoumois grain moth, dark mealworm, yellow mealworm and meal moth causing severe damage to bins in Lee County. Saw-toothed grain beetle, Indian-meal moth and cadelle found in light numbers in Lee County. (Guyton).

BENEFICIAL INSECTS

ALKALI BEE (*Nomia melanderi*) - WASHINGTON - Unusually heavy populations of field mice caused heavy damage to bee sites in Walla Walla, Benton and Yakima Counties during February, March and April. Some bee sites show as high as 80 percent reduction of larvae where vegetation not cleared. Bare sites or bare sites in weedy areas not damaged. (Frick).

A BIG-EYED BUG (*Geocoris punctipes*) - ALABAMA - Large numbers in crimson clover in Geneva, Covington and Coffee Counties; only one taken from sweepings in Lee County. (Grimes, Guyton).

BRACONID PARASITES - ALABAMA - Numerous in wheat fields in Autauga County. (Rawson).

LADY BEETLES - IDAHO - First large-scale migration observed in Moscow area on April 13. (Manis). OKLAHOMA - Present in most fields. (Coppock, Goin). UTAH - Active in orchards and alfalfa fields. (Knowlton).

DAMSEL BUGS (*Nabis* spp.) - NEW MEXICO - Present most alfalfa fields in southern area. Averaged about 7 adults and 2 nymphs per 10 sweeps one field near Socorro, Socorro County. (N. Mex. Coop. Rept.). OKLAHOMA - Present in all fields surveyed. (Coppock, Goin).

LACEWINGS - OKLAHOMA - Larvae averaged 3-5 per 10 sweeps in Kiowa County alfalfa. (Coppock, Goin).

SYRPHIDS - NEW MEXICO - Feeding on aphids in infested fields in Dona Ana County. (N. Mex. Coop. Rept.).

MISCELLANEOUS INSECTS

CARPET BEETLES - NORTH DAKOTA - Infestations in homes continue to be reported from many areas. (N. D. Ins. Rept.). IDAHO - Infesting homes some places. (Manis)

NOCTURNAL MOTHS - WISCONSIN - Not as much of a problem to maple sap producers as in 1957. (Wis. Ins. Surv.).

BOXELDER BUG (*Leptocoris trivittatus*) - UTAH - Conspicuous about homes in towns. (Knowlton). CONNECTICUT - Very heavy infestation at South Windsor. Grouped on buildings, on tree trunks and cover under trees. Only third location where pest has been found in State. (Johnson).

CLOVER MITE (*Bryobia praetiosa* complex) - OKLAHOMA - Appearing in homes in Tulsa County. (Bieberdorf). WISCONSIN - Annoying in Brown County and several other localities. (Wis. Ins. Surv.). DELAWARE - Numerous reports from New Castle County on mites invading houses, mostly in new developments. (MacCreary, Conrad). UTAH - Invading homes in number of locations. (Knowlton).

ORIENTAL COCKROACH (*Blatta orientalis*) - VIRGINIA - Infestations heavy in homes in Richmond and Culpeper. (Rowell).

PAINTED-LADY (*Vanessa cardui*) - CALIFORNIA - Heavy flights of butterflies in Sacramento, Sutter and Yolo Counties. (Cal. Coop. Rept.). UTAH - Migrations have begun; noted as far north as Box Elder, Salt Lake and Utah Counties. (Knowlton).

TERMITES - DELAWARE - Numerous swarms of *Reticulitermis flavipes* in New Castle County; emerging from homes. (MacCreary, Conrad). IOWA - Have been swarming for two months. (Iowa Ins. Inf., Apr. 9). MARYLAND - Swarming in various areas of State. (U. Md., Ent. Dept.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - GEORGIA - Reported for the first time in Colquitt and Bryan Counties. (Johnson, Apr. 11).

CORRECTION: CEIR 8(16):298 - The last part of the sentence concerning a grasshopper should read, "with no evidence of damage."

ADDITIONAL NOTES

NEW YORK - First ROSY APPLE APHIDS found in Rockland and Orleans Counties on April 18, on April 17 in Ulster County, and April 15 in Columbia County. PEAR PSYLLA eggs noted in Orange County on April 14, and in Columbia County on April 7. TARNISHED PLANT BUGS on apples in Orange County. First RED-BANDED LEAF ROLLER adult observed on April 18 in Orange County. CLOVER MITES are troublesome in homes in Nassau County. Hatching of EASTERN TENT CATERPILLAR eggs on wild cherry began April 16 at Poughkeepsie; 2-inch webs evidenced by April 18. (N. Y. Wkly. Rept.).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Felt. subt.	Heliothis zea	Perid. marg.	Prod. ornith.	Protoparce quin.
ALABAMA							
Auburn 4/13-18	120	23		2		1	
ARKANSAS							
Hope 4/10	6	3		2	3		
Stuttgart 3/13-4/12	40	4			41		
FLORIDA							
Quincy 4/15	6	11	1		3		
Monticello 4/14	1		1	1			
Sanford 4/9		1	14	1			
ILLINOIS							
Urbana 4/11-17	18	4			3		
LOUISIANA							
Shreveport 4/10-17	159	29	1		49	1	
Baton Rouge 4/10-17	17	23	10	10	30		
Franklin 4/10-17	15	4	8	1	4	5	2
MISSISSIPPI							
*Stoneville 4/12-18	701	55		2	266	7	
MISSOURI							
Sikeston 4/7-16	68	4			89		
NEBRASKA							
North Platte 4/6-12		1					
SOUTH CAROLINA							
Clemson 4/12-18	29	3			5	13	
SOUTH DAKOTA							
Brookings 4/16					4		
TENNESSEE (Counties)							
Madison 4/8-14	53	1			12		
Maury	44	2			21	2	
Robertson	16	1			8	2	
Blount	15	5			3	7	
Johnson		6					
TEXAS							
Waco 4/12-18	457		50	4	131	6	

*Four traps

SOME OF THE MORE IMPORTANT INSECTS OF ECUADOR

By Harold R. Yust*

There are serious pests of potatoes in all parts of Ecuador and more were collected on them than on any one crop. The more important insects include a MIRID (Rhinaclia aricana), FLEA BEETLES (Epitrix sp.), a LEAFHOPPER (Paratanus yusti), POTATO APHID (Macrosiphum solanifolii), a POTATO TUBER WEEVIL (Premnotrypes vorax), a THRIPS (Frankliniella tuberosi), TWO-SPOTTED SPIDER MITE (Tetranychus telarius) and CUTWORMS (Noctuidae).

Citrus: Two main pests are the PURPLE SCALE (Lepidosaphes beckii) and CITRUS BLACKFLY (Aleurocanthus woglumi). Good control for the latter was obtained by an introduced parasitic wasp (Amitus hesperidum).

Deciduous Fruits: The most serious pests of apples are WOOLLY APPLE APHID (Eriosoma lanigerum), HORNED APHID (Lachnus salignus), a MITE (Oligonychus yothersi) and a SCOLYTID (Corthylus sp.). On pears, peaches and plums the most important are a FRUIT FLY (Anastrepha fraterculus), L. salignus, O. yothersi and several scales.

Avocado: Both diseases and insects occur on the trees. Among the chief insects are TREEHOPPERS (Metcalfiella pubescens and Metcalfiella sp. unknown). Other pests include a LEAFHOPPER (Empoasca stevensi), a SCOLYTID (Corthylus sp.) and a MITE (Oligonychus yothersi).

Cherimoyas: The two major pests are (Anastrepha fraterculus) and a LEAF MINER (Phyllocnistis sp.).

Bananas: The 3 chief caterpillars that defoliate the plants are Caligo sp., Opsiphanes tamarindi and Caerois gerdrudtus. BANANA ROOT BORER (Cosmopolites sordidus) is well established and widely distributed. It is reducing production more than most growers realize. The RED RUST THRIPS (Palleucothrips musae) found in Ecuador in 1956 is spreading and causing many fruit stems to be rejected. The species causes a red rust coloration on the fruit due to the feeding on immature fruit.

Coffee: In general, the major pest is a LEAF MINER (Leucoptera coffeella) which is prevalent throughout the country. During the dry season its injury is more noticeable. Another serious pest is the RUFOUS SCALE (Salenaspis articulatus).

Cacao: Probably the most important pest is the RED-BANDED THRIPS (Selenothrips rubrocinctus) which by feeding, destroys the value of the leaves by turning them brown. Several wood borers (Xyleborus confusus and Xyleborus sp.) are dangerous as they may kill trees. A MIRID (Garganus gracilentus) was collected at Quevedo but was not abundant. The BLACK CITRUS APHID (Toxoptera aurantii) attacks new fruits and shoots and at times causes serious damage.

Coconuts: At one time Ecuador had a flourishing coconut industry especially along the northern coast. These plantings have been nearly wiped out apparently due to a combination of beetles and disease. A WEEVIL (Rhyncophorus palmarum) is probably the chief pest but various SCOLYTIDS (Xyleborus confusus, Xyleborus spp.) are involved. Others include Rhina barbirostris, Metamasius sericeus, Limnobaris calandriiformis and Alurnus humeralis.

*Research Entomologist with the U. S. Operations Mission (ICA) to Ecuador, 1952 - 1955.

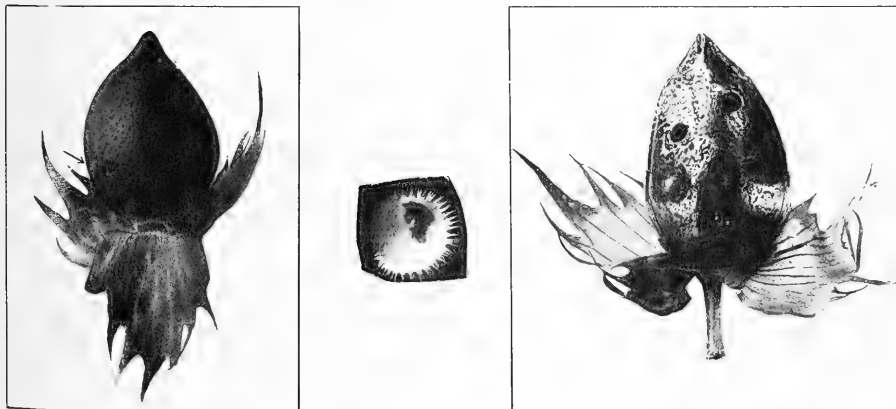
Cotton: A small amount of cotton is grown in Ecuador. Its main pest is the ECUADORIAN PINK BOLLWORM (Catarata lepisma), which until 1952 in that country, had been confused with Pectinophora gossypiella. The second pest of importance is a WEEVIL (Eutinobothrus gossypii) which girdles the stock at ground level. Other insects include a COTTON STAINER (Dysdercus collaris), a BUD WEEVIL (Anthonomus vestitus), a LEAFHOPPER (Dikrella gossypii), a THRIPS (Leucothrips theobromae) and a MITE (Tetranychus yusti).

Cattle: TORSALO or HUMAN BOT (Dermatobia hominis) has long been a serious pest of cattle in Ecuador. Established control measures in some areas have reduced populations to a point where the pest may no longer be troublesome.

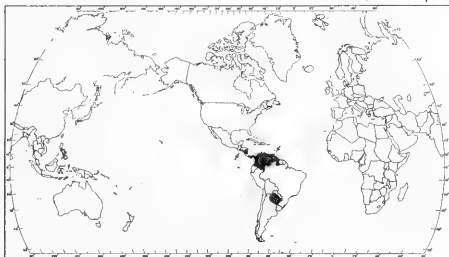
Stored Grain: A BEEBLE (Pagiocerus fiorii) attacks corn in the field and, in warm valleys, may destroy it in 3 months after storage. On the coast ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) is the primary pest of corn and stored rice. Control measures have reduced the percent of corn sold at harvest time from 75 in 1952 to 25 in 1955. Now corn prices are relatively stable and there is corn for a cattle and poultry feeding program.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES
 SOUTH AMERICAN BOLLWORM* (Sacadodes pyralis Dyar)

Economic Importance: This noctuid is considered to be one of the most important pests of cotton in South America. In Colombia it is considered the most injurious pest of cotton, with losses averaging about 20 percent annually. Sometimes whole crops are destroyed. Sacadodes pyralis caused serious damage to the cotton crop in Venezuela in 1952, and was reported as increasing in abundance in Nicaragua in 1953. As many as 500 eggs per 100 bolls have been recorded on late cotton in Venezuela, and as high as 60 to 70 percent of the bolls have been infested on isolated perennial plants in Trinidad. Perennial cotton is most severely infested, with the greatest damage coming during the dry season when the bolls are maturing. Larvae attack both squares and bolls, but bolls are most frequently attacked, the seeds being destroyed and the lint ruined. In Nicaragua it is required that all cotton plants be destroyed two weeks after harvest.



Bolls Showing Entrance and Exit Holes; Egg Enlarged 20 Times



General Distribution of South American Bollworm

*Also called Trinidad bollworm. (Noctuidae, Lepidoptera)

Distribution: Occurs in Trinidad, Colombia, Venezuela, British Guiana, Nicaragua, El Salvador and Panama. There are specimens from Paraguay in the U. S. National Museum and it was recorded in the literature from Argentina by Dyar in 1912.

Hosts: Attacks cultivated and wild cotton principally, though it has been recorded attacking several other hosts. Okra and roselle (*Hibiscus sabdariffa*) are recorded in Trinidad, and *Cienfugosia affinis* in Venezuela.

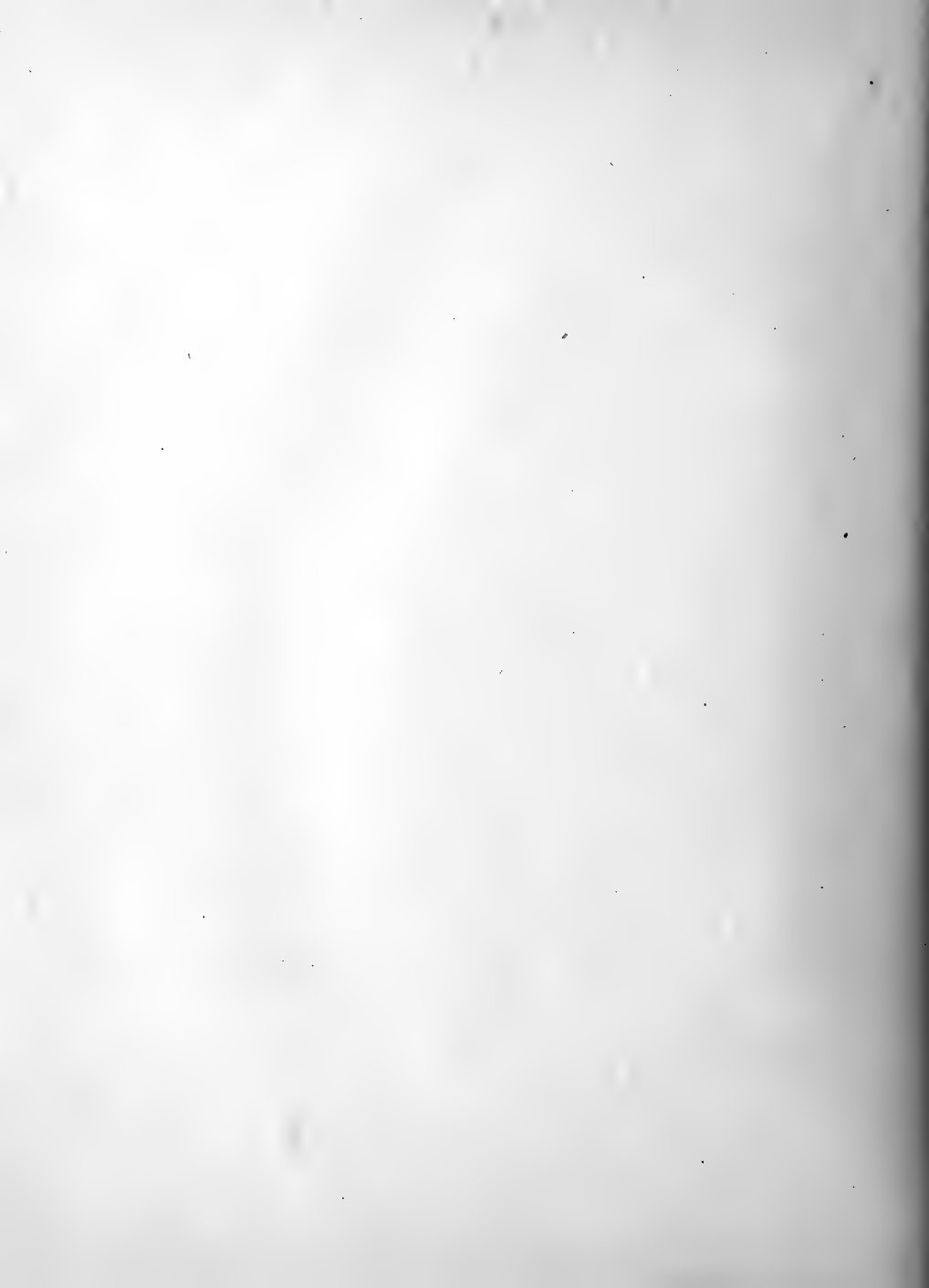
Life History and Habits: Females lay around 128 eggs during a 3 to 8 day period. The eggs are laid singly on leaves, bolls and stems. Larvae hatch in 4 to 6 days, migrate to a boll, enter and begin feeding. Larvae feeding on mature bolls complete their development there, but those hatching on leaves or stems may feed on several bolls or squares. Whether squares or bolls are attacked, the larva enters the basal portion and bores into the interior. Larvae mature in 13 to 18 days and migrate to the surface of the soil where pupation begins. Sometimes, however, pupation may take place in webs at the base of the bolls. Adults emerge in 20 to 25 days, unless diapause occurs. This may prolong emergence several months. Three generations develop annually in some areas of Venezuela. Larvae begin to appear towards the end of October in Trinidad, especially in dry weather, and increase until the end of March or April when they may be so abundant that two larvae sometime occur inside one boll. Probably due to a scarcity of bolls larvae are seldom found during the wet season in Trinidad.

Description: Adult female wing expanse is 30 mm. Forewing clayey to purplish brown, basal and subterminal spaces darker, olivaceous brown; a narrow dark discal mark; lines lighter, antemedial line usually angled below cell; post-medial line curved outwardly from costa to vein M_3 , then straight but oblique to inner margin; subterminal line slightly oblique, nearly straight (usually slightly curved or weakly sigmoid). Hindwing of male whitish or ochraceous; ochraceous, fusco-ferruginous or fuscous in the female, usually with a pair of vague parallel transverse fuscous lines in the distal half of the wing. Hindwing with vein 5 strong, from well below middle of discocellulars; retinaculum of male, broad, not bar-shaped. Males are usually pale ochreous or greenish-ochreous. The egg is almost spherical, 0.7 mm. in diameter, sky-blue when first laid. Shell with fine network sculpturing and bristled closely with small spines that are somewhat hooked. Mature larva 25 to 30 mm. long; head and dorsum of prothorax brown or yellowish-brown; ground color of body creamy-white, back with suffusion of crimson. Body with primary setae present and setae of moderate size; intersegmental incisures very distinct. Pupa 13 to 15 mm., color brown or yellow-brown; resembles many other noctuids. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(17)4-25-58



Adults and Larva of *Sacadodes pyralis*

Figures (except map) from Withycombe, C. L. 1927. Bul. Ent. Res. 17(3):265-272.







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MAY 2, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS (*Trimerotropis* spp.) abundant in Utah and Nevada. Initial hatch of *Aulocara elliotti* in Nebraska. (p. 335). Winter survival of EUROPEAN CORN BORER 70-75 percent in Pennsylvania. (p. 335).

FLEA BEETLES damaging corn in Oklahoma and Texas. (p. 335). No GREENBUG problem indicated for panhandle area of Texas. Infestations remain constant in Alabama, but reduced in southern and central Oklahoma. (p. 335).

CHINCH BUG moving into corn in Oklahoma, could become a problem in Cleveland County. (p. 336). Heavy infestation of ENGLISH GRAIN APHID indicated in north central Texas. (p. 336).

PEA APHID increasing in Maryland, Alabama and Oklahoma. (p. 338). SPITTLEBUGS abundant in Pennsylvania; hatching in Illinois. (p. 339).

SPOTTED ALFALFA APHID warrants control in southern New Mexico. Abundance of winged forms may indicate trouble further north later. (p. 339).

STINK BUGS increasing in southern fruit areas of Illinois and Indiana. (p. 340). RED-BANDED LEAF ROLLER expected to be serious in Virginia apple orchards during 1958. (p. 340).

Second Outlook statement on BEET LEAFHOPPER conditions. (p. 342). Serious infestations of *Myzus ascalonicus* on strawberries in Washington. (p. 344).

More live PINK BOLLWORM larvae than expected in four northeastern Texas counties. (p. 345).

Distribution of ASIATIC OAK WEEVIL. (p. 347).

New county records and extensions of IMPORTED FIRE ANT infestations. (p. 349).

CORRECTIONS (p. 350).

INSECTS not known to occur in the United States. (p. 355).

SUMMARY OF INSECT CONDITIONS - 1957 - INDIANA. (p. 351).

WEATHER OF THE WEEK ENDING APRIL 28

Numerous low pressure systems and several cold air intrusions were responsible for the greatest variety of weather conditions during any week of the spring season to-date. Frequent and widespread precipitation outside the Far Southwest sent streams out of their banks in several sections of the Nation. Late-season snows fell in the North and West. Many sections of the South were visited by thunderstorms, with damaging wind and hail and some by tornadoes. Temperatures fluctuated considerably, sometimes sharply. A good example occurred in Kansas where Sedan and Independence reported 91° on the 23d, the warmest day so far this spring in the eastern part of the State, and Goodland in the northwestern section of the State recorded a new record late-season low of 21° on the 24th.

The most extensive storm of the week crossed the Southwest on the 22d and 23d, with high winds whipping up dust in sections of the southwestern Great Plains as well as causing some crop and property damage. Cold air following in behind the storm as it moved northeastward reduced temperatures to freezing as far south as Utah, Colorado, and Kansas, and precipitation changed to snow. One of the heaviest snowstorms of record occurred in extreme south central Montana on the 23d and 24d when the storm dumped 55 inches on Red Lodge and 60 inches on Nye and Mouat Mine. Up to 3 feet of snow fell in the Big Horn Mountains of Wyoming, and glaze damaged power and communication lines in parts of the State. Salt Lake City, Utah, had its heaviest 24-hour April snowfall of record on the 23d when 15 inches were measured at the airport. An inch of snow fell at several stations in northwestern Kansas and 1 to 4 inches in northern Wisconsin.

Temperatures for the week averaged above normal in the Atlantic Coastal States, extreme southern areas, and along the southern California coast, with departures of 3° at San Diego, Calif., 6° at El Paso, Tex., 6° at New Orleans, La., 5° at Richmond, Va., and 9° at Caribou, Maine. The week was relatively cool elsewhere, averaging as much as 15° below normal at Sheridan, Wyo. (Summary supplied by U. S. Weather Bureau).

WEATHER BUREAU 30-DAY OUTLOOK

MAY 1958

The Weather Bureau's 30-day outlook for May calls for temperatures to average below seasonal normals over the northern half of the nation lying between the Rockies and the Appalachians. Above normal temperatures are indicated in West Coast, Gulf and South Atlantic States, as well as New England. In unspecified areas near normal temperatures are anticipated. Large week-to-week fluctuations are indicated over most areas. Precipitation is expected to equal or exceed seasonal normals over most of the nation except for subnormal amounts along the Pacific and Gulf Coasts and in the Northern Plains.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - NORTH DAKOTA - Survey in southeastern area of State show high percentage of eggs in coagulated stage of development. (N. D. Ins. Rpt.). ALABAMA - *Schistocerca americana* activity increasing in wheat fields, Autauga County. Infestations observed were light. (Grimes). KANSAS - No nymphs observed in any central, east central, southeast or south central counties. (Matthew, April 21-26). NEBRASKA - Initial hatch of *Aulocara elliotti* has occurred in southern areas. Egg development retarded by weather conditions. (Andersen). UTAH - Winged forms, largely *Trimerotropis* spp., unusually abundant for so early in season in Washington, Kane and parts of Iron Counties. (Knowlton). NEVADA - Heavy populations of *Trimerotropis pallidipennis* invaded Las Vegas area, Clark County. (Bechtel).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NORTH CAROLINA - Average 5 larvae and 6 pupae per 50 stalks in Weeksville area, Pasquotank County. Nearly 100 percent of stalks infested in fall of 1957 in area of heavy potato production. (Farrier). PENNSYLVANIA - Spring survey shows 70-75 percent survival in corn state-wide. (Sleesman).

MORMON CRICKET (*Anabrus simplex*) - NEVADA - Second-instar nymphs in Rabbithole and Seven Troughs area, Pershing County. (Bechtel).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - MISSOURI - Mortality of overwintering larvae very high in all infested southwestern counties with only 4 live larvae found in 250 girdled stalks examined. (Kyd, Thomas).

FLEA BEETLES - OKLAHOMA - *Chaetocnema denticulata* causing extensive damage to corn in 14 counties. Populations on corn seedlings in low-lying soil commonly exceed 10 per plant, numbers lighter in upland soils. (Flora, Coppock, Vick). TEXAS - Scattered reports of small corn being killed by attack of a flea beetle. (Turney). Severe damage to corn in Hunt County. (Hawkins). *C. pulicaria* damaging corn in north central area with as many as 8 beetles taken from seedling plants. (Chada). ILLINOIS - *C. pulicaria* averaged 22 per 100 sweeps in bluegrass in eastern section and 0 in northeast. (Ill. Ins. Rpt.).

A BILLBUG - GEORGIA - Moderate to heavy on corn in Lowndes, Grady and Laurens Counties. (Johnson, George, Shurling).

Small Grain Insect Survey, Texas: During survey conducted in 12 high plains counties GREENBUG was found in Deaf Smith and Castro Counties but numbers considerably less than in February, averaging 10 per linear foot in Castro County. Predators were easily found and increasing. There should be little or no problem in the panhandle area this season. BROWN WHEAT MITE was negative. An occasional ARMY CURWORM was found throughout the survey. (Daniels).

GREENBUG (*Toxoptera graminum*) - ALABAMA - Infestations remain constant (10-20 per 10 sweeps) in most areas. (Grimes). KANSAS - No infestations found in any barley and wheat fields surveyed in central, south central, east central and southeastern areas of State. (Matthew). OKLAHOMA - Scattered infestations damaging many fields of volunteer oats throughout central and south central areas, with little spread. Damage to wheat generally very light in all sections. Numbers considerably reduced in central and southern areas. (Coppock). Average 50-150 per linear foot in Blaine County barley and wheat, higher at margins. (Owens). UTAH - Few on barley at St. George, Washington County. (Knowlton). TEXAS - Scattered spot infestations in some fields in Collin and Hunt Counties have been maintained by cool, wet weather. (Chada).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Heavy widely scattered populations in small grains throughout State. (Coppock, Vick). TEXAS - Populations greatly reduced in most north central area fields. (Chada).

ARMYWORM (Pseudaletia unipuncta) - LOUISIANA - Six to 13 per 100 sweeps on oats and other grasses Tensas Parish. Predominantly second-instar larvae. (Spink). MISSISSIPPI - Small larvae average 1-5 per square foot in oat fields, Leflore County. (Burton). TEXAS - Six per square foot in heavy growth of oats and vetch in Kaufman County. (Hawkins).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Averaged 1-4 per plant in one field, Baca County. (Exp. Sta.)

CHINCH BUG (Blissus leucopterus) - KANSAS - Counts averaged 2 per 25 sweeps in barley fields in Sedgwick, Harper and Kingman Counties. Few found in Marshall County indicating break in hibernation. (Matthew). OKLAHOMA - Have moved into young corn in central and south central counties. Could become serious in Cleveland County where several fields averaged 3-5 adults per plant. Lighter counts in other central and south central counties. (Coppock, Vick).

CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Moderately numerous in Washington County barley fields. (Knowlton). TEXAS - Heavy in barley with damage in several fields in north central area. (Chada).

ENGLISH GRAIN APHID (Macrosiphum granarium) - KANSAS - Counts 1-7 per 25 sweeps nearly all wheat and barley fields in central, east central, southeastern and south central counties. (Matthew). MISSOURI - Common most small grain fields southwestern area. Counts 1-12 per linear foot. Few rye fields averaged 120 to 175 in Jasper County. (Kyd, Thomas). OKLAHOMA - Generally light in small grain, central and south central counties, up to 700 per linear foot in western areas. (Coppock, Vick, Hatfield). TEXAS - Rapidly building up in wheat fields in north central area. Heavy head infestation indicated. (Chada).

WIREWORMS - IDAHO - Infestation of Ctenicera pruinina reported from a dryland grain field near Idaho Falls, Bonneville County, on April 18 was severe enough to warrant controls prior to seeding with potatoes. (Portman). SOUTH DAKOTA - Infestations of Limonius sp. in spring wheat in several north central and northeast counties averaged approximately 1 larva per linear foot of row. (Hantsbarger).

A WHEAT STEM MAGGOT (Hylemya cerealis) - COLORADO - Averaged 1-3 per wheat crown with 1 crown in 15 infested, Adams County. (Colo. Ins. Det. Comm.).

WHITE GRUBS - NEW MEXICO - Heavy infestations in lawns at Las Cruces, Dona Ana County. (N. Mex. Coop. Rpt.).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Egg masses averaged 4 per 100 plants in Terrebonne, St. Charles and Assumption Parishes and first-instar larvae were present in the last two parishes. First evidence of Trichogramma parasitism reported in Assumption Parish. (Hensley, Spink).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - IDAHO - Light larval infestations in alfalfa fields in Aberdeen area, Bingham County. (Bishop). DELAWARE - Full-grown larvae on alfalfa, Kent County. (MacCreary, Conrad).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Adults averaged 5-10 per 10 sweeps on alfalfa, Queen Annes and St. Marys Counties. Larval damage conspicuous in eastern and southern sections. (U. Md., Ent. Dept.). NORTH CAROLINA - New counties found infested are Buncombe, Haywood, Henderson and Polk. Feeding on vetch in Carteret County and average 80-100 larvae per 100 sweeps in Rowan County. Nearly destroyed untreated field in Harnett County. Treatments successful where used. (Jones, Farrier). DELAWARE - Two to 5 adults per

10 sweeps. Third-instar larvae in Sussex County. (MacCreary, Conrad). VIRGINIA - Damage to alfalfa varies considerably over most of the State. Indications adult emergence has reached peak in Rappahannock, Culpepper, Fairfax, Page and Rockingham Counties. (Morris). Larvae general in Stafford County, some infestations severe. (Beck). WEST VIRGINIA - Young larvae in alfalfa tips, Jefferson and Berkeley Counties. (W. Va. Ins. Sur.). PENNSYLVANIA All stages abundant in alfalfa in south central area. (Pepper). Larvae feeding on plant tops, Bedford County. (Udine). NEW JERSEY - Adults active in alfalfa fields. Few larvae in southern areas, very little feeding generally. (Ins.-Dis. Newsl.). MASSACHUSETTS - Larvae collected on alfalfa, Hampden County. (Lavigne). NEBRASKA - Active most alfalfa fields, Scottsbluff area, Scotts Bluff County. (Hagen). UTAH - Larvae in Washington County alfalfa, no damage evident. (Knowlton). IDAHO - Adults active in several fields in Aberdeen area of Bingham County. Populations averaged 4 per crown in 1 field to less in other fields examined. Adults mating April 16. (Bishop). Averaged 2 per 10 sweeps in untreated alfalfa in Notus area, Canyon County. (Waters). COLORADO - Non-economic in Otero, Larimer, Weld and Adams Counties. (Exp. Sta.).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - KANSAS - Serious injury to alfalfa locally in Rawlins County. (Matthew). NEBRASKA - Severely damaged new seeding of alfalfa in wheat, Lincoln County, with 6-8 larvae per square foot. Counts in alfalfa ranged 0.4-2.7 per square foot in Scottsbluff area, Scotts Bluff County, and 6-12, Dawes and Sheridan Counties. (Pruess, Hagen, Andersen). UTAH - Infestations well below average in alfalfa fields. (Knowlton).

A CLOVER HEAD WEEVIL (*Hypera meles*) - GEORGIA - Averaging 10 per 100 sweeps on Tift County crimson clover. (Johnson).

CLOVER LEAF WEEVIL (*Hypera punctata*) - IDAHO - Larvae caused severe leaf damage to red clover in Kendrick area, Latah County. (Portman). KANSAS - Non-economic to light infestations of 3 larvae per crown in alfalfa in one east central, 3 southeast, 6 south central and 8 central counties. (Matthew). NEBRASKA - Averages 15 larvae and 7 adults per 100 sweeps in alfalfa in eastern third of State. (Andersen). VIRGINIA - Larvae widespread but light. (Morris). PENNSYLVANIA - All larval stages feeding on alfalfa and clover in south central areas. (Pepper). ILLINOIS - Larvae averaged 3 per square foot in clover and alfalfa in northeastern section and 2.6 in eastern section. Populations throughout State lower than for several years. Disease present but not reducing populations. (Ill. Ins. Rpt.). MASSACHUSETTS - First and second instars on crown leaves of alfalfa, Hampden County. (Lavigne). ALABAMA - Heavy infestations in 7 central counties; 0-6 larvae and 2-5 adults per sweep. (Grimes, S.Hays).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - IDAHO - Adults active in all red clover fields examined in Latah County. Larval injury to roots evident on most plants examined. (Portman). Adults averaged 1 per 2 sweeps in red clover fields at Notus, Canyon County. (Waters). MASSACHUSETTS - Egg-laying in progress, some feeding damage evident, Hampden County. (Lavigne).

COWPEA APHID (*Aphis medicaginis*) - NEW MEXICO - Moderate on alfalfa at Ft. Sumner, De Baca County. (N. Mex. Coop. Rpt.).

CUTWORMS - IDAHO - Common in alfalfa at Aberdeen, Bingham County. (Bishop). SOUTH DAKOTA - Light infestations of *Agrotis* sp. in alfalfa in Brookings and Clark Counties; 1-4 larvae per square yard. (Hantsbarger). NEW MEXICO - Moderate in alfalfa fields near Hagerman and Dexter, Chaves County. (N. Mex. Coop. Rpt.). COLORADO - *Agrotis orthogonia* averaged 2 per linear foot in 1 wheat field in Baca County. (Exp. Sta.). ILLINOIS - Averaged 5 and 4 per 100 sweeps respectively in northeastern and eastern sections on bluegrass. (Ill. Ins. Rpt.).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - MARYLAND - Adults averaged 7 per 10 sweeps on red clover at Centreville, Queen Annes County. (U. Md., Ent. Dept.). ALABAMA - Light infestations in 7 central counties. (Grimes, S. Hays). VIRGINIA - Larval numbers very light in alfalfa fields, Giles, Bland and Tazewell Counties. (Morris).

LYGUS BUGS (*Lygus* spp.) - IDAHO - Averaged 1 per 2 sweeps in alfalfa and red clover throughout northern Canyon County. (Waters). COLORADO - Averaged 2 per 100 sweeps on alfalfa, Mesa County. Averaged 9 per 100 sweeps in Delta County. (Exp. Sta.). NEW MEXICO - Very abundant in some alfalfa fields, Dona Ana and Sierra Counties, with 1 field near Arrey, Sierra County, Averaging 1 adult and 2 nymphs per sweep. (N. Mex. Coop. Rpt.). UTAH - Above normal populations of *L. elisus* and *L. hesperus* in alfalfa and mustards wherever examined. (Knowlton). KANSAS - In few alfalfa fields in Sumner and Harper Counties. (Matthew). NEBRASKA - *L. lineolaris* continues to build up in eastern third of State, 22 per 100 sweeps in alfalfa. (Andersen). MISSOURI - *L. lineolaris* adults average 0.4-1 per sweep in alfalfa in southwest area. (Kyd, Thomas). PENNSYLVANIA - *L. lineolaris* abundant in legume hay in south central area of State. (Pepper). MASSACHUSETTS - *L. lineolaris* averaged 5 adults per 100 sweeps, Hampden County. (Lavigne).

PEA APHID (*Macrosiphum pisi*) - MARYLAND - Numbers increasing in most sections, with no serious infestations noted. (U. Md., Ent. Dept.). NORTH CAROLINA - Averaged 100-150 per 100 sweeps on alfalfa in Rowan County. (Farrier). ALABAMA - Infestations increasing from medium to heavy in central areas, with counts ranging 50-500 per 10 sweeps. (Grimes, S. Hays). VIRGINIA - Present in all alfalfa fields surveyed. (Morris). TENNESSEE - Heavy infestations on alfalfa. Fungus killing many. (Mullett). ILLINOIS - Averaged 104 in northeastern section and 33 in eastern section per 100 sweeps in clover and alfalfa. (Ill. Ins. Rpt.). TEXAS - Light in vetch, Kaufman County. (Hawkins). Averaged 200 per 10 sweeps in one alfalfa field and about 10 per 10 sweeps in another field. (Turney). OKLAHOMA - Steadily increasing throughout State, most central and southern alfalfa fields averaging 100-300 per 10 sweeps. Very heavy infestation noted on vetch in McClain County, with 1 field averaging thousands per 10 sweeps. (Coppock, Vick). Heavy infestations in Jackson County (Hatfield) and marked increase in Stillwater area, Payne County (Bieberdorf). MISSOURI - Counts considerably within State, averaging 5-7 per sweep in central third of State and 9-112 per sweep in extreme southwestern counties. Fungus disease becoming common in most fields. (Kyd, Thomas). NEBRASKA - Averages 20 per 100 sweeps in alfalfa and sweetclover in eastern third of State. (Andersen). KANSAS - Non-economic to light in 3 southeast, 6 south central and 8 central counties, counts generally 5-600 per 25 sweeps with 100 per sweep in some fields in southern counties. Parasites and predators at low levels. (Matthew). WISCONSIN - First specimen found in alfalfa in Dodge County. (Wis. Coop Sur.). UTAH - Abundant to threatening in many Washington County fields, severe in Kane County. (Knowlton). COLORADO - Average 4 per 100 sweeps at Austin, Delta County. (Exp. Sta.). NEW MEXICO - Light to moderate in alfalfa in southern counties. Populations building up rapidly. (N. Mex. Coop. Rpt.). NEVADA - Populations abnormally heavy on alfalfa in Clark and southern Nye Counties, with 74 acres of alfalfa sprayed in Pahrump Valley. (Zoller).

POTATO LEAFHOPPER (*Empoasca fabae*) - KANSAS - None found in alfalfa fields surveyed in 1 east central, 3 southeast, 5 south central and 8 central counties. (Matthew).

SPITTLEBUGS (*Philænus* spp.) - PENNSYLVANIA - Well hatched, very abundant in legume hay, south central area, well up on clover and alfalfa, spraying begun, southwestern areas. (Udine). TENNESSEE - Present at higher altitudes in eastern part of State on alfalfa and clover. (Mullett). MARYLAND - Small nymphs of *P. leucophthalmus* in light numbers in red clover at Centreville, Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Newly hatched

P. leucophthalmus nymphs on clover, southern New Castle County. (MacCreary, Conrad). ILLINOIS - Nymphs of P. leucophthalmus emerging throughout State, averaging 11 per 100 stems in clover and alfalfa in northeast, and 16 in eastern sections. (Ill. Ins. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Averaged 1-2 per 25 sweeps in few alfalfa fields, Sumner and Harper Counties, and along roadside embankments in localized areas, Kingman and Pratt Counties. Aphids recovered from plants along roadside embankments in southern Pottawatomie County. (Simpson). Collected from alfalfa along roadside embankments at single locations in Cowley and Elk Counties. (Martinez, Smart). Averaged 1 per 10 sweeps on alfalfa in few fields, Barber County. (Marvin). MISSOURI - None found in any area of State. (Kyd, Thomas). OKLAHOMA - Numbers remain light in central and south central fields with none found in most fields. (Coppock, Vick). No increase in Stillwater area, Payne County. (Bieberdorf). UTAH - Present but scarce in Washington, Kane and western Millard Counties. (Knowlton). NEVADA - Populations remain low in southern areas. (Zoller). NEW MEXICO - Severe enough to warrant control in alfalfa fields, Dona Ana and Eddy Counties. Winged forms very numerous. (N. Mex. Coop. Rpt.). COLORADO - None found in Baca, Prowers, Bent, Otero, Crowley and Pueblo Counties. (Exp. Sta.).

SPOTTED CUCUMBER BEETLE (Diabrotica sp.) - KANSAS - Averaged 3 per 100 sweeps in alfalfa, Sumner and Harper Counties. (Matthew).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NEBRASKA - Populations heavy in eastern portions of State, 5-7 per crown in sweetclover fields. (Andersen).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - UTAH - Moderately numerous in alfalfa fields, Washington County. (Knowlton).

YELLOW CLOVER APHID (Therioaphis trifolii) - ILLINOIS - Present in red clover in eastern area. (Ill. Ins. Rpt.).

YELLOW SUGARCANE APHID (Sipha flava) - LOUISIANA - Counts ranged from 1 to many per plant in sugarcane examined, with 5 percent infestation in Avoyelles Parish and 12 percent in West Baton Rouge Parish. (Spink).

JAPANESE BEETLE (Popillia japonica) - INDIANA - Grub mortality about 75 percent at Kentland, Newton County. (Gould, April 18).

SOYBEAN CYST NEMATODE (Heterodera glycines) - In Mississippi County, ARKANSAS 11 properties totaling 462 acres found infested, and in Camden County, NORTH CAROLINA, 2 properties totaling 204 acres found infested. One property in Camden County is 18 miles from other known infestations in county. In TENNESSEE, 5 properties in Lake County found infested. All five properties were follow-ups on U.S. Soil Testing Laboratory material. (PPC, Sou. Reg., Mar. Rept.).

SEED-CORN MAGGOT (Hylemya cilicrura) - ILLINOIS - Adults observed in northern area. (Ill. Ins. Rpt.).

FRUIT INSECTS

EUROPEAN RED MITE (Panonychus ulmi)- MARYLAND - Eggs abundant on apple twigs. (U. Md., Ent. Dept. OHIO - Hatching began at Wooster, Wayne County, on April 18, with heavy hatch on April 24. (Cutright). VIRGINIA - Eggs hatching, normal abundance in northern apple orchards. (Hill). NEW JERSEY - No hatching observed. (Ins. Dis. Newsltr.). ILLINOIS - Hatching at Carbondale, April 17. (Meyer). INDIANA - Hatching at Vincennes, April 21. (Hamilton). Hatching at Orleans. (Marshall). PENNSYLVANIA - P. ulmi and Tetranychus telarius fairly abundant in apple foliage in center of trees in south central area. (Pepper). NEW YORK - Occasional hatch observed in Ulster County. (N.Y. Wkly. Rpt.).

CLOVER MITE (Bryobia praetiosa complex)- OHIO - Eggs hatching on apple. (Cutright, April 17). UTAH - Very numerous some Washington County orchards. Hatching in Kane, Millard and northern Utah Counties; young mites and eggs conspicuous some orchards. (Davis, Knowlton).

ORCHARD MITES - IDAHO - Hatching on prunes, apples and Scotch pines, Canyon County. Prune and apple trees previously sprayed. Prune foliage 7-80 percent infested with 10-100 per leaf. Populations on apples and Scotch pines lower but severe. (Scott). VIRGINIA - Tetranychus schoenei present in apple orchards in northern area. (Hill).

APHIDS - WISCONSIN - Populations appear small in Madison orchards. (Wis. Ins. Sur.). VIRGINIA - Aphis pomi and Anuraphis roseus have hatched in northern apple orchards; populations normal. (Hill). WEST VIRGINIA - A. pomi numerous on apple in Jefferson and Berkeley Counties. (W. Va. Ins. Sur.). PENNSYLVANIA - Aphis pomi, Anuraphis roseus and Rhopalsiphum fitchii more abundant than usual on apple in south central area. Stem mothers reproducing. Myzus cerasi hatching on cherry in south central area. (Pepper). NEVADA - Populations of Myzus cerasi increasing on cherry in Reno area, Washoe County. (Bechtel, Apr. 18). OKLAHOMA - Eriosoma lanigerum infesting wounded trees in Pontotoc County. (Coppock, Vick). UTAH - A. pomi and E. lanigerum infesting apple trees in Washington County. Myzus persicae curling peach leaves some places. Severely curling plum foliage in lower areas of Washington County. Anuraphis persicae damaging some young peach orchards in southern area. (Knowlton).

CATFACING INSECTS - DELAWARE - Adults of Euschistus variolarius on peach trees, Kent County, April 21. (MacCreary, Conrad). ILLINOIS - Populations of stink bugs increasing on peaches at Carbondale. Lygus lineolaris past peak of abundance. (Meyer). INDIANA - More than normal damage to peaches by L. lineolaris expected this year at Orleans. Feeding by stink bugs should increase, week beginning April 23. (Marshall). PENNSYLVANIA - Fairly abundant in apple trees in south central area. (Pepper).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana)- MARYLAND - Adults emerged at Hancock, Washington County (April 17) and egg masses were noted on the 19th. (U. Md., Ent. Dept.). VIRGINIA - Egg masses very prevalent, varying from light to very heavy. Expected to be very serious in apple orchards during 1958. (Hill). WEST VIRGINIA - Emergence on apple light in Berkeley County. (W. Va. Ins. Sur.). NEW JERSEY - Moths abundant; few egg masses found in southern area, April 21. (Ins. Dis. Newsltr.). ILLINOIS - Still laying eggs; fresh masses found April 22 at Carbondale. (Meyer). PENNSYLVANIA - Eggs fairly abundant on apple in south central area. Adults very abundant. No hatching yet. (Pepper). NEW YORK - First adult taken in traps in eastern area, April 21. (N.Y. Wkly. Rpt.)

CODLING MOTH (Carpocapsa pomonella) - NEW JERSEY - Pupation begun in Burlington County, April 21. (Ins. Dis. Newsltr.). INDIANA - First pupa found April 21 at Vincennes. (Hamilton).

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - VIRGINIA - Adults emerging in apple orchards in northern area. (Hill).

EASTERN TENT CATERPILLAR (Malacosoma americanum)- OHIO - Numerous young colonies in northeastern orchards. (Cutright). OKLAHOMA - Common in southern counties in native plums, larvae mature, present in north central counties. (Coppock, Vick).

SPRING CANKERWORM (Paleacrita vernata)- OKLAHOMA - Very abundant on plum, peach, apple, elm and oak in north central and south central areas. All larval instars present in northern counties. (Coppock).

PEACH TWIG BORER (Anarsia lineatella) - UTAH - Damage conspicuous at Hurricane; noticeable elsewhere in Washington County. (Knowlton).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - Light in Grass Valley, Nevada County. (Cal. Coop. Rept.). NEW YORK - Nymphs observed few orchards in Rockland County. (N.Y. Wkly. Rpt.).

CALIFORNIA PEAR-SLUG (Pristiphora californica)- CALIFORNIA - Light on pear in Kelseyville, Lake County. (Cal. Coop. Rept.).

PLUM CURCULIO (Conotrachelus nenuphar) - DELAWARE - Adults on peach trees, Kent County, April 21. (MacCreary, Conrad). VIRGINIA - Emerging from hibernation in northern area apple orchards. (Hill). ILLINOIS - First adults of season found at Carbondale, April 21. Expected to increase rapidly. (Meyer). INDIANA - First adults jarred from trees at Vincennes, April 21. (Hamilton). TEXAS - Large populations some plum orchards in Cherokee County. (Turney). GEORGIA - Egg development begun in females at Fort Valley, April 8. Some adults full size, but not quite ready for deposition in hosts. Deposition will take place in peaches when they are exposed from shucks. (Snapp, Apr. 17). Adults left hibernation in numbers, as many as 2 per tree in one commercial orchard on April 17. (Snapp, Apr. 21).

SCALES - CALIFORNIA - Light infestations of Lepidosaphes destefanii and Pollinia pollini found on olive near Cloverdale, Sonoma County, extending known range in California approximately two miles north and west. (Cal. Coop. Rept.).

CURRENT FRUIT FLY (Epochra canadensis)- OREGON - Emerged from cages in Marion County week of April 21. (Every).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Overwintering larvae in last instar; highly parasitized in south central area. (Turney).

BURROWING NEMATODE (Radopholus similis) - FLORIDA - Initial surveys in 80 groves found 18 infested. Of 150 citrus nurseries inspected, 7 found infested. (PPC, Sou. Reg., Mar. Rept.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Trap operations normal in Mexicali district, but reduced in Tijuana district due to rain during March. In western area, 1,313 traps were in operation on which 4,602 inspections were made. No fruit flies were found. Spraying operations were resumed on March 18 in Tijuana, Baja California. During March, 4,448 host plants were sprayed on 1,284 properties. (PPC, Mex. Reg.).

MEDITERRANEAN FRUIT FLY (Ceratitidis capitata) - MEXICO - In eastern area, 250 traps operated and inspected on 15-day intervals, no specimens found. (PPC, Mex. Reg., Mar. Rept.). LOUISIANA - 106 combination fruit fly traps in operation during month, mostly in vicinity of Buras, Plaquemines Parish. Continued operation of traps reported in Baldwin and Mobile Counties, ALABAMA. No suspicious specimens collected. (PPC, Sou. Reg., Mar. Rept.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Surveys by National Blackfly Committee and PPC personal were conducted on 124,117 trees on 2,613 properties in the chemical control and non-infested zones. Total of 114 trees found infested on 23 properties. Locations where negative inspections made were Matamoros, Nuevo Laredo; Municipios Villagran and Mainero, Tamaulipas; Sabinas Hidalgo, Vallecillo, El Cercado and Gral. Teran, Nuevo Leon; San Luis Rio Colorado, Sonora; and Mexicali, Baja California. In chemical control zones, light to medium infestations were as follows: 8 in Municipio Hidalgo, Tamaulipas; 2 in Monterrey, 3 near Allende, 4 in vicinity of Montemorelos, 2 at Linares and one in Hualahuises, Nuevo Leon; and 3 at Hermosillo, Sonora. Infestations in Monterrey first found since March 1955. (PPC, Mex. Reg., Mar. Rept.). TEXAS - Surveys were conducted in Cameron, Hidalgo and Webb Counties. All previously known infested properties inspected in Brownsville area of Cameron County, and in Webb County, inspections were confined to city properties in Laredo where infestations found in 1955-56. Total of 32,392 trees inspected on 3,147 properties, all negative. (PPC, Sou. Reg., Mar. Rept.).

Citrus Insect Situation, Third Week of April, Lake Alfred, Florida - PURPLE SCALE reached high level with some further increase expected. FLORIDA RED SCALE activity unchanged, at high level, with an increase expected in next week or two. CITRUS RED MITE activity on old leaves declined but infestations on new leaves are increasing. Further increase on new leaves in expected. CITRUS RUST MITE activity was on increase, but little further change is expected on old leaves next week. Activity will increase on new leaves in May. SIX-SPOTTED SPIDER MITE infestations increased sharply and considerable further increase is expected, with the peak occurring after middle of May. APHID infestations are at peak, but will still be damaging on some severely frozen trees. (Pratt, Thompson, Johnson; Apr. 22).

TRUCK CROP INSECTS

BEEF LEAFHOPPER (*Circulifer tenellus*) - NEVADA - Populations increased on tomato seedlings to 2.0-2.5 per square foot of row April 14-18 in Moapa Valley, Clark County. Averaged 0.3 per square foot of row April 7-11. (Dorst).

Second Statement of Beet Leafhopper Conditions in Utah, Western Colorado, Southern Nevada, Central Arizona and Southeastern California - 1958

Additional data have substantiated the information released CEIR 8(11):188 that spring dispersal of the beet leafhopper from the southern desert breeding grounds to the cultivated districts of south central and northern Utah and western Colorado will be large. The population in western Nevada is expected to be of moderate magnitude. This movement is expected to start by late April and will probably reach its peak by May 20. The shift in population to the cultivated districts of southeastern California and southern Arizona from adjacent desert areas started in March, is expected to be moderate and probably will continue until mid-April. The dispersal of leafhoppers to the adjacent cultivated districts of southern Nevada and southern Utah started in late March; additional movements are expected in April and the population is expected to be large. The local movement from breeding grounds of western Nevada, northern and eastern Utah, and western Colorado to the adjacent sugar beet and tomato districts is expected to be light to moderate. The movement is expected to start in early June. Approximately 25 percent of the overwintering leafhoppers collected from northwestern Arizona in February were carrying the curly top virus. Leafhoppers collected from other portions of southern breeding ground in February showed the number infective to be almost nil. Additional leafhoppers of the first and second broods collected in March and April in southern and western Arizona, southeastern California, southern Nevada and southern Utah show about 8 percent viruliferous. This was about twice that of 1957. In the northern breeding grounds of Utah approximately 6 percent were viruliferous and this was similar to that recorded for 1957.

The local breeding grounds in northern and eastern Utah, western Colorado and western Nevada include a potential acreage estimated at 75 square miles. The unit overwintering leafhopper population is about equal to that observed in 1957; however the host plant acreage is larger. The leafhopper contribution from the southern breeding grounds to the overwintering population is expected to be larger than for many years; however the unfavorable host plant conditions will probably make this unimportant. The beet leafhopper movements to adjacent cultivated districts is expected to be light to moderate. (Dorst, Knowlton)

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - NORTH CAROLINA - Adults active for 2 weeks prior to April 18, Duplin County. (Reid).

STRIPED CUCUMBER BEETLE (*Acalymma vittata*) - NORTH CAROLINA - First adults of season seen April 20, Wake County. (Farrier).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - NORTH CAROLINA - Severe infestation on Irish potato breeding stock under glass, Wake County. (Scott, Farrier).

TOMATO CATERPILLARS - TEXAS - Tomato hornworms and tomato fruitworms increasing and causing damage to tomatoes in lower Rio Grande Valley. (Deer).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - NORTH CAROLINA - Injuring Irish potatoes in some areas, Duplin County. (Reid). GEORGIA - Light infestations of adults on tomatoes in Cook, Lowndes, Brooks and Thomas Counties; moderate on tomatoes in Colquitt County. Heavy deposition of eggs on tomatoes in aforementioned counties. (Johnson).

WHITE GRUBS (*Phyllophaga* spp.) - ALABAMA - Feeding on roots of cabbage plants in Russell County. (Grimes). INDIANA - Damaging melons and tomatoes in cold frames in Knox and Davess Counties. Sod obtained from pasture. (Gould, Apr. 18).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - ALABAMA - Infestations serious on turnips in Russell County. (Grimes). TENNESSEE - Larvae attacking tomatoes in Anderson County. (Mullett).

HARLEQUIN BUG (*Murgantia histrionica*) - MISSISSIPPI - Heavy infestation on turnips, Lowndes County. (Hutchins).

FLÉA BEETLES - NEW JERSEY - Active on crucifers. (Ins. Dis. Newsltr.). NEW MEXICO - Light infestation on lettuce near Artesia, Eddy County. (N. Mex. Coop. Rpt.). OKLAHOMA - Severely damaging tomatoes in Bixby area, Tulsa County. (Walton, Arbuthnot).

CABBAGEWORMS - NEW JERSEY - Adults active and laying eggs, April 18. (Ins. Dis. Newsltr.). ILLINOIS - Adults of *Pieris rapae* observed in northern area. (Ill. Ins. Rpt.). NEW MEXICO - Eggs and larvae of *Trichoplusia ni* abundant on untreated lettuce fields in Eddy and Dona Ana Counties. (N. Mex. Coop. Rpt.). GEORGIA - Light to moderate infestations of *Plutella maculipennis* on collards and cabbage in Brooks County. (Johnson).

CABBAGE APHID (*Brevicoryne brassicae*) - ALABAMA - Infestations heavy in Russell County. (Grimes).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - GEORGIA - Light to moderate infestations on beans in Brooks, Colquitt, Thomas and Grady Counties. (Johnson).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - ALABAMA - Heavy infestation on beans in Lee County. (Grimes). GEORGIA - Light to moderate infestations on beans in Brooks, Colquitt, Thomas and Grady Counties. (Johnson).

PEA LEAF WEEVIL (*Sitona lineata*)- OREGON - Infesting garden peas in Silverton area, Marion County. This is an eastern extension of the known range. (Larson).

LEAFHOPPERS (*Empoasca* spp.)- NEW MEXICO - Moderate infestations on lettuce in Eddy and Dona Ana Counties. Some stippling of leaves. (N. Mex. Coop. Rpt.).

GREEN PEACH APHID (*Myzus persicae*)- NEW MEXICO - Very light on lettuce in Eddy and Dona Ana Counties. (N. Mex. Coop. Rpt.).

CUTWORMS - ALABAMA - Damaging cabbage and beans in Russell County. (Grimes).
NEW MEXICO - Eggs light on lettuce near Artesia, Eddy County. (N. Mex. Coop. Rpt.).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Infestations heavy in conjunction with *Peridroma margaritosa* on spinach in Patterson area of Stanislaus County. (Cal. Coop. Rpt.).

ONION MAGGOT (*Hylemya antiqua*)- IDAHO - Overwintering fly emergence increasing with populations reaching economic levels in some southwestern areas. (Scott).

ARTICHOKE PLUME MOTH (*Platyptilia carduidactyla*)- NEW MEXICO - Damaging artichokes at Mesilla Park, Dona Ana County. (N. Mex. Coop. Rpt.).

A SPRINGTAIL (*Onychiurus pseudofimetarius*)- CALIFORNIA - Heavy local populations on garlic in Santa Cruz area, Santa Cruz County. (Cal. Coop. Rpt.).

THRIPS - NEW JERSEY - Very active on overwintering onion patches. (Ins. Dis. Newsltr.). UTAH - *Thrips tabaci* marking onion tops at Washington. (Knowlton).

SPIDER MITES - INDIANA - Beginning to feed on strawberry plants at Orleans. (Marshall). TEXAS - Continue to damage tomatoes several fields in lower Rio Grande Valley. (Deer).

STRAWBERRY APHIDS - WASHINGTON - Serious infestations of *Myzus ascalonicus* on strawberries in single fields in Skagit, Whatcom and Snohomish Counties, April 10-17. Det. by Adison and L. M. Russell. First recorded on strawberry in North America in British Columbia in 1955. (Eide). CALIFORNIA - Heavy on strawberries in Chula Vista, San Diego County. (Cal. Coop. Rpt.).

CYCLAMEN MITE (*Steneotarsonemus pallidus*)- CALIFORNIA - Heavy on strawberry plants in El Cajon, San Diego County. (Cal. Coop. Rpt.).

STRAWBERRY LEAF ROLLER (*Ancylics comptana fragariae*)- INDIANA - Attack on strawberries has been heavy at Orleans. (Marshall).

A STRAWBERRY WEEVIL (*Brachyrhinus rugosostriatus*)- CONNECTICUT - Collected in home in Branford during fall of 1957. Second report from State; first collection from New Britain, in 1950. (Johnson).

TOBACCO INSECTS

BUDWORMS - GEORGIA - *Heliothis* sp. light to moderate on field tobacco in 7 counties. (Johnson).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - TENNESSEE - Present generally in tobacco areas of State. (Mullett). GEORGIA - Light to moderate infestations on tobacco in field in 7 counties. (Johnson).

A TENDIPEDID - MARYLAND - Larvae abundant, causing injury to young tobacco plants in beds at Waldorf, Charles County. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - GEORGIA - First overwintered adult collected on tanglefoot trap. (Beckham). TEXAS - Overwintered weevils found in some test plots in Brazos County. (Atkins).

COTTON APHID (Aphis gossypii) - TEXAS - On young cotton in Burleson County but no damage evident. (Turney).

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - In State of Sinaloa, 662,517 cotton blooms were inspected in 130 fields; no pink bollworm found. During February and March, dead pink bollworm larvae were found in number of fields in Juarez, Delicias and Torreon zones. Inspections indicate a very high mortality, especially in State of Chihuahua. (PPC, Mex. Reg., Mar. Rpt.). From February 11 to March 19, spot check of fields in 8 eastern OKLAHOMA and 4 ARKANSAS counties resulted in finding no pink bollworm larvae in either debris or standing stalks. Inspections were conducted in two other Oklahoma counties, which resulted in finding one larva from lint cleaner inspections in Tillman County. Limited inspections in northeastern and eastern counties of TEXAS revealed more live larvae than expected in Ellis, Falls, Limestone and McLennan Counties. This is considered unusual in view of the very wet fall and winter. (PPC, Sou. Reg., Mar. Rpt.).

Cotton Insects in Lower Rio Grande Valley, Texas: CUTWORM damage further diminished and SPIDER MITE situation remains about the same. Few fields in Cameron County reported to have THRIPS damage. FLEAHOPPERS have built up in north Willacy and north Hidalgo Counties. Some fields in Willacy County have BOLLWORMS feeding on terminals of young cotton. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - NEVADA - Heavy emergence of Pityopthorus sp. from dead and injured pinon pines in Gardnerville - Holbrook areas, Douglas County. (Bechtel, Gallaway). COLORADO - Adults of Leperisinus aculeatus observed in flight at Fort Collins, Larimer County. (Ext. Sta.)

A CYNIPID - TEXAS - Infesting oak leaves and forming oak galls previously, now causing some of leaves to shed, Brazos County. (Turney).

ELM LEAF BEETLE (Galerucella xanthomelaena) - IDAHO - Adults leaving hibernation quarters in large numbers near New Plymouth, Canyon County. (April 14, Waters).

ELM SAWFLY (Cimbex americana) - NORTH CAROLINA - Local heavy infestation on water elms, Forsyth County. (Wright).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - INDIANA - Overwintering larvae constructing tents, Elkhart County. (Schuder).

DEODAR WEEVIL (Pissodes nemorensis) - ALABAMA - Large numbers in all stages in pine timbers, Lee County, with as many as 10 weevils per 3 feet of timber. (Grimes).

EUROPEAN ELM SCALE (Gossyparia spuria) - WEST VIRGINIA - Light on elms in Monongalia County. (W. Va. Ins. Sur.). UTAH - Serious in many localities. (Knowlton).

A GALL WASP (Dryophanta sp.) - NORTH CAROLINA - Several infestations on willow oak, Wake County. (Scott, Hunt, Farrier).

LEAFHOPPERS - NEW MEXICO - Adults and nymphs heavy on elms at Las Cruces, Dona Ana County. (N. Mex. Coop. Rpt.).

MAY BEETLES (*Phyllophaga* sp.) - ALABAMA - Damaging pecan and oak foliage in Marshall and Lee Counties. (Grimes).

MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) - NEVADA - Larval populations heavy on elms at Las Vegas, Clark County. (Zoller).

AN OAK LECANIUM (*Lecanium quercifex*) - NORTH CAROLINA - Infestation on willow oak, Wilson and Wake Counties. (Scott, Jones, Farrier).

PINE BARK APHID (*Pineus strobi*) - WEST VIRGINIA - Heavy on white pine seedlings in nurseries, Tucker County. (W. Va. Ins. Sur.).

PINE ENGRAVER (*Ips pini*) - PENNSYLVANIA - Considerable injury to Scotch and Virginia pines, Juniata County. Trees on decline. (Udine).

A SPRUCE NEEDLE MINER (*Recurvaria piceaeella*) - PENNSYLVANIA - Killing needles of Norway spruce, Westmoreland County. (Udine).

TENT CATERPILLARS (*Malacosoma* spp.) - MARYLAND - Tents of *M. americanum* noticeable in wild cherry in all sections. (U. Md., Ent. Dept.). ALABAMA - Infestations of *M. americanum* increasing and larvae leaving tents to feed. (Flynn). Specimens of *M. disstria* collected in Baldwin County. (Hyche).

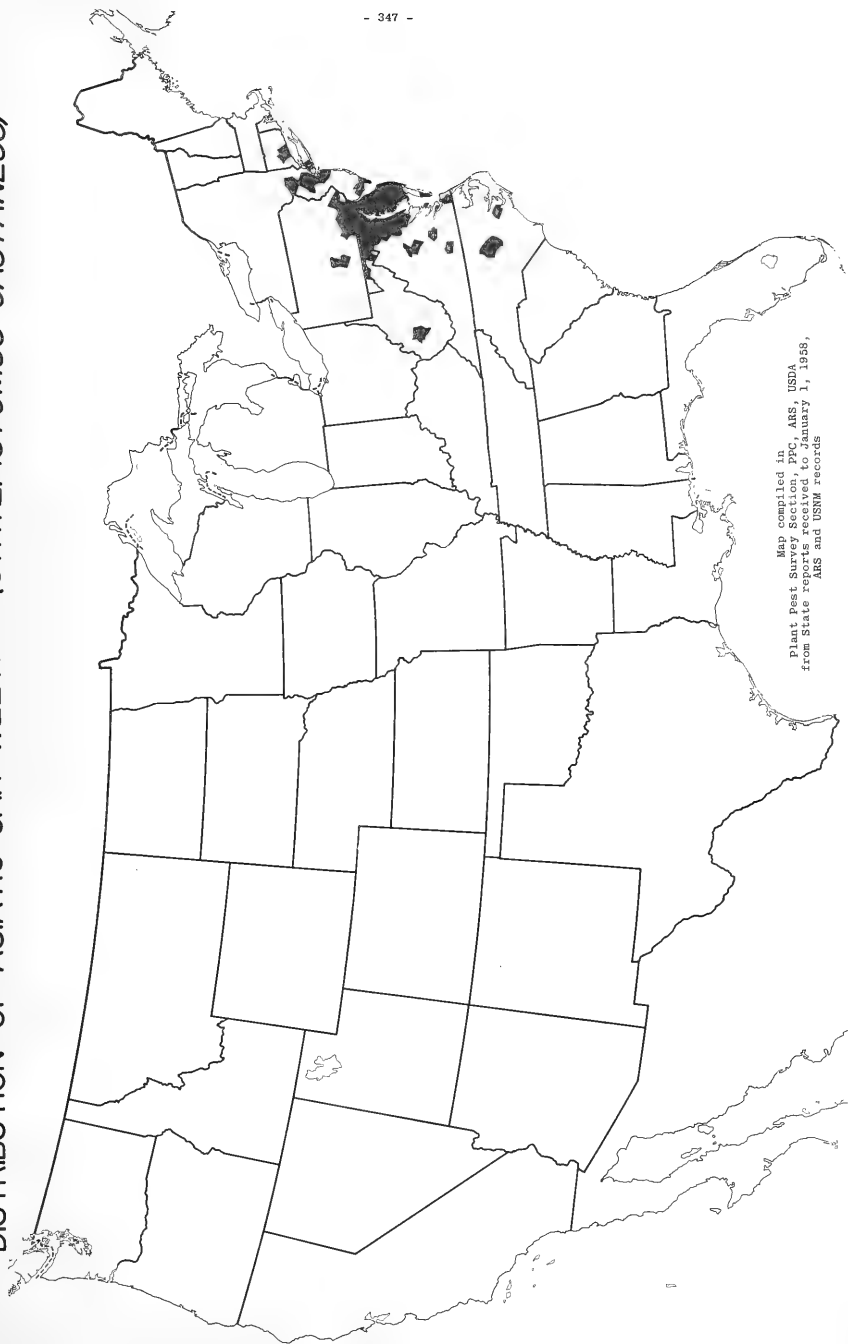
WISCONSIN - Winter egg band surveys indicate heavy infestations of *M. disstria* in southern two-thirds of Iron, extreme western Vilas, northwestern corner of Oneida, northern two-thirds of Price, eastern one-third of Rusk and extreme northwestern corner of Taylor Counties. Medium to light infestations will extend outward from this area to Douglas, Chippewa and Lincoln Counties. (Wis. Ins. Sur.). LOUISIANA - *M. americanum* very abundant in northern part of State and *M. disstria* abundant in Baton Rouge. (Spink). OREGON - *M. disstria* and *M. pluviale* emerging in Willamette Valley, week of April 20. (Goeden, Capizzi). VIRGINIA - Small tents of *M. americanum* present in most trees in northern and southwestern areas. (Morris). PENNSYLVANIA - *M. americanum* heavy in Dauphin County. (Slesman). Very abundant on cherry and other trees, Westmoreland County (Udine) and in south central areas (Pepper). UTAH - Hatching in northern areas. (Brower, Knowlton). Infesting cottonwood trees along Virgin River, Washington County. (Knowlton). ILLINOIS - *Malacosoma* sp. larvae emerging in northern part of State. (Ill. Ins. Rpt.). NEW JERSEY - Hatched throughout the State, tents growing rapidly. (Ins.-Dis. Newsl.).

A WEEVIL (*Pissodes approximatus*) - PENNSYLVANIA - Christmas tree plantings to be sprayed for control in May. (Udine).

Some Forest Insects, Wisconsin: Heavy adult feeding by WHITE-PINE WEEVIL on Scotch and white pine reported in northeastern area on April 17, but larval populations of LARCH CASEBEARER appear light in same area. A ROOT COLLAR WEEVIL is causing damage in Adams County area. PINE NEEDLE SCALE populations appear quite high on some white pines in Madison area, Dane County. (Wis. Ins. Sur.).

APHIDS - ALABAMA - *Aphis spiraeicola* damage to spirea increasing. Several aphids attacking various types of roses in several areas of State. (Grimes). NORTH DAKOTA - *Anuraphis viburnicola* infesting snowball and cranberry in Fargo area, Cass County. (N. D. Ins. Rpt.). KANSAS - Infestations of an arborvitae aphid on ornamentals in some locations, Kearny County. (Gates). WEST VIRGINIA - A woolly elm bark aphid light on elms, Hardy County. (W. Va. Ins. Sur.). PENNSYLVANIA - *Chermes abietis* fairly numerous in plantation Norway spruce, Westmoreland County. (Udine).

DISTRIBUTION OF ASIATIC OAK WEEVIL (*CYRTEPISTOMUS CASTANEUS*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA
from State reports received to January 1, 1958,
ARS and USNW records

EUROPEAN EARWIG (Forficula auricularia) - IDAHO - Adults active in gardens in Moscow area, Latah County. (Barr).

HOLLY LEAF MINERS (Phytomyza spp.) - VIRGINIA - Medium on American hollies, Norfolk County (Harrell) and present in trees in Richmond, Henrico County, and Galax, Grayson County (Rowell). OREGON - Approximately 100 acres infested in hill area west of Portland, Multnomah County, April 25. First adults emerged by April 20. (Larson).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - IDAHO - Light infestation on golden willow at Idaho Falls, Bonneville County, mixed with European fruit scale. (Portman). WEST VIRGINIA - Moderate on lilac, Hampshire County, light on blueberry, Marion County. (W. Va. Ins. Sur.). UTAH - Severe on many susceptible hosts, Utah County. (Knowlton).

SCALES - CALIFORNIA - Medium infestation of Pulvinaria occidentalis on Lombardy poplar in Colma, San Mateo County. P. floccifera light on camellia at Atwater, Merced County. Aspidiotus hederæ locally heavy on Francoa at Santa Barbara, Santa Barbara County, medium on olive at Orland, Tehama County and heavy on azalea near Paradise, Butte County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - KANSAS - Adult activity reported in north central part of State, April 14-18. (Gates).

CATTLE LICE - OKLAHOMA - Numbers heavy on unsprayed cattle, Custer County. (Hutton). ALABAMA - Bovicola bovis prominent on cattle in Wilcox County. (K. Hays).

A GNAT (Tendipes decorus) - CALIFORNIA - Number of complaints as being numerous in some localities in Alameda and Contra Costa Counties. (Peter).

HORN FLY (Siphona irritans) - ALABAMA - Counts averaged 50 per head on cattle in Wilcox County. (K. Hays). KANSAS - First activity reported on cattle in Rush County. (Gates). On cattle at Brookville, western Saline County (Knapp, April 11) and in Meade County (Marvin). OKLAHOMA - Heavy on cattle in Custer County. (Hutton). Average 10-30 per animal, Payne and Noble Counties. (Howell).

MOSQUITOES - CALIFORNIA - Light trap reports for April 6-12 indicate higher populations than median for same period of 1954-1957. Culiseta inornata constitute bulk of species taken, being reported more often from central coastal areas than elsewhere. Adults and larvae of Culex tarsalis present in large numbers for this time of year in some districts of San Joaquin Valley. (Cal. Coop Rpt.). NEW MEXICO - Abundant and annoying at Truth or Consequences, Sierra County. (N. Mex. Coop. Rpt.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - MEXICO - Inspections conducted during March at Mexicali, Baja California, and Huatabampo and Navajoa, Sonora. Total of 422 inspections made. No positive determinations received on 124 collections submitted during March except for delayed report of a positive determination on property in Ejido Puebla. Nine collections submitted from Sonora all negative. (PPC, Mex. Reg., Mar. Rpt.). Inspections were made on 6 properties in ALABAMA, one in GEORGIA, 6 in MISSISSIPPI, one in OKLAHOMA and 102 in TEXAS. Extensive inspections made of feed dealers in Victoria, Texas.

All inspections negative. (PPC, Sou. Reg., Mar. Rpt.).

BENEFICIAL INSECTS

BIG-EYED BUGS (*Geocoris* spp.) - IDAHO - Average 2 adults and 5 nymphs per 10 sweeps in red clover near Notus, Canyon County. (Waters). UTAH - Occasional specimen present in alfalfa fields, Washington County. (Knowlton).

HONEY BEE (*Apis mellifera*) - NORTH CAROLINA - Loss of 40-50 percent of colonies in Surry County due to starvation and other causes. (March 22, Earnest).

PREDATORS - DELAWARE - *Podisus maculiventris* adults fairly common in clover field, New Castle County. (MacCreary, Conrad). ALABAMA - Several specimens of *Chrysopa oculata* and LADY BEETLE larvae observed in fields of wheat in Autauga County. (Grimes). LOUISIANA - Predators and parasites reducing numbers of greenbugs and pea aphids in most fields. Syrphid larvae averaged 1 per sweep. (Spink). ILLINOIS - *Nabis* sp. averages 2 per 100 sweeps in clover and alfalfa in northeastern section and 6 per 100 sweeps in eastern section. (Ill. Ins. Rpt.). WISCONSIN - Lady beetles quite abundant having overwintered in excellent condition, with losses appearing to be at an all-time minimum throughout the State. (Wis. Ins. Sur.). NEBRASKA - Counts in alfalfa and sweetclover fields in eastern third of State averaged 14 nabids, 6 lacewings, 8 lady beetles and 10 *Orius* per 100 sweeps. MISSOURI - Lady beetles and others average 0-1 per sweep in southwestern areas. (Kyd, Thomas). UTAH - Damsel bugs appearing in Washington County alfalfa fields. (Knowlton). NEW MEXICO - Lady beetle adults and larvae, syrphid flies, damsel bugs and pirate bugs abundant in alfalfa fields. *Praon palitans* becoming well established in many fields, Dona Ana County. (N. Mex. Coop. Rpt.).

MISCELLANEOUS INSECTS

RED HARVESTER ANT (*Pogonomyrmex barbatus*) - OKLAHOMA - Active throughout State. (Howell).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - During March, counties and parishes reported infested for first time were Coosa, ALABAMA; Colquitt, GEORGIA; Bossier, LOUISIANA; Sharkey, MISSISSIPPI; Onslow, NORTH CAROLINA; Florence, SOUTH CAROLINA; and Harrison, Gregg and Bexar, TEXAS. Extensions of infestations were reported in Alabama, Arkansas, Florida, Louisiana and Mississippi. (PPC, Sou. Reg., Mar. Rpt.). OKLAHOMA - None found in inspection of McCurtain, Bryan and Pushmataha Counties. (PPC).

MIDGES - WISCONSIN - Heavy flights reported in western areas of the State on April 17. (Wis. Ins. Sur.).

SUGARCANE BEETLE (*Euethoela rugiceps*) - ALABAMA - Several specimens observed around lights in Lee County, with over 200 collected in a light trap in a 12-hour period. (Ruffin, Lester).

MARCH FLIES - WASHINGTON - Present in abundance in orchards near Malaga, Chelan County. (Ballard).

CORRECTIONS

CEIR 8(17):320 - Under STINK BUGS, should read Nezara viridula instead of Acrosternum hilare.

CEIR 8(17):329 - Under section on coffee, Salenaspidus should read Selenaspidus.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Felt. subt.	Heli. zea	Eueth. rugic.	Perid. marg.	Prod. ornith.	Trich. ni
ALABAMA(County)								
Lee 4/19,22,25	127	15			205			
FLORIDA								
Gainesville 4/23	1			1				
Quincy 4/4	1	1						
ILLINOIS								
Urbana 4/18-24	14					2		
INDIANA(County)								
Tiptecanoe 3/10-4/24	27	3				2		
LOUISIANA								
Baton Rouge 4/18-24	6	13	11		55	23	3	5
Franklin 4/18-23	11	2	8			9	1	1
MARYLAND(County)								
Montgomery 4/17-24	1					1		
MISSISSIPPI								
State College*	116	30		2		13	1	
Stoneville*	1278	33	6	3		442	11	3
NEBRASKA								
North Platte 4/13-19						3		
NORTH CAROLINA(County)								
Duplin 4/24	1				7			
SOUTH CAROLINA(Counties)								
Charleston 4/14-27	13	4	1			7		1
Oconee 4/19-25	58	6			6	4		13
TENNESSEE(Counties)								
Blount 4/15-21	95	17				18		41
Cumberland	36	6				23		3
Greene	16	5				1		2
Johnson	11	1				1		
Madison	78	1				38		
Maury	184	4				42		4
Robertson	32	9				14		3
TEXAS								
Brownsville 4/5-17			380	64		80		32
Greenville 4/1-15	362	50	19	2		100	23	3
Waco 4/19-25	16	3	24	6		50		
Winter Haven 4/8	24	42	36	9		72	12	15

*Two traps State College, 4 traps Stoneville

SUMMARY OF INSECT CONDITIONS - 1957

INDIANA

Compiled by John V. Osmun

Introduction: The year 1957 in Indiana was characterized by conditions of high moisture and slightly lower temperatures, two conditions which combined to produce an abnormal insect season. Rainfall during the spring and early summer was between 3 and 4 inches above normal in most of the State, while early temperatures were 0.5° F. below normal average in the north and as much as 3° F. below in the southern area during a similar period. That the conditions which prevailed were unusual is evidenced by a brief abundance analysis of the 10 insects and other arthropods normally rated by the entomology staff at Purdue University as the most important on crops and trees in Indiana. They are corn earworm, potato leafhopper, European corn borer, cutworms, smaller European elm bark beetle, meadow spittlebug, two-spotted spider mite, codling moth, hessian fly, and aphids. Of these, only the meadow spittlebug, probably the elm bark beetle, and possibly the potato leafhopper were of normal or highly economic importance. Not only were high moisture and less desirable temperatures direct factors, but many host crops had not yet reached a desirable state of growth at periods of normal insect abundance. The year 1957 in Indiana was rather unusual from the standpoint of economically important insects. Populations of principal species were generally lower than normal while several species of other insects became unusually abundant.

Field Crop Insects: **CORN EARWORM** (*Heliothis zea*) - In 1956 the fall survey showed 50-85 percent of the ears infested in the State. There was no evidence of overwintering as far north as Lafayette. In 1957, based on light trap records and field observation, corn earworm was comparatively low (see tomato fruitworm), with counts ranging from 6.5 percent of the ears infested in the northern counties up to 43 percent in the southernmost counties. **EUROPEAN CORN BORER** (*Pyrausta nubilalis*) - The 1956 fall survey showed moderate counts in the northern two-thirds of the State both in percent infestation and number of borers per stalk. Spring egg laying was heavy in spots but survival was low. As a result, the first generation was never high, since most of the corn at time of oviposition was small due to weather-incurred delays, and except in northern regions, the intensity of infestation decreased appreciably as the season advanced. Mid-summer moth flight was erratic and the fall larval generation was low except in the northern tier of counties which showed great variation between fields. **ARMYWORM** (*Pseudaletia unipuncta*) was neither abundant nor destructive in Indiana this year. **FALL ARMYWORM** (*Laphygma frugiperda*) - Although states immediately to the west had extensive severe damage from this insect in southern counties, Indiana damage was rather restricted to corn in Vanderburgh and Posey Counties. In early August the larvae attacked corn leaves extensively and later entered the tips of the ears causing damage similar to that of the corn earworm. **CORN LEAF APHID** (*Rhopalosiphum maidis*) was abundant only in scattered areas in corn and grain sorghum. **NORTHERN CORN ROOTWORM** (*Diabrotica longicornis*) occurred again as an adult pest of stalks and exposed tips of corn in southern Indiana. A **NOCTUID** caterpillar (*Simyra henrici*) was recorded as feeding on the leaves of corn in appreciable numbers in Newton County. **CUTWORMS** - General reduction noted over the populations which occurred last year. **MEADOW SPITTLEBUG** (*Philaenus leucophthalmus*) occurred in record abundance this season. High moisture and rank growth contributed to a population that reached counts of 5 per stem on alfalfa and clover in May in southeastern areas. **POTATO LEAFHOPPER** (*Empoasca fabae*) started entering the State early in May from the southwest and had achieved wide distribution by the second week in June. Populations were moderately high early in the year,

dropped off appreciably in the middle of August, but rose again to economic numbers late in the same month. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was generally less important economically this season. SPOTTED ALFALFA APHID (Therioaphis maculata) - The introduction of this insect into Indiana late in 1956 seemed to indicate that we would have a heavy infestation in 1957. However, this aphid did not appear until the latter part of August. The intensity was low although the area infested extended to include Crawford, Harrison, Floyd, Switzerland, Ohio, Dearborn, Dubois, Orange, Washington, Jefferson, Clark, Lawrence and Jackson Counties. Sullivan, Knox, Daviess, Martin, Gibson, Pike, Posey, Vanderburgh, Warrick, Spencer and Perry Counties were again infested as in 1956. GREEN CLOVERWORM (Plathypena scabra) was found to be common on soybeans in west central Indiana with extensive but not serious feeding. PLANT BUG populations, principally Lygus lineolaris, Adelphocoris rapidus, and A. lineolatus, were high especially in the south on alfalfa and other legumes. CLOVER ROOT BORER (Hylastinus obscurus) fed extensively but due to high available moisture, stands of clover were able to recover from any injury caused by this insect. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) was as heavy as in 1956 with 80-90 percent of the stems infested. CLOVER LEAF WEEVIL (Hypera punctata) populations were low this year. HESSIAN FLY (Phytophaga destructor) infestations were light throughout the State except in Gibson County where a moderate infestation occurred. BEAN LEAF BEETLE (Cerotoma trifurcata) - For a number of years this insect has shown an increasing ability to adapt to soybeans. Some fields in the south had up to 25 percent leaf defoliation and nearly that amount occurred in many northern fields. JAPANESE BEETLE (Popillia japonica) - For the first time the adults of this insect were abundant enough on crops (soybeans in Newton County) to require chemical control. Statewide recommendations for control were made available this year due to the increasingly wide distribution. GRASSHOPPERS - The fall survey indicated a very low grasshopper population with one or less than one grasshopper per square yard. Melanoplus femur-rubrum appeared to be the dominant species. CHINCH BUG (Blissus leucopterus) - As expected, did not develop in appreciable numbers in 1957.

Truck Crop Insects: A SAP BEETLE (Glischrochilus quadrisignatus) was generally abundant and pestiferous. Economically important in picked strawberries and raspberries readied for market. TOMATO FRUITWORM (Heliothis zea) was only moderately destructive with larval populations well below 1956. SQUASH BUG (Anasa tristis) was not reported serious. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) adults were common on beans, squash, melons, and cucumber - normal. A LOOPER (Rachiplusia ou) was severely abundant in mint areas of the northern part of the State. The first-generation larvae, early in July, defoliated up to 50 percent of the leaves of peppermint and spearmint and was also found infesting carrots, corn, and soybeans. The second-generation looper was also abundant and destructive in untreated mint fields.

Fruit Insects: ORIENTAL FRUIT MOTH (Grapholitha molesta) was reported as generally severe in sub-standard orchards. CODLING MOTH (Carpocapsa pomonella) infestations were moderate to low in most orchards. APPLE APHID (Aphis pomi) was of considerable concern to apple growers in the northern part of the State. MITE populations were the lowest in ten years with most activity from the European red mite (Panonychus ulmi), although two-spotted spider mite built up toward the end of the season.

Other Fruit Insect Conditions (Reported by D. W. Hamilton)

Insects on Apples: PLUM CURCULIO (Conotrachelus nenuphar) adults emerged from overwintering quarters during prolonged warm period prior to bloom; cool weather following bloom prolonged period of adult activity so that heavy cutting occurred to apples at the time of oviposition. Degree of injury varied extensively in commercial orchards. Harvest counts showed between 0.4 and 3.5 percent fruit injured in the better-cared-for orchards and up to 10 percent of the fruit injured in the poorer-cared-for orchards.

CODLING MOTH was more readily controlled than in the past five seasons. Spring-brood moths emerged late and cooler temperatures slowed development of broods. In Indiana most injury occurred south of U. S. Highway 40. Injury in northern area ranged between 0 and 2.0 percent. Where sprays were poorly timed or applied, percent "wormy" in the southern area was from 3 to 10 percent and oftentimes 25 percent. Only two instances where RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) was not controlled were observed. In one instance, near Vincennes, at least 75 percent of the apples were injured at harvest. Both EUROPEAN RED MITE and TWO-SPOTTED SPIDER MITE were troublesome in apple orchards but in a lesser degree than during the drought years of 1954 and 1955. European red mite was the more prevalent species observed in all localities. The recommended miticides generally maintained control. ROSY APPLE APHID (*Anuraphis roseus*) injury was not a problem in the orchards visited. APPLE APHID built up in a few orchards in the northern areas to the extent that control had to be applied. APPLE MAGGOT (*Rhagoletis pomonella*) was prevented from becoming established in the commercial orchards. Some specimens of apples received from the Peru, Indiana area during late July were infested with STALK BORER (*Papaipema nebris*). A LEAF MINER, probably *Callisto geminatella*, caused light injury to apple leaves in one orchard south of Vincennes. PERIODICAL CICADA (*Magicicada septendecim*) caused severe injury to the apple trees in an area adjacent to Nashville and to young shade trees in and around the city. The infestation was not as widespread as the brood that emerged in the area during 1953. LEAFHOPPER populations were injurious in a few orchards. The predominant species was *Erythroneura lawsoniana*.

Insects on Peaches: ORIENTAL FRUIT MOTH (*Grapholitha molesta*) activity increased throughout the area. In orchards where growers omitted sprays or neglected to include materials in the schedule that controlled oriental fruit moth, injury was the most severe observed in the past 8 years. PLUM CURCULIO was well controlled by most growers, but emergence was earlier in relation to fruit development than usual and in the poorer-cared-for orchards control was not as good as in the last two or three years. CAT-FACING INSECTS continued to be a problem in the southern area. Most of the injury is believed to have been caused by stink bugs. Two to five percent of the fruit was probably injured in most better-cared-for orchards. A LEAF ROLLER (*Platynota flavedana*) was active enough in peach orchards to require control to prevent commercial injury. Both EUROPEAN RED MITE and TWO-SPOTTED SPIDER MITE were present in peach orchards, and populations became large enough to warrant control measures during July and August. PEACH TREE BORER (*Sannioidea exitiosa*) and LESSER PEACH TREE BORER (*Synanthedon pictipes*) were active during the season. Peach tree borer is generally being well controlled in the commercial orchards. Lesser borer injury is readily found in most orchards.

Insects Attacking Nuts: Identification by R. H. Foote of specimens of adult *Tephritidae*, submitted by E. W. Pape, that were collected in traps or by hand in Indiana on Carpathian walnut trees, showed that they were mostly *Rhagoletis suavis*. A single specimen of *Zonosemata electa* was found; however, the host may have been some plant other than walnut.

Tobacco Insects: TOBACCO HORNWORM (*Protoparce sexta*) was more abundant on tobacco than it has been for some time, some fields being 100 percent infested with one or more larvae per plant. TOMATO HORNWORM (*P. quinquemaculata*) was only one-tenth as abundant on tobacco as *Protoparce sexta*. TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) was moderately abundant, as normal, except in tobacco seed beds where it was economically important. The GREEN PEACH APHID (*Myzus persicae*) was economically important for the first time in 5 years, doing damage late in the season.

Tree and Shrub Insects: OAK GALLS of several species were recorded in unusual abundance especially on white oak early in the season. FULLER ROSE BEETLE (*Pantomorus godmani*) was reported for the first time in Indiana (Warrick County) in late September attacking crapemyrtle and forsythia. CATALPA

SPHINX (Ceratonia catalpae) larvae caused unusually heavy defoliation of trees in northern Indiana. ZIMMERMAN PINE MOTH (Dioryctria zimmermani) was first reported in Indiana late in 1956, and became alarmingly abundant in the spring of 1957 in LaPorte County in red and Scotch pines. Moths were in flight early in the fall. ELM LEAF BEETLE (Galerucella xanthomelaena) was again recorded as destructive almost exclusively to Chinese elms especially in central and southern Indiana, although a northward trend is indicated. American elms were almost free of infestation. BAGWORMS (Thyridopteryx ephemeraeformis) continues to be economically very important on shrubs and trees in Indiana. Although not quite as abundant as the record year of 1956, the condition was severe. RED-HEADED PINE SAWFLY (Neodiprion lecontei) was abundant in Owen County in July. SYCAMORE TUSSOCK MOTH (Halisidota harrisii) was unusually abundant in the Lafayette area causing considerable defoliation. FALL WEBWORM (Hyphantria cunea) was extremely heavy in northern Indiana on black walnut, hickory, wild black cherry and oak. EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) was destructive to buds of Scotch and red pine in LaPorte County in August. YELLOW-NECKED CATERPILLAR (Datana ministra) was severe on multiflora rose and apple. LOCUST LEAF MINER (Chalepus dorsalis) damaged black locust very heavily throughout Indiana in August. MIMOSA WEBWORM (Homadaula albizziae) was abundant on Moraine and thornless honeylocust in the Indianapolis area and south.

Man and Animal and Household Insects: GERMAN COCKROACH (Blattella germanica) is increasing in abundance rapidly due primarily to its widespread resistance to chlordane and change in habits. BROWN-BANDED ROACH (Supella supellectilium) continues to be increasingly important in homes throughout the State. BOXELDER BUG (Leptocoris trivittatus) continued to be important in the fall of the year principally because convenient control measures are unavailable. E. SUBTERRANEAN TERMITE (Reticulitermes flavipes) is apparently increasing in importance due principally to desirable environments provided by new types of house construction. HOUSE FLY (Musca domestica) was unexpectedly low in spite of favorable moisture conditions. FLEAS (Ctenocephalides canis and C. felis) have become a major problem due to the increasing amount of DDT resistance. AMERICAN DOG TICK (Dermacentor variabilis) reached its highest population in many years, being unusually abundant in wooded areas throughout the spring. MOSQUITOES of most common species were unusually abundant throughout the year due to the continuous supply of standing water.

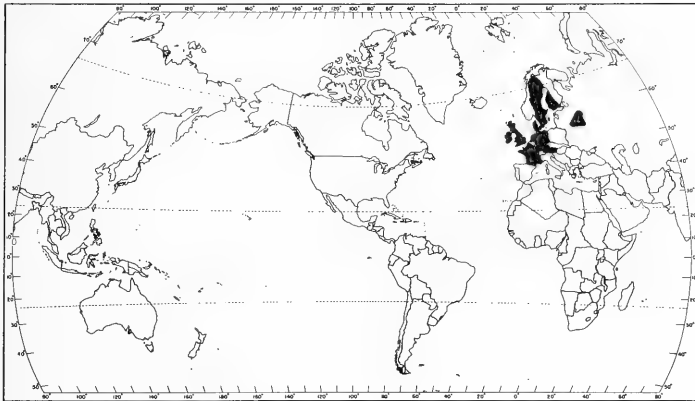
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

RASPBERRY MOTH (Incurvaria rubiella (Bjerkander))

Economic Importance: This bud borer is a major pest of raspberry in Scotland, England, Ireland and Holland. From 50 percent damage to total loss of crop has been recorded in parts of England on raspberries and loganberries. Severe damage also occurs in Holland where 50 percent loss on raspberries is common during outbreaks. The pest was first reported in North America from Fredrickton, New Brunswick, Canada, in 1936. Surveys in that country in 1939 showed the insect was distributed at points in the St. John River Valley for a distance of 70 miles and that it also occurred on Prince Edward Island.

Hosts: Raspberry, blackberry and loganberry.

Distribution: Canada (New Brunswick, Prince Edward Island), Russia (Moscow), British Isles, France, Germany, Holland, Denmark, Austria, Ireland, Sweden and Finland.



General Distribution of Raspberry Moth

Life History and Habits: In Canada overwintered larvae appeared on canes in late April or early May. A larva may attack several buds before boring into one. Infested shoots, commonly those toward tops of canes, wither and die. Pupation occurs in early June near the tip of the bud. Adults emerge the last half of June and lay eggs on the flowers. Young larvae feed on the receptacles and young fruit, but cause little damage, then drop to the ground (after reaching the second instar in Scotland) and hibernate in debris or the soil.

Description: Adult wing expanse 6-10 mm. Wings dark purplish brown with satin sheen and conspicuous yellow spots. Young larva whitish. Cocoon-like structure in which hibernation occurs is about 2.5 mm. in diameter. Overwintered larva bright pink with blackish head and plate of first segment. Pupa brown.

(Prepared in Plant Pest Survey Section in cooperation with other ARS agencies, and the U. S. National Museum.)
CEIR 8(18) 5-2-58



Raspberry Shoots



Adult and Larva of
Incurvaria rubiella

Figures (except map) from Ministry of Agriculture and Fisheries. 1931.
The raspberry moth. Advisory Leaf. No. 66, 4 pp. London.





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MAY 9, 1958

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Cooperative
**ECONOMIC INSECT
REPORT.**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPER eggs in panhandle counties of Oklahoma in sufficient numbers to indicate potential damaging infestations. (p. 359).

EUROPEAN CORN BORER winter survival potential threat in Iowa. (p. 359). Potential remains in Minnesota. (p. 359).

ARMYWORM adults trapped in Nebraska (p. 360) and South Dakota (p. 372).

ALFALFA WEEVIL infesting new county in North Carolina and reported from 13 counties in Georgia, first record of the State. (p. 360).

PEA APHID heavy in Arkansas and Illinois and potential greater for Wisconsin than in 1957. (p. 362).

CODLING MOTH pupation underway in Illinois and Indiana. (p. 365).

SUMMARY OF INSECT CONDITIONS - 1957 - Tennessee. (p. 373).

INSECTS not known to occur in the United States. (p. 375).

Distribution of ARMY CUTWORM. (p. 364).

ADDITIONAL NOTES. (p. 371).

CORRECTIONS. (p. 363).

WEATHER OF THE WEEK ENDING MAY 5

Last week's weather was mild and wet in the East, unseasonably cold and wet in the Mississippi Valley, unusually cold for the season in the Great Plains with precipitation ranging from very light in northern portions to extremely heavy in the south, and near normal temperatures with little or no precipitation prevailed in the Far West. Showers occurred on 4 to 6 days from the lower Great Plains northeastward through New England, generally totaling from 1 to over 3 inches. Heaviest rains fell in the lower Mississippi Valley. The least weekly total reported in Arkansas was 1.74 inches and the highest 12.67 inches at Dumas. Accumulations in northern Louisiana for the past 10 days, where showers occurred daily, ranged from 10 to 12 inches. For the same period in Mississippi, 12 to 28 inches fell in the upper and lower Delta region, the lower half of the north central portion of the State, and upper half of the south central portion of the State. Serious flooding occurred in Texas, Louisiana, Arkansas, and Mississippi, and local flooding in the Ohio Valley and southern Oklahoma.

In most of southern New England moderate to heavy rains fell on April 20, giving Providence, R. I., a total of 7.21 inches of precipitation for the month, the greatest April total in 54 years. At Boston, Mass., precipitation for the past 6 months, November 1957 through April 1958, totaled 40.04 inches, the most for any 6-month period of record there and more than an inch greater than the normal amount for an entire year; this wettest 6-month period follows Boston's driest 10-month period, January through October 1957. Scattered hail damage and a few tornadoes occurred in the lower Great Plains and South. On Sunday May 4, a severe windstorm in southern Maryland destroyed a large number of tobacco barns, with losses estimated at many thousands of dollars. April ended with a near record, late-season cold snap in northern areas east of the Rockies. On the 29th, freezing occurred as far south as Kansas and Missouri, and lows of 6° and 5° were reported from North Dakota and Minnesota respectively. Several states reported slight crop damage. Up to an inch of snow fell in extreme western Kansas, 4 inches in Billings County, North Dakota, and as much as 5 inches in northern New England. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - MINNESOTA - Most eggs in clear stage, some in lighter soils or on shallow slopes in coagulation stage. Eggs in good condition and predation light. (Minn. Ins. Rpt.). WISCONSIN - Chortophaga viridifasciata present in Washington County and Pardalophora apiculata adults active and numerous, Marquette County. (Wis. Coop. Sur.). KANSAS - Spring hatch of rangeland species has begun in northwestern counties. (Matthew). OKLAHOMA - Eggs of Melanoplus bilituratus, M. differentialis, M. bivittatus, Aulocara elliotti, Aelopes turnbulli, Amphitornus coloradus and Phliobostroma quadrimaculatum present in panhandle counties in sufficient numbers to indicate potential damaging infestation. Eggpods in good condition, eggs range from no development to well segmented. General hatch anticipated about May 10. Melanoplus spp. beginning to hatch in northwest counties. (Frazier et al.). NEW MEXICO - Nymphs average about 1 per sweep at Gila and Cliff, Grant County, and hatching in large numbers west of Deming, Luna County. (N. Mex. Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Percent pupation in one field examined in each county was 27 in New Castle, 30 percent in Kent and 47 percent in Sussex. (MacCreary, Conrad). NORTH CAROLINA - Adults emerging from larvae and pupae collected April 21, Pasquotank County. (Farrier). ALABAMA - Overwintered larvae are 30 percent pupated, no adults have emerged. (Eden). MINNESOTA - Winter mortality of 26 percent, though higher than in past years, may not effect reduction in potential for coming season. (Minn. Ins. Rpt.). IOWA - Winter survival 72.9 percent, potential threat for 1958. (Iowa Ins. Inf.). MISSOURI - Averaged 2,266 overwintering larvae per acre in stalk debris on surface of plowed fields, Randolph County, and 2,066 in Johnson County. (Munson).

MORMON CRICKET (Anabrus simplex) - OREGON - Light infestations developing on several sections of rangeland, Gilliam County. Nymphs primarily first and second-instar, hatch not completed April 29. (Chinn).

A BILLBUG - GEORGIA - Heavy on corn in Toombs and Berrien Counties. (Brogdon, Wood).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Damage light to moderate on corn, Baldwin County. (Eden).

FLEA BEETLES - TEXAS - Feeding on corn in Rockwall County. (Hawkins). NEVADA - Damaging seedling corn in Logandale area, Clark County, Averaging 10 per leaf. (Lauderdale, April 25). OKLAHOMA - Light to moderate infestations and damage to seedling corn in Nowata area, Nowata County. (Walton, Arbuthnot).

SEED-CORN MAGGOT (Hylemya cilicrura) - COLORADO - Bait trap counts indicate high adult populations, Weld County. (Exp. Sta.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ALABAMA - Light infestation damaging corn, Washington County. (Ruffin). MISSISSIPPI - Medium on corn at Petal High School, Forrest County. (Brunson).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - ARKANSAS - Winter survival averaging 1-7 percent. The higher percentages occur in deeper soils. (Whitcomb).

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - Damage light to moderate on corn, Baldwin and Escambia Counties. Replanting required in some areas. (Grimes).

GREENBUG (Toxoptera graminum) - ALABAMA - Apparently decreasing in southern areas. (Grimes). ARKANSAS - Infestations continue in untreated southwest fields and have developed farther east and north. Appeared in 4 southeastern, 2 south central, 4 southwestern and 2 west central counties. (Boyer).

KANSAS - None found in 8 northwest and 3 north central counties. (Matthew). OKLAHOMA - Rare in extreme northwest counties, none in panhandle counties. Populations being reduced in other sections. (Coppock). NEW MEXICO - None found in wheat fields checked, Curry and Roosevelt Counties. (N. Mex. Coop. Rpt).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - UTAH - Outbreak on greenhouse barley at Logan, Cache County; controlled by internal parasite. (Cox, Knowlton).

ARMYWORM (*Pseudaletia unipuncta*) - KANSAS - Early instar larvae averaged 3 per 100 sweeps in wheat fields, Osborn County. Adults reported from south central areas. (Matthew). TEXAS - Appearing in small numbers on vetch, Kaufman County. (Christian, Randolph). NEBRASKA - First 6 moths caught in light trap at Lincoln, Lancaster County. (Andersen). VIRGINIA - Adults active in Richmond City area. (Matheny).

BROWN WHEAT MITE (*Petrobia latens*) - OKLAHOMA - Averaged 200-400 per linear foot in one barley field and up to 10 per foot in widely scattered wheat fields in Texas County. Most fields checked had none. Occasional in Beaver and Harper Counties. This is first verified report of occurrence in State in past 12 months. (Coppock).

CHINCH BUG (*Blissus leucopterus*) - KANSAS - Abundant in several barley fields, Douglas County. (Gates). ALABAMA - Light on corn, Washington County. (Ruffin).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - NEBRASKA - Average 20 per 100 sweeps in southwest areas. (Andersen). OKLAHOMA - Extremely light in panhandle counties with none in most fields. Average 0-20 per linear foot in scattered fields in 4 northwest counties. (Coppock).

WIREWORMS (*Limonius* spp.) - SOUTH DAKOTA - Up to one per linear foot in spring wheat, Beadle County. (Hantsbarger).

A WHEAT STEM MAGGOT (*Hylemya cerealis*) - COLORADO - Damage reported in Briggsdale area, Weld County. (Ext. Serv.). No adults taken to April 22 in bait traps, Weld County. (Exp. Sta.).

ALFALFA WEEVIL (*Hypera postica*) - NEW JERSEY - Larvae present in southern counties. (Ins.-Dis. Newsl.). DELAWARE - Visible damage due mostly to second and third-instar larvae, Kent and Sussex Counties, averaging 40 per 10 sweeps, Kent County. (MacCreary, Conrad). PENNSYLVANIA - Adults and eggs abundant, larvae increasing in alfalfa in south central areas. (Pepper). VIRGINIA - Damage to alfalfa ranges medium to heavy in most counties where infestations are present. (Morris). NORTH CAROLINA - Ashe County found newly infested. (Jones, Farrier). Unsprayed fields total losses, Union and Wake Counties. (Spyhalski, Farrier). GEORGIA - Light to moderate on alfalfa in Clarke, Jackson, Oconee, Banks, Hart, Washington, Hancock, and Stephens Counties and moderate to heavy in Lincoln, Wilkes, McDuffie, Franklin and Greene Counties. Confirmed by W. H. Anderson and R. E. Warner. (Johnson). COLORADO - Larvae average 3 per 100 sweeps in Mack and Fruita areas, Mesa County. (Colo. Ins. Det. Comm.). IDAHO - Egg laying underway in Idaho Falls area, Bonneville County, and adults becoming active in Moscow area, Latah County. (Manis, Kohl).

AN ALFALFA WEBWORM (*Loxostege* sp.) - PENNSYLVANIA - Averaging about one per alfalfa plant, Mifflin County. (Udine).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - COLORADO - Serious damage locally to alfalfa, particularly new seedlings in Larimer County. Damaging alfalfa in Rio Grande County, numbering 8 per linear foot. (Exp. Sta.). KANSAS - Destructive in several seedling alfalfa fields, Rawlins County. Few fields sprayed to protect remaining plants from further damage. Averaged 4 per

square foot in heaviest infested fields. Only occasional specimens found in old established alfalfa fields. Non-destructive in 7 other northwestern counties. (Matthew). SOUTH DAKOTA - Spotted infestations in alfalfa and small grains in east central and southeast areas average 3 larvae per square yard. (Hantsbarger).

CLOVER HEAD WEEVIL (*Tychius stephensi*) - ALABAMA - Heavy in crimson clover, Autauga, Wilcox and Lowndes Counties, light in Lee County. (S. Hays, Guyton, Grimes).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - DELAWARE - Fairly common on clover, eastern Sussex County. (MacCreary, Conrad).

CLOVER LEAF WEEVIL (*Hypera punctata*) - IDAHO - Larvae common throughout northern alfalfa fields, occasionally averaging 2-3 per crown. Many in late instars in Coeur d'Alene and Post Falls areas, Kootenai County, but predominantly early stages in Sandpoint area, Bonner County, and Bonners Ferry, Boundary County. (Gittins). ILLINOIS - Averaged 6.7 larvae per square foot in the southwest, 4.6 in northwest, 0.5-3.0 in other areas. Maximum in any one field was 22. (Ill. Ins. Rpt.). IOWA - Report 2 larvae per plant in eastern Pottawattamie County. (Iowa Ins. Inf.). VIRGINIA - Larvae averaged 0-60 per 100 sweeps in fields surveyed in southwest areas. Fungus disease beginning to appear in some fields. (Morris).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - IDAHO - Adults common and often abundant in northern red clover and alfalfa fields, reaching 3 per sweep in alfalfa in Bonners Ferry area, Boundary County, and 2 per sweep in many areas of Kootenai and Bonner Counties. Abundant numbers in one 80-acre red clover field partly responsible for 90 percent decline of stand, Boundary County. (Gittins). PENNSYLVANIA - Small numbers of adults on clover in south central areas. (Pepper).

COWPEA APHID (*Aphis medicaginis*) - NEW MEXICO - Light in alfalfa near San Juan, Grant County. (N. Mex. Coop. Rpt.).

CUTWORMS - MISSOURI - Averaged 1-2 half-grown larvae per square yard in red clover, Saline County. Mainly *Feltia subgothica*. (Peters). Much lighter in other legumes and pastures over central and southwest areas. (Kyd, Thomas). KANSAS - No *Agrotis orthogonia* found in any wheat fields examined in northwestern counties, particularly where infestations existed for past two years. (Matthew). UTAH - Injury less than normal. (Knowlton). IDAHO - More common in clover and alfalfa fields than in past 2 years, averaging 1 per square foot in one alfalfa field near Rathdrum, Kootenai County. (Gittins). COLORADO - *A. gladiaria* at 8 per linear foot damaging alfalfa, Rio Grande County. (Exp. Sta.). NEW MEXICO - *A. orthogonia* moderate on late-planted wheat near Clovis, Curry County. (N. Mex. Coop. Rpt.).

A FALSE CHINCH BUG (*Nysius* sp.) - ALABAMA - Large numbers in vetch and bur-clover, Lee County. (Guyton).

GREEN CLOVERWORM (*Plathypena scabra*) - ILLINOIS - Averaged 1 per 100 sweeps in central and west outhwest sections. (Ill. Ins. Rpt.).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - ALABAMA - Becoming more numerous in crimson clover than previously reported. (Guyton). PENNSYLVANIA - Small numbers of adults on clover in south central areas. (Pepper). ILLINOIS - Averaged 11 adults per 100 sweeps in southeast section, with maximum of 50 in any one field. Larvae infested 11 percent of stems in southeast section, 22 percent in southwest section. (Ill. Ins. Rpt.).

PEA APHID (*Macrosiphum pisi*) - DELAWARE - Common on alfalfa statewide, adults collected, Kent and Sussex Counties. (MacCreary, Conrad). PENNSYLVANIA - Heavy

in one field of alfalfa, Franklin County. (Pepper). VIRGINIA - Heavy on alfalfa in Antioch community, Fluvanna County (Smith) and medium on alfalfa in Nelson County (Swain). GEORGIA - Moderate to heavy in alfalfa in 13 northern counties. (Johnson). ALABAMA - Very heavy in vetch and crimson clover, Wilcox and Lowndes Counties. (Grimes). ARKANSAS - Averaged 500-1000 per 10 sweeps in Hope area, Hempstead County. (Boyer). ILLINOIS - Averaged 7,937 per 100 sweeps in southwest, 3,553 in southeast, 0-130 in remainder of State. (Ill. Ins. Rpt.). MISSOURI - Continues slow increase over most of State but remains below economic levels. Disease and predators slightly increased. (Kyd, Thomas). WISCONSIN - Numbers of stem-mothers indicate most overwintering eggs may have hatched and now appear to furnish greater potential than same period in 1957 if conditions are favorable. (Wis. Coop. Sur.). SOUTH DAKOTA - Averaged 1-3 per 10 sweeps in alfalfa in east central and southeast areas. (Hantsbarger). KANSAS - Approximately 6 per 25 sweeps in few alfalfa fields in 8 northwest and 3 north central counties. (Matthew). Non-economic to light in nearly all alfalfa fields in Kansas River Valley. (Gates). OKLAHOMA - Averaged 75-500 per 10 sweeps from alfalfa in Alfalfa County, lighter in adjacent counties. Very light in panhandle counties. (Coppock). TEXAS - Medium on alfalfa, Wharton County. (Garner). Ranged 5-25 per sweep in vetch, Kaufman County. (Randolph). UTAH - Common in alfalfa generally throughout State. (Knowlton). IDAHO - Common in all alfalfa and clover fields sampled in northern counties, adults averaging 3 per sweep in alfalfa. (Gittins). COLORADO - First of season reported in alfalfa in Mack and Fruita areas, Mesa County. (Exp. Sta.) NEW MEXICO - Light to moderate in most alfalfa fields in southern counties. (N. Mex. Coop. Rpt.). OREGON - Building up in Willamette Valley legumes with 10-15 per sweep not uncommon. (Capizzi).

PEA LEAF WEEVIL (*Sitona lineata*) - OREGON - Extensive surveys in Willamette Valley disclosed Linn and Lane Counties are infested. Benton County infested entire length along north-south highway 99W. No economic damage to legumes in these counties, but second-generation adult buildup in mid-summer expected to be serious threat. (Capizzi).

PLANT BUGS - PENNSYLVANIA - *Lygus lineolaris* abundant on alfalfa and clover in south central areas. (Pepper). ALABAMA - Light numbers of *L. lineolaris* in crimson clover, Lee County. (Guyton). ILLINOIS - *L. lineolaris* adults averaged 22-24 per 100 sweeps in southwest, southeast and east sections and *Adelphocoris* spp. nymphs 6 per 100 sweeps in southeast section. (Ill. Ins. Rpt.) KANSAS - *L. lineolaris* averaged 3-8 per 25 sweeps in all alfalfa and wheat fields surveyed in 8 northwestern counties and 4-16 in 3 north central counties. Few nymphs were observed in Osborne and Mitchell Counties. (Matthew). NEBRASKA - Continue to build up in southeast areas, averaging 65 per 100 sweeps. (Andersen). SOUTH DAKOTA - *Lygus* spp. averaged up to one per 10 sweeps in alfalfa in east central and southeast areas. (Hantsbarger). UTAH - Present in alfalfa and numerous on weed hosts generally. (Knowlton). IDAHO - *Lygus* spp. seldom exceeded one adult per sweep in all alfalfa and clover fields sampled in 4 northern counties. *L. hesperus* most commonly encountered species. (Gittins). NEW MEXICO - Adults in alfalfa fields numerous in 5 southern counties. Nymphs becoming very abundant. (N. Mex. Coop. Rpt.).

POTATO LEAFHOPPER (*Empoasca fabae*) - KANSAS - None found in any alfalfa fields examined in 8 northwestern and 3 north central counties. (Matthew).

SPIDER MITES - ALABAMA - Damage to leaves of crimson clover noticeable, Lee County. (Guyton).

SPITTLEBUGS - MASSACHUSETTS - *Philaenus leucophthalmus* hatched at Amherst, Hampshire County, April 23, subsequent development slow due to detrimental weather. (Lavigne). DELAWARE - *P. leucophthalmus* common on dandelion in alfalfa field edges, Kent County. (MacCreary, Conrad). VIRGINIA - *P. leucophthalmus* ranged 1-100 per 100 sweeps in southwest fields. (Morris).

ILLINOIS - *P. leucophthalmus* averaged 17 nymphs per 100 stems in southeast with hatch complete, 32 in northeast and 21 in northwest with hatch incomplete. (Ill. Ins. Rpt.). IDAHO - Second and third-instar nymphs feeding on Klamathweed and sweetclover, Kootenai and Nez Perce Counties. (Barr).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - KANSAS - None found in alfalfa fields examined in 8 northwest and 3 north central counties. In south central areas populations remain low and show little increase. (Matthew). NEW MEXICO - Very light to moderate in Roosevelt, De Baca and Hidalgo Counties, heavy and spotty in Luna, Chaves, Eddy and Dona Ana Counties. (N. Mex. Coop. Rpt.). ILLINOIS - None found. (Ill. Ins. Rpt.). OKLAHOMA - Averaged 0-30 per 10 sweeps in northwestern and panhandle counties and 175 per 10 sweeps in 2 alfalfa fields in Woodward County. (Coppock).

SWEETCLOVER APHID (*Myzocallidium riehmii*) - ILLINOIS - Averaged 20 per 100 sweeps in one field in southwest section. (Ill. Ins. Rpt.).

SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - IOWA - Average 2-5 per plant. Adults working heavily in new seedlings of sweetclover. (Iowa Ins. Inf.). MINNESOTA - Damaging new shoots of overwintered sweetclover, most abundant in field margins. (Minn. Ins. Rpt.). NEBRASKA - Remain heavy, 6-8 per 10 crown samples, in southeast sweetclover fields. (Andersen). NORTH DAKOTA - Adults active and feeding on new growth of sweetclover in eastern areas. (N. D. Ins. Rpt.). IDAHO - Heavy feeding damage from exceedingly abundant adults in one 80-acre field of sweetclover mainly responsible for a 50 percent decline in stand near Bonners Ferry, Boundary County. (Gittins). UTAH - Active in Cache County. (Knowlton).

THRIPS - NEW MEXICO - Building up rapidly in seedling alfalfa near Las Cruces, Dona Ana County. (N. Mex. Coop. Rpt.).

VETCH BRUCHID (*Bruchus brachialis*) - ALABAMA - Heavy on vetch, Lee County. (Guyton). TEXAS - Averaged 2 per 5 sweeps in vetch in Hunt County (Hawkins) and about the same in Kaufman County (Randolph). OREGON - First adults of season noted in Willamette Valley April 28. (Capizzi).

YELLOW CLOVER APHID (*Therioaphis trifolii*) - ILLINOIS - Averaged 65 per 100 sweeps in southwest section. (Ill. Ins. Rpt.).

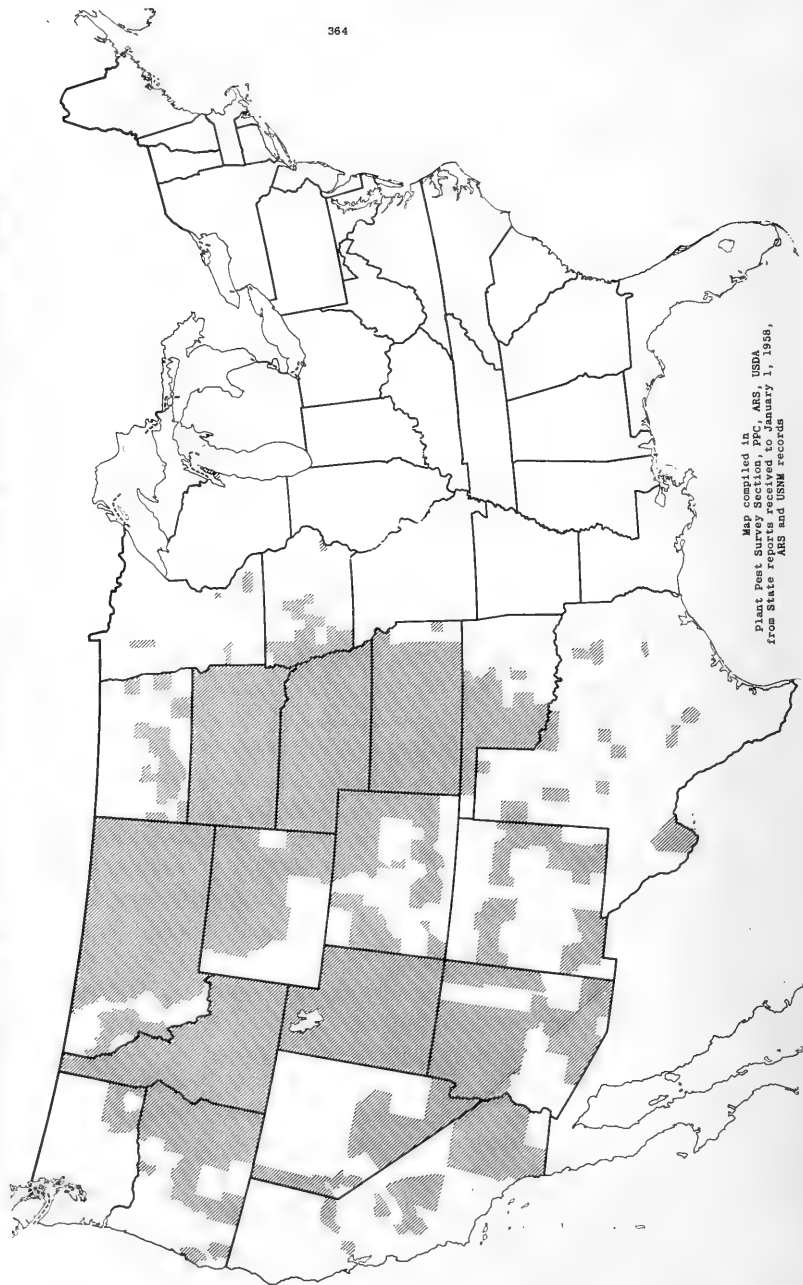
YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - ALABAMA - Light infestations of late instar larvae in crimson clover and oats, Lee and Baldwin Counties. (Grimes, Guyton).

CORRECTIONS

CEIR 8(17):317 GRASSHOPPERS - ARIZONA - *Trimeritropis* should read *Trimerotropis*.

CEIR 8(17):321 CLOVER MITE - NEW MEXICO - Should read, "Larvae very abundant in orchards not sprayed with dormant sprays."

DISTRIBUTION OF ARMY CUTWORM (*CHORIZAGROTIS AUXILIARIS*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA
from State reports received to January 1, 1968,
ARS and USNM records

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*)- INDIANA- Pupating in warm parts of packing sheds at Orleans. Some emergence expected by May 10. (Marshall). About 25 percent pupated by April 28 at Vincennes. (Hamilton). ILLINOIS - Pupation well underway as far north as Belleville. (Meyer).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*)- INDIANA - Adults continue to lay eggs at Vincennes, None hatched to April 29. (Hamilton). NEW JERSEY - Adults active, no larvae observed. (Ins. Dis. Newsl.). ILLINOIS - Hatching April 27 at Carbondale, New eggs masses still being found. (Meyer). DELAWARE - Eggs began hatching prior to April 29. (MacCreary, Conrad).

EYE-SPOTTED BUD MOTH (*Spilota ocellana*) - IDAHO - Hatching in Moscow area; first and second instars present. Damage to developing apple buds minor. (Manis).

FRUIT TREE LEAF ROLLER (*Archips argyrospila*) - IDAHO - Hatching occurred and first to second instar larvae present on apples in Moscow area. Damage is minor. (Manis).

APHIDS - INDIANA - *Anuraphis roseus* and *Rhopalosiphum fitchii* infestations increasing rapidly on apples at Orleans. (Marshall). MISSOURI - Few *Aphis pomi* reported last week. (Wkly. Rpt. Fr. Grow., May 10). UTAH - *Myzus persicae* present on peach trees at Fillmore and Kanosh. (Rickenback). ALABAMA - Large numbers of *Eriosoma lanigerum* and *A. roseus* on apple trees in Lee County. *A. pomi* rather scarce. (Guyton). NEW MEXICO - Extremely heavy populations of *M. persicae* curling peach leaves at Faywood, Grant County. Moderate to heavy infestations on peach trees throughout Dona Ana County. Heavy infestations of *E. lanigerum* on apple trees near Sherman, and spotty infestations along Mimbres River in Grant County. (N.Mex. Coop. Rpt.). DELAWARE - *A. roseus* collected in New Castle County, May 1. (MacCreary, Conrad).

CATFACING INSECTS - INDIANA - Period of greatest damage by *Lygus lineolaris* about over at Orleans. Stink bugs, principally *Euschistus servus euschistoides* & *E. tristigmus* present in peach orchards at Orleans, greatest damage by these species should occur within next 10 days. *Acrosternum hilare* should appear within next week and injury should increase rapidly thereafter. (Marshall, Apr. 29). Only few *L. lineolaris* remain in peach orchards at Vincennes. Peak activity occurred week of April 14. Populations of stink bugs continue to be light in peach orchards. Increase likely with warm weather. (Hamilton). ILLINOIS - Populations of stink bugs expected to increase rapidly at Carbondale. *L. lineolaris* still present on peaches. (Meyer). MISSOURI - Stink bugs active in southeastern area. (Wkly. Rpt. Fr. Grow.).

LESSER PEACH TREE BORER (*Synanthedon pictipes*)- TEXAS - Light infestation on peaches in Anderson County. (Showers).

RED-LEGGED FLEA BEETLE (*Derocrepis erythropus*) - PENNSYLVANIA - Numerous and causing damage to peach in Berks County. (Menusan, Apr. 22).

EUROPEAN RED MITE (*Panonychus ulmi*)- MASSACHUSETTS - Eggs hatching. (Crop Pest Cont. Mess.). INDIANA - Hatching slow at Orleans. (Marshall). Populations relatively light at Vincennes, April 29. (Hamilton). DELAWARE - Overwintering eggs hatched in Kent County by April 25. (MacCreary, Conrad). IDAHO - Hatching begun on apple trees in Moscow area. (Manis).

CLOVER MITE (*Bryobia praetiosa* complex) - UTAH - Half grown or larger in orchards in Weber and Davis Counties. (Davis). NEW MEXICO - Light infestations on apple trees near Cliff and Faywood, Grant County, causing some damage to foliage. (N. Mex. Coop. Rpt.).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - UTAH - Conspicuous in apples and pears, few Utah County orchards. (Knowlton).

PLUM CURCULIO (*Conotrachelus nenuphar*) - INDIANA - Damage should increase rapidly on peaches at Orleans. (Marshall). Populations very light in commercial orchards at Vincennes. Peak activity not reached yet. (Hamilton). ILLINOIS - Emergence expected to increase rapidly with warm weather. (Meyer). GEORGIA - First larva of season found in orchard on April 24. Larva was 2-3 days old when found. Adults now depositing eggs in recently exposed peaches. (Snapp, Apr. 25).

PECAN LEAF CASEBEARER (*Acrobasis junlandis*) - TEXAS - Feeding on pecan leaves in Brazos County. (Randolph). ALABAMA - Causing considerable damage to pecan foliage in Baldwin County. Infestations light in northern part of county. (Wilson, Grimes).

A SAWFLY - TEXAS - Feeding on pecan in Brazos County. (Randolph).

SCALES - NEW MEXICO - Light infestation of scales, probably *Lecanium* spp., on pecan trees near Mesilla, Dona Ana County. (N. Mex. Coop. Rpt.).

TRUCK CROP INSECTS

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - ALABAMA - Causing serious damage to turnips in Baldwin County. (Grimes).

TURNIP APHID (*Rhopalosiphum pseudobrassicae*) - ALABAMA - Completely destroyed 3-acre field of turnips in Baldwin County. (Grimes).

IMPORTED CABBAGEWORM (*Pieris rapae*) - ALABAMA - Causing serious damage to cabbage in Baldwin County. (Grimes).

CABBAGE MAGGOT (*Hylemya brassicae*) - MASSACHUSETTS - Eggs found in Bristol County April 25, also present in Taunton area. (Crop Pest Cont. Mess.). NEW JERSEY - Adults active. (Ins. Dis. Newsl.).

CABBAGE APHID (*Brevicoryne brassicae*) - ALABAMA - Very prevalent on cabbage in Baldwin County. (Grimes).

CUCUMBER BEETLES - GEORGIA - Light to moderate infestations of *Acalymma vittata* on cucumbers and watermelons in Tattnall County. (Johnson). NEW MEXICO - *Diabrotica* spp. and *Acalymma* spp. damaging young cantaloups and melons at Virden, Hidalgo County. *Diabrotica* spp. damaging lettuce near Los Lunas, Valencia County. (N. Mex. Coop. Rpt.).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - GEORGIA - Light to moderate infestations on cucumbers and watermelons in Tattnall County. (Johnson). ALABAMA - Causing damage to beans in Baldwin County. (Grimes).

TOMATOWORMS - TEXAS - *Heliothis zea* and *Protoparce* sp. infestations increasing in lower Rio Grande Valley, *Protoparce* sp. with greatest increase in Mission area. (Deer). *Protoparce quinque maculata* infesting tomatoes in Winter Haven area. (Harding).

SPIDER MITES - TEXAS - Causing most damage to tomatoes in lower Rio Grande Valley. (Deer).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - GEORGIA - Light infestations of adults and larvae on tomatoes in Tattnall County. (Johnson).

A LEAF MINER (Liriomyza guytoni)- ALABAMA - Light infestation on tomato leaves in Lee County. (Guyton).

WIREWORMS - OKLAHOMA - Continues to damage potatoes in Bixby area. (Walton, Arbuthnot).

ASPARAGUS BEETLES (Crioceris spp.) - NEW JERSEY - Present in considerable numbers. (Ins. Dis. News1.). DELAWARE - C. asparagi depositing eggs on asparagus spears in Kent County. (MacCreary, Conrad).

THRIPS - NEW MEXICO - Moderate infestations on lettuce near Los Lunas, Valencia County, and Las Cruces, Dona Ana County. Building up considerably on onions throughout Dona Ana County. From 80-85 percent population were Frankliniella occidentalis; others Thrips tabaci. (N. Mex. Coop. Rpt.).

CABBAGE LOPPER (Trichoplusia ni)- NEVADA - Adults very numerous and attracted to lights in Las Vegas area, Clark County. (Lauderdale, April 25). NEW MEXICO - Eggs very abundant on about 600 acres of lettuce in Bernalillo County; no larvae found. Moderate number of eggs on about 400 acres of lettuce in Valencia County; some young larvae. Continues to be problem in lettuce fields in Dona Ana County. (N. Mex. Coop. Rpt.).

LEAFHOPPERS - NEW MEXICO - Buildup of leafhoppers, probably Empoasca abrupta, in lettuce in Dona Ana and Eddy Counties. (N. Mex. Coop. Rpt.)

LYGUS BUGS - OREGON - Abundant enough to cause damage to young sugarbeets in Hermiston area. Three fields averaged 1.2 per linear foot of row May 1. (Capizzi). ALABAMA - Light numbers of Lygus lineolaris on squash in Baldwin County. (Grimes).

BEET LEAFHOPPER (Circulifer tenellus) - OREGON - Populations in Hermiston area May 1 average 1-2 adults per linear foot of row. Beets in 4-6 leaf stage. (Capizzi).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - High population potential exists in the San Luis Valley where overwintering forms average up to several hundred per square foot. Disease and parasites may reduce the population. (Exp. Sta.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Moderate to heavy infestations on beans and field peas in Tattnell County. (Johnson). ALABAMA - Becoming prevalent on beans in Baldwin County. (Grimes).

STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) - KANSAS - Emergence beginning in northeastern counties during week of April 22. (Eshbaugh). INDIANA - Pupation begun at Orleans. (Marshall).

STRAWBERRY WEEVIL (Anthonomus signatus) - DELAWARE - Common and damaging strawberries in southern Sussex County. (MacCreary, Conrad). VIRGINIA - Light on strawberries some areas in Accomack County. No severe damage reported. (Rogers).

TARNISHED PLANT BUG (Lygus lineolaris) - IOWA - Seriously damaging strawberry fruit and foliage in conjunction with slugs. (Iowa Ins. Inf.).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - NORTH CAROLINA - Light damage some plant beds in Granville County. (Chamberlin). Present in Hertford County. (Ballentine, Weisman). VIRGINIA - Damage very light to light to tobacco plants around margins of tobacco plant beds in Chatham area of Pittsylvania County. (Dominick). FLORIDA - Adults averaged 7 per tobacco plant on 200 inspected in plant bed at Quincy, Gadsden County. (Tappan, Mar. 27).

CUTWORMS - FLORIDA - Causing moderate damage to newly-set tobacco in the shades. (Tappan).

BUDWORMS (*Heliothis* spp.) - GEORGIA - Moderate infestations on tobacco in Bulloch, Evans, Tattnall and Candler Counties. (Johnson).

GREEN PEACH APHID (*Myzus persicae*) - FLORIDA - Averaged 10 per plant on 300 tobacco plants inspected in beds at Havana, Gadsden County. Potential still as great in 1958 as in previous years. (Tappan, Mar. 20).

SPRINGTAILS - NORTH CAROLINA - Many *Achorutes armatus*, few *Pseudachorutes saxatilis* and *Priostoma constricta*, present locally on tobacco plant beds in Alamance County. No evidence of damage. (Dodson, Wray).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - GEORGIA - First adults trapped on tanglefoot at Tifton, Tift County. (Morgan). TEXAS - Winter survival from hibernation cages at Waco was 1.8 percent, compared with 0.66 in 1957 for the same date. (Parenica, et al., May 2).

COTTON APHID (*Aphis gossypii*) - TEXAS - Infesting cotton in 2 to 4-leaf stage, Wharton County. (Cason). Few observed in Brazos River bottom, Burleson County. (Turney). On seedlings in all fields inspected, McLennan and Falls Counties. (Parenica et al.).

COTTON FLEAHOPPER (*Psallus seriatus*)- TEXAS - Seasonal emergence in hibernation cages was 7,119 at Waco, compared with 21,212 for same date in 1957. (Parenica et al., May 2).

GARDEN SPRINGTAIL (*Bourletiella hortensis*)- NORTH CAROLINA - Injuring cotton locally, Hertford County, and reported from other localities in Coastal Plain. (Ballentine, et al.).

SPIDER MITES - TEXAS - On seedlings along edges of some fields, McLennan and Falls Counties. (Parenica et al., May 2).

THRIPS - NEW MEXICO - Beginning to build up in Dona Ana County. (N. Mex. Coop. Rpt.).

Cotton Insects in Lower Rio Grande Valley, Texas: FLEAHOPPERS increasing throughout the Valley, heaviest in Citrus City, McCook, Hargill, Raymondville and Lyford areas with as many as 100 per 100 terminals. SPIDER MITES increasing in many fields, greatest in San Benito, Los Fresnos and Brownsville areas. Some THRIPS reported in the Brownsville area. BOLLWORMS causing some terminal damage in widely scattered fields. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

- BARK BEETLES - TEXAS - Pityophthorus spp. and Ips spp. caused mortality of merchantable pine in eastern Trinity County, during March. (Young).
- BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Heavy on juniper in Purcell area, McClain County. (Coppock, Vick).
- BIRCH LEAF MINER (Fenusa pusilla) - OREGON - Adults emerging in Portland area, Multnomah County. (Nicollasson, April 30).
- BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - TEXAS - Heavy infestation north of Honey Island, Hardin County, during March. (Young).
- GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Eggs hatching in Luzerne County, April 28. (Nichols).
- PALES WEEVIL (Hylobius pales) - PENNSYLVANIA - Adults feeding on pines in Schuylkill County. (Menusan).
- PINE BARK APHID (Pineus strobi) - PENNSYLVANIA - Numbers increasing on pine in southeastern areas. (Menusan).
- PINE SAWFLIES (Neodiprion spp.) - ARKANSAS - Few specimens of Neodiprion sp. feeding on shortleaf pine in Perry County are first sawfly record for county. Second and third instar larvae of N. taedae linearis in Warren area, Bradley County. No larvae of N. virginiana complex found in El Dorado area, Union County, where it was an active feeder in fall of 1957. Live pupae found in leaf trash under 1957 host trees. (Boyer). NEW JERSEY - Active in Warren County. (Ins.-Dis. Newsl.).
- TENT CATERPILLARS (Malacosoma spp.) - UTAH - Small larvae in shade trees in northern localities. (Knowlton). ARKANSAS - Single specimens of M. disstria collected in Drew and Ouachita Counties are only records since 1949. M. americanum common in most areas of State. (Boyer). NEW JERSEY - Causing some concern over State. (Ins.-Dis. Newsl.). NORTH CAROLINA - Local on maple, elm and wild cherry throughout Coastal Plain and Piedmont areas. (Scott, Farrier). OKLAHOMA - M. americanum statewide in native plums with severe damage in some western counties. (Coppock). TEXAS - Larvae developing throughout eastern hardwoods. (Young). ALABAMA - M. americanum causing light damage to shade trees, Madison County. (Ruffin). M. disstria heavy in wooded areas of Baldwin and Mobile Counties, few on oak trees in Wilcox and Lowndes Counties. (Hyche, Grimes).
- TIP MOTHS - TEXAS - Adults emerging throughout eastern areas during March. (Young).
- APHIDS - NEVADA - Increasing rapidly on plants and shrubs in home gardens in Reno-Sparks area, Washoe County. (Lauderdale, April 25). NEW MEXICO - Macrosiphum rosae extremely heavy on roses in Dona Ana, Luna, Hidalgo and Grant Counties. (N. Mex. Coop. Rpt.).
- AZALEA LACE BUG (Stephanitis pyrioides) - ALABAMA - Adults and nymphs causing considerable damage to azaleas in Lee County. (Guyton).
- HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma) - OKLAHOMA - Common on hackberry in Platte National Park. (Coppock, Vick).
- ORANGE TORTRIX (Argyrotaenia citrana) - OREGON - Occasional mature larvae feeding in developing holly leaves, April 27. (Larson).

INSECTS AFFECTING MAN AND ANIMALS

AMERICAN DOG TICK (Dermacentor variabilis) - NEW JERSEY - Active in central areas of the State. (Ins.-Dis. Newsl.).

CATTLE GRUBS (Hypoderma spp.) - OKLAHOMA - Adults annoying cattle in northwest and panhandle counties. (Coppock).

HORN FLY (Siphona irritans) - OKLAHOMA - Average 50-500 per mature cow in northwest counties, lighter in panhandle counties. (Coppock).

SECONDARY SCREW-WORM (Callitroga macellaria) - KANSAS - Activity reported from Chase, Kingman, Harper, Pawnee and Clay Counties. (Ratcliff).

SALT-MARSH MOSQUITO (Aedes sollicitans) - NORTH CAROLINA - Heavy in 6 coastal counties. (Ashton).

BENEFICIAL INSECTS

PREDATORS - ARKANSAS - Building up slowly in most areas. Lady beetle larvae average 15 per 10 sweeps in Hope area, Hempstead County. (Boyer). OKLAHOMA - Nabis spp. averaged 0-4 per 10 sweeps in most northwest alfalfa fields. (Coppock). S. DAK. - Nabis spp. average 1 per 10 sweeps in central area winter wheat fields and Hippodamia tridecimpunctata and H. convergens one per 10 sweeps in alfalfa in southeast and east central areas. (Hantsbarger). ILLINOIS - Lady beetles averaged 11 and 13 per 100 sweeps in southeast and southwest areas. Damsel bugs averaged 16 per 100 sweeps in southeast section. (Ill. Ins. Rpt.).

A KLAMATHWEED BEETLE (Chrysolina gemellata) - IDAHO - Active on Klamathweed in Clearwater drainage area. (Barr).

MISCELLANEOUS INSECTS

BROWN STINK BUG (Euschistus servus) - GEORGIA - Present at Tifton, Tift County. (Morgan, April 22).

CARROT BEETLE (Ligyris gibbosus) - NEBRASKA - Very abundant in light trap at Lincoln, Lancaster County. (Andersen).

CLOVER MITE (Bryobia praetiosa complex) - UTAH - Some home infestations very heavy and troublesome in northern and central areas. (Knowlton). NEW JERSEY - Very numerous. (Ins.-Dis. Newsl.).

PAINTED-LADY (Vanessa cardui) - NEVADA - Migrations heavy in areas of Ormsby, Churchill and Pershing Counties. (Nev. Coop. Rpt., April 25). UTAH - Migration conspicuous in northern and central areas, with heavy flights sometimes noted. (Knowlton).

TERMITES (Reticulitermes spp.) - NEW JERSEY - Still swarming in many areas. (Ins.-Dis. Newsl.).

WHITE-LINED SPHINX (Celerio lineata) - NEVADA - Adults very numerous and attracted to light in Las Vegas area, Clark County. (Lauderdale, April 25).

ADDITIONAL NOTES

CALIFORNIA - PEA APHID light on alfalfa in Orland, Glenn County. GREEN PEACH APHID medium on alfalfa in Williams area, Colusa County. CLOVER LEAF WEEVIL medium on alfalfa in Montague area, Siskiyou County. *Macrosiphum dirhodum* medium on barley Walnut area, Los Angeles County. DEVASTATING GRASSHOPPER on alfalfa light in Imperial area, medium Seeley and Winterhaven areas and heavy in Calexico-Holtville areas of Imperial County. A THRIPS reported from alfalfa as medium in Lodoga area and heavy in Maxwell area of Colusa County and medium in Lancaster area of Los Angeles County. Medium infestation of CORN EARWORM damaging safflower in College City area, Colusa County. CALIFORNIA PEAR-SLUG medium on pear trees at Grass Valley, Nevada County, and a BAGWORM was reported as medium on twigs of young pear trees at same locality. WHITE-LINED SPHINX heavy on Borrego Springs area grapes. MEALY PLUM APHID heavy on prune at La Mesa, San Diego County. BLACK SCALE medium on olive in Maxwell, Colusa County, and heavy on pear in Butte City area, Glenn County. SAN JOSE SCALE heavy on pears at same locality. PEAR PSYLLA reported for first time from Santa Cruz County as medium on pear. SUGAR-BEET WIREWORM continuing to damage commercial onions at La Puente, Los Angeles County. CABBAGE LOOPER building up in cabbage in San Fernando Valley and light in Orange County cabbage. BEET LEAFHOPPER increasing in Maricopa-Taft areas of Kern County, averaging 10-35 per 10 sweeps, 25 percent being spring adults. Control spraying begun April 21. No noticeable change in other areas. SPRUCE SPIDER MITE heavy on Monterey pine at San Pablo, Contra Costa County. FRUIT TREE LEAF ROLLER medium on ash trees in Orland, Glenn County. APPLE GRAIN APHID medium on black acacia at Santa Cruz Santa Cruz County. *Culiseta inornata* widespread in most parts of State. *Culex tarsalis* present in substantial numbers in extreme southwest and in San Joaquin Valley, where *Aedes nigromaculis* is appearing in relatively small numbers. (Cal. Coop. Rpt.).

IDAHO - ALFALFA WEEVIL adults and larvae less than one per sweep, Canyon County. Overwintering adults of CABBAGE SEEDPOD WEEVIL active and abundant on volunteer stands of rape. CLOVER LEAF WEEVIL pupating in southwestern areas. Adults of CLOVER ROOT CURCULIO common in all alfalfa fields sampled in Latah and Nez Perce-Counties occasionally reaching 4 per sweep. LADY BEETLE adults average 10 per 20 sweeps in most alfalfa fields. Common and often abundant on alfalfa and clover fields sampled, Nez Perce and Latah Counties, occasionally reaching 7 per sweep some fields sampled. LYGUS BUGS average one per sweep in Arena Valley alfalfa. PEA APHID 5 per sweep in Canyon County alfalfa. Light in some fields sampled in Nez Perce County and apparently absent in others sampled in Nez Perce and Latah Counties. (Waters, Manis, Gittins).

NEW YORK - EUROPEAN RED MITE hatching in Orange and Ulster Counties. Average 1-2 per leaf in several blocks examined in Rockland County. TWO-SPOTTED SPIDER MITE plentiful on several strawberry fields in Monsey area, Bockland County. ROSEY APPLE APHID curling leaves in unsprayed blocks examined in Ulster County. CORN FLEA BEETLE present but scarce in Hudson Valley CABBAGE MAGGOT adults laying eggs in Nassau County. ALFALFA WEEVIL readily collected in Hudson Valley, larvae feeding on aflalfa buds, Nassau County and larvae and adults were collected in Orange County. PEA APHID averaged 1-10 per sweep in Orange County and are present in most legume fields throughout the State. (N. Y. Wkly. Rpt.).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Felt. subt.	Eueth. rugic.	Perid. marg.	Prod. ornith.	Heliothis zea vires.
ALABAMA (County)							
Lee 4/26-5/3	52	11		599			8
ARKANSAS							
Fayetteville 4/13-26	20	12			11		
Hope 4/21-23	9	1			5		1
Stuttgart 4/10-23	183	12			3		
ILLINOIS							
Urbana	82	9			15		
LOUISIANA							
Baton Rouge 4/24-30	2	21	17	29	5		
Franklin 4/24-30	1	3	4	10	6	3	
MISSISSIPPI							
Grenada 4/28-5/2	16	3					
Senatobia 4/22-25	40	9					1
*Stoneville 4/26-5/2	78	13	6		24	26	3 12
MISSOURI							
Sikeston 4/15-30	149	6			95		
NEBRASKA							
North Platte 4/20-27					7		
SOUTH CAROLINA							
Clemson 4/26-5/2	26	3		3	2	11	1
SOUTH DAKOTA							
Brookings 5/2	2						
TENNESSEE (Counties)							
Blount 4/22-28	53	4			11	13	
Cumberland	14	6			16	3	
Greene	15	1			4	2	
Johnson	65	8			9	4	
Madison	33	4			11	3	
Maury	170	10			18	7	
Robertson	24	3			10	3	
TEXAS							
Brownsville 4/23-25	4		32		4	2	
Weslaco 4/1-15	199	139	235		222	30	54 19
Winter Haven 4/28		31	18		84	27	21

*Four traps Stoneville

SUMMARY OF INSECT CONDITIONS - 1957

TENNESSEE

Prepared by R. P. Mullett

Cereal and Forage Insects: ARMYWORM (Pseudaletia unipuncta) appeared in numbers in several areas of the State in early May. When the larvae were first found, they were quite small. In a week or ten days they disappeared and caused no damage during 1957. This was apparently due to a hot, dry period in April which resulted in high parasite populations. SUGARCANE BEETLE (Eutheola rugiceps), which has been quite destructive in the past three or four years, was present in only one or two isolated areas in 1957. FALL ARMYWORM (Laphygma frugiperda) was widespread in corn over the State, appearing early in the summer and causing heavy damage in some areas. Control was widespread generally. MEADOW SPITTLEBUG (Philaenus leucophthalmus) was heavy in alfalfa and clover in isolated areas and higher altitudes in the eastern third of the State. SPOTTED ALFALFA APHID (Therioaphis maculata) occurred throughout the State in very small numbers, with no outbreaks or damage being reported. Scattered infestations of GREEN JUNE BEETLE (Cotinis nitida) larvae caused some replanting of corn locally. SORGHUM WEBWORM (Celama sorghiella) was not as heavy as in past years but caused scattered damage in western areas.

Cotton Insects: BOLL WEEVIL (Anthonomus grandis) averaged 240 per acre to start the season. Scattered infestations were confined to the southern third of west Tennessee. A very rainy season caused a wide distribution and rapid buildup resulted in eventual heavy infestations. The weevil appeared in extreme northwestern counties in sufficient numbers to cause damage for the first time since 1923. Widespread control efforts were underway in infested areas all during the season, resulting in a saving of \$25,000,000. Losses were estimated at \$10,000,000. COTTON LEAFWORM (Alabama argillacea) appeared in large numbers over the western third of the State and widespread controls were applied.

Truck Crop Insects: Normal numbers of the common vegetable insects were present over the State in 1957. Heavy infestations of STRAWBERRY LEAF ROLLERS occurred across the State. Isolated infestations of STRAWBERRY CROWN MINER (Aristotelia fragariae) appeared in extreme eastern parts of the State. Heavy infestations of A STRAWBERRY ROOTWORM (Paria sp.) were scattered.

Tobacco Insects: TOBACCO BUDWORM (Heliothis virescens) was the most serious pest of tobacco but was kept fairly well under control. HORNWORMS (Protoparce sp.) were low in numbers and caused little damage. TOBACCO FLEA BEETLE (Epitrix hirtipennis) was prevalent in tobacco plant beds at the outset of the season.

Tree and Shrubbery Insects: Large numbers of ELM LEAF BEETLE (Galerucella xanthomelaena) were prevalent over the State. LOCUST LEAF MINER (Chalepus dorsalis) and MIMOSA WEBWORM (Homadaula albizziae) were generally less severe than in previous years. Heavy infestations of BAGWORM (Thyridopteryx ephemeraeformis) were present on evergreens across the State. A SPITTLEBUG (Aphrophora sp.) occurred on pines at high altitudes in the eastern third of the State. Brood XIV of PERIODICAL CICADA (Magicicada septendecim) appeared in heavy numbers in counties with higher altitudes in the eastern half of the State. Few EASTERN TENT CATERPILLAR (Malacosoma americanum) were present in 1957.

Cattle Pests: CATTLE LICE were prevalent over the State and SHEEP KED was also present.

Household Insects: FLEAS were extremely numerous around homes across the State and BOXELDER BUGS, CLOVER MITES and ELM LEAF BEETLES were prevalent. TERMITE infestations increased over previous years. Isolated cases of SPRINGTAILS around homes were noted.

Miscellaneous Insects: Heavy infestations of WHITE GRUBS (Phyllophaga spp.) occurred in yards particularly in middle portions of the State. Because of widespread publicity given IMPORTED FIRE ANT (Solenopsis saevissima richteri) large numbers of ant specimens were received for identification, but no positive determinations were made from the State.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

CELERY FLY (Acidia heraclei L.)

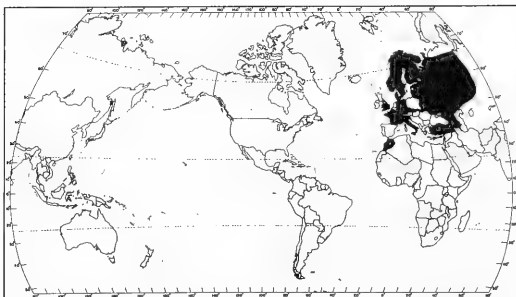
Economic Importance: This tephritid is a well-known pest in the British Isles and on the European Continent. The Larvae mine the leaves of celery and parsnip, frequently causing great reduction in the value of the crop. In severe attacks, from 90 to 100 percent of the leaves in a bed of celery may be infested. In such cases, The crop is entirely worthless. The larvae live between the epidermal layers of the leaf, making blister-like patches, which at first are pale but later turn brown. The infested leaf contracts and after a short period shrivels up. The loss of leaves produces small, green, bitter flavored celery. Parsnip foliage is infested in the same manner and when badly attacked, the roots of the plant are small. The pest has been erroneously recorded in the United States.



Damage to Celery

Distribution: Occurs generally in Europe, with records in England, Wales, Cyprus, Czechoslovakia, Denmark, France, Finland, Italy, Germany, Norway, Sweden, Switzerland and USSR; has also been recorded in the literature from Morocco, North Africa and Asia Minor.

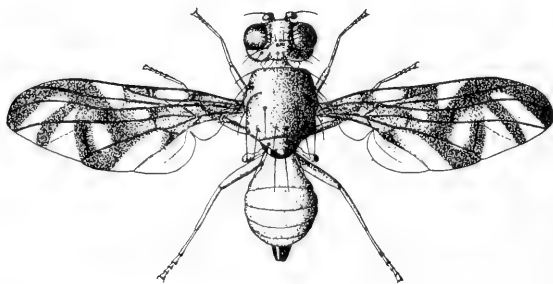
Hosts: Celery and parsnip are the chief cultivated hosts. Various species of Heracleum and Angelica are the most important wild host plants.



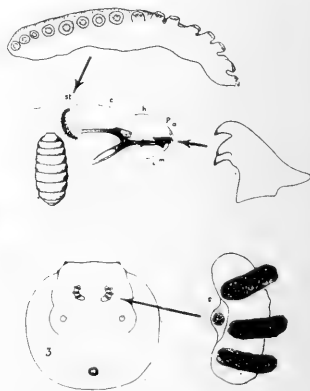
General Distribution of Celery Fly

Life History and Habits: In England, there are two main generations a year, with a possible third, but there is considerable overlapping between broods, therefore adults, larvae and pupae may occur simultaneously. The first adults usually appear from April to early June and the second brood from July onwards. The adults emerge from overwintering puparia in the soil. Eggs are usually deposited singly on the undersurface of the leaf, but sometimes on the upper surface, and hatch in 6 to 14 days. Females deposit up to 100 eggs each. The larva matures in 14 to 19 days within the leaf surface, and pupates either within the leaf or falls and pupates in the soil. In the summer, flies emerge from puparia in 3 to 4 weeks, however, the second-brood maggots may remain in puparia until the next spring. The young larvae live gregariously and may occupy a considerable area in the leaf. Larvae may occasionally be found as late as December in England.

Description: The adult male is variable in color, ranging from light brown to black. Eyes deep green, sometimes tinged with red, widely separated in both sexes. Antennae pale yellow, third segment much larger than second. Head bears number of long bristles. Thorax black or dark brown, shiny, scutellum bears four long bristles which may be pale yellow or black. Abdomen elliptical, rather shining in male, slightly broader than thorax. Female abdomen broader and somewhat pyriform; ovipositor conical and hard. Wings broad, banded with brown wave-like markings, with hyaline areas between the bands. Halteres yellowish. Length of adult, 5mm. The egg is white, elongate oval, 0.5mm. in length. Larva is white, somewhat glistening with greenish tinge. There are 11 segments posterior to the cephalic segment. The anterior spiracles usually with about 18 small lobes. Mandibular sclerite with three distinct hooks, posterior sclerite thin and widely forked. The posterior spiracles each with three lozenge-shaped slits. Length 7mm. Puparium oval, light yellow with wrinkled appearance, length 5mm. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.) CEIR 8(19) 5-9-58



Female of Acidia heraclei



Larvae and Pupae (showing mandible on the cephalo-pharyngeal skeleton, caudal and prothoracic spiracles)

Figures (except map) from Lundblad, O. and Lindblom, A. 1925. Meddelande No. 283 fran Centralanstalten for forskningsvasendet pa jordbruksomradet. Entomologiska advelnigen No. 45. 25 pp. Sweden.



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Cooperative
ECONOMIC INSECT
REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS hatching at Fargo, North Dakota, and nymphs noted in South Dakota. Cool, wet weather preventing hatching in western Oklahoma counties. Situation serious in Washington County, Utah. (p. 379). EUROPEAN CORN BORER pupation 42 percent in Alabama, none in southeastern South Dakota. (p. 379).

Few CORN EARWORMS collected in Alabama. Larvae heavy in Dimmit County, Texas. (p. 379). GREENBUG disappearing or light in several States. (p. 379). ARMYWORM light in grains (p. 379) and adults trapped in South Dakota (p. 396).

ALFALFA WEEVIL damage continues heavy in alfalfa in Virginia. (p. 381). Heavy in untreated fields in Nevada. (p. 381).

MEADOW SPITTLEBUG hatching in two Michigan counties and developing slowly in northern Ohio. (p. 382). PEA APHID declining in Alabama, increasing in South Dakota and Nebraska and heavy in Oklahoma. (p. 382). SPOTTED ALFALFA APHID increasing in southern Nevada and damaging in four New Mexico counties. (p. 383).

CODLING MOTH emerging in California and Oregon, none in the east. (p. 384).

PLUM CURCULIO infestation heaviest in Georgia since 1947. (p. 385).

POTATO PSYLLID survey in Colorado, Wyoming and Nebraska. (p. 387).

COTTON LEAFHOPPER emergence at Waco, Texas, lower than last year. (p.390).

HORN FLY infestations economic in Riley County, Kansas. (p. 393).

CORRECTIONS and ADDITIONAL NOTE. (p. 395).

SUMMARY OF INSECT CONDITIONS - 1957 - NEW YORK. (p. 397).

Distribution of a JAPANESE WEEVIL. (p. 391).

Reports in this issue are for the week ending May 9, unless otherwise designated.

WEATHER OF THE WEEK ENDING MAY 12

Last week's weather was unseasonably cool and wet in the East and abnormally warm with mostly light precipitation in the Far West. Rainfall for the week totaled from one-half to well over an inch in the Ohio and lower Mississippi Valleys and Eastern States. The major portion of these totals fell during the first 4 days of the week, as a storm moved from the South up the Atlantic coast. The remainder fell over the weekend, as cooler air overspread the northeast quarter and a weak low pressure system moved across the Southern States. Over much of the East, 4 or 5 days of rainy weather and wet soil further delayed farmwork. Virginia reports this spring as one of the latest and wettest on record. Flooding was reported along streams in Arkansas, Louisiana, Missouri, Indiana, Ohio, Pennsylvania, Kentucky, the Virginias, and North Carolina. Flooding was particularly serious in the eastern Kentucky - West Virginia - Virginia area, where damage is already estimated in the millions of dollars.

Temperatures in the East averaged 6° to 8° below normal in a wide belt from the middle Mississippi Valley to New York State, and 2° to 4° over the remainder of the East. Frost occurred as far south as northern Missouri on the 7th, spotty freezes occurred in New York State and New England on the 10th, and a low of 31° with traces of snow and sleet were reported in the Appalachians as far south as northern Georgia about midweek. Rainfall was very light in north central areas, where temperatures gradually rose, with maxima reaching the 90's in Iowa on the 11th and 12th. The few sections of the country in need of rain are located in this north central area. Forest fires again were on the increase in Wisconsin, where the number of fires for the first 4 months of 1958 are already 99 percent of the total for 1957. In North Dakota where rain is needed for pastures and crops, soil blowing occurred on the 9th and 12th. Soil moisture remains short in parts of eastern Montana. In the extreme western Great Plains, hail occurred in many sections and caused extensive damage to sugar beets in Weld and Larimer Counties, Colorado. Heavy rains which fell in Colorado and Wyoming improved surface soil moisture in the latter State. West of the Continental Divide, dry, sunny weather prevailed until general light to moderate rain overspread the area on the 11th. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - LOUISIANA - Nymphs were taken at 345 per 100 sweeps on crimson clover, East Feliciana Parish. (Clower, Spink). MINNESOTA - Eggs of Melanoplus bivittatus on light soils in eye-spot stage and in coagulated stage on heavier soils in Todd, Pope, Kittson and western Stearns and Roseau Counties. Those of M. femur-rubrum mostly in clear stage with some coagulation on lighter soils. Parasitism and predation light in northwest and central districts. (Minn. Ins. Rpt.). NORTH DAKOTA - Eggs of Melanoplus bivittatus hatching at Fargo, Cass County, May 8. Eggs of this species and M. billituratus observed in Pembina County mostly in coagulated and eye-spot stage. (N. D. Ins. Rpt.) SOUTH DAKOTA - First instar nymphs of M. bivittatus noted in Lyman County. (King). OKLAHOMA - Average 0-6 per square yard in eastern and northeastern range areas. Nymphs in first to third instar and chiefly Melanoplus spp. (Coppock). Cool weather with frequent rains has helped prevent hatching of range species in any numbers in western counties. (Frazier, May 1). UTAH - Reported very serious in Washington County. (Knowlton). COLORADO - Tetrix spp. averaged 3-5 per square foot in Rist Canyon drainage area, west of Ft. Collins. (Exp. Sta.). NEW MEXICO - Hatch generally light on rangeland, Lea, Roosevelt, Curry, Quay and Union Counties. First to third-instar nymphs range 12-100 per square yard on 23,000 acres near Gage, Luna County. Flights of Trimerotropis pallidipennis have settled on Las Cruces, Deming, Alamogordo and Tularosa. (N. Mex. Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - ALABAMA - Pupation has reached 42 percent. (Eden). SOUTH DAKOTA - No pupation observed in southeastern area. (Hantsbarger).

MORMON CRICKET (Anabrus simplex) - UTAH - Has hatched in Government Creek area, Tooele. (Thornley).

CORN EARWORM (Heliothis zea) - ALABAMA - Few collected from alfalfa, crimson clover and vetch, Lee County. (Guyton). TEXAS - Heavily attacking young silking corn, Dimmit County. (Harding).

FLEA BEETLES - MARYLAND - Chaetocnema pulicaria abundant on newly emerged sweet corn plants at Brookeville, Montgomery County. (U. Md., Ent. Dpt.). NORTH CAROLINA - Chaetocnema pulicaria causing moderate injury to corn, Duplin County. (Reid, Farrier, Weisman). SOUTH CAROLINA - Causing slight to moderate injury to sweetcorn. (Reid). OKLAHOMA - Continuing light to medium damage to corn in all sections. (Coppock). TEXAS - Chaetocnema sp. heavily damaged corn, Collin and Grayson Counties, with as many as 24 per plant. Condition general throughout north central area. (Chada). IDAHO - Phyllotreta pusilla in low numbers in most alfalfa fields, Elmore County. (Gittins). NEVADA - Reported in CEIR 8(19):359, identified as Chaetocnema ectypa by L. G. Gentner. (Bechtel, May 2).

A BILLBUG - GEORGIA - Heavy in corn in 8 counties. (Johnson).

GREENBUG (Toxoptera graminum) - ARKANSAS - Light in few fields with up to 50 per 10 sweeps in northwest. Absent in most fields. (Boyer, May 3). TEXAS - Practically disappeared from all grain fields, north central area. (Chada). None found in 9 panhandle counties. (Daniels). OKLAHOMA - Generally light to very light in small grains, eastern and northeastern areas. Highest counts, 30-60 per linear foot, in Rogers County. (Coppock). KANSAS - None found in small grains surveyed in several areas. (Matthew, Knutson).

ARMYWORM (Pseudaletia unipuncta) - LOUISIANA - Light on oats and wheat, Richland Parish. (Doles, Spink). Infesting whorls in 25 percent of corn at Diamond, Plaquemines Parish. (Spink). TEXAS - Average 4-7 per square foot in vetch and small grain, Kaufman, Hunt and Delta Counties. (Hawkins). Many small larvae in dense growths in grain fields, north central area. (Chada).

KANSAS - No larvae found in any wheat and barley fields surveyed in 3 southeast and 4 east central counties. (Knutson, Matthew).

CHINCH BUG (*Blissus leucopterus*) - OKLAHOMA - Moving into young corn in northeastern area averaging 0-5 per plant in most fields. Numbered 5-8 per 10 sweeps in alfalfa, Creek County. (Coppock). KANSAS - Present in several wheat and barley fields surveyed in 2 southeast and 2 east central counties. (Matthew).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - ARKANSAS - Approximately 100 per 10 sweeps in northwest small grain fields. (Boyer, May 3). TEXAS - Light in north central wheat. (Chada). OKLAHOMA - Common but light in eastern and northeastern small grains, with up to 100 per linear foot. (Coppock). KANSAS - Non-economic to light in all wheat and barley fields surveyed in 3 southeast and 4 east central counties. (Matthew).

HESSIAN FLY (*Phytophaga destructor*) - COLORADO - Puparia in Phillips County volunteer wheat, averaging one per 3 plants in one field. (Exp. Sta.).

JAPANESE BEETLE (*Popillia japonica*) - WEST VIRGINIA - Grubs have not yet moved to root zones of grasses. (W. Va. Ins. Surv.).

A SAWFLY (*Macrophya pluricincta*) - CALIFORNIA - Light in wheat in Monterey County. (Cal. Coop. Rpt.).

A STINK BUG - NEW MEXICO - Averaged 4 per 10 sweeps in wheat, Quay County. (N. Mex. Coop. Rpt.).

A WHEAT STEM MAGGOT (*Hylemya cerealis*) - COLORADO - Adults taken one in each of 3 bait traps, Weld County. Larval damage observed in Weld, Logan, Phillips, Sedgwick, Yuma and Washington Counties, averaging one per 10 plants. (Exp. Sta.).

WHITE GRUBS (*Phyllophaga* spp.) - SOUTH DAKOTA - Averaged up to 1 larva per square foot in a spring wheat field, Turner County. (Hantsbarger). MISSISSIPPI - Adults more numerous than usual near improved pastures, and have defoliated many pecan trees and other trees. (Bond). UTAH - Some damage to lawns in Salt Lake City, Salt Lake County. (Knowlton). WISCONSIN - Numerous in Washington County lawns and in spring-plowed sod in Kewaunee County. Numerous in various other localities but no damage reported. (Wis. Coop. Surv.).

SUGARCANE BORER (*Diatraea saccharalis*) - LOUISIANA - Eggs no longer in evidence and 2-15 percent of plants infested with first to third-instar larvae in 9 parishes. (Long, Hensley, Spink).

VARIEGATED CUTWORM (*Peridroma margaritosa*) - TEXAS - In vetch and small grain, Kaufman, Delta and Hunt Counties, averaging 4-7 per square foot in some fields. (Hawkins). OKLAHOMA - Numbered 0-5 recently hatched larvae per 10 sweeps in scattered alfalfa fields in northeastern counties. (Coppock).

VETCH BRUCHID (*Bruchus brachialis*) - TEXAS - Averaged 1-3 per sweep in vetch, Kaufman and Hunt Counties, and 5-10 per sweep, Delta County. (Hawkins). OKLAHOMA - Adults averaged 12 per 25 sweeps in vetch at Stillwater, Payne County. (Fenton).

WEBWORMS - NEW MEXICO - Adults very abundant in fields throughout southern half of State. (N. Mex. Coop. Rpt.). SOUTH DAKOTA - *Crambus* spp. infesting 13 acre spring wheat field, Clay County, with approximately 30 percent of plants showing damage symptoms. (Komanetsky).

YELLOW SUGARCANE APHID (*Sipha flava*) - LOUISIANA - Infesting 2-15 percent of plants in 5 parishes. (Long, Hensley, Spink).

ALFALFA CATERPILLAR (*Colias philodice eurytheme*) - NEBRASKA - Appearing in southeast and northeast areas averaging 5 per 100 sweeps. (Andersen). IDAHO - Adults active in alfalfa from Mountain Home eastward to Shoshone, with numbers low. (Gittins). UTAH - Caterpillars and adults in northern fields. (Knowlton).

ALFALFA WEEVIL (*Hypera postica*) - MARYLAND - Adult and larval populations about at peak in central sectors. Larvae averaged 12-25 per sweep, Montgomery County. (U. Md., Ent. Dpt.). PENNSYLVANIA - Cold weather has delayed development on alfalfa in southeastern sections. (Menusan). WEST VIRGINIA - Statewide spring survey in progress. New infestation in Roane County. (W. Va. Ins. Surv.). VIRGINIA - Larvae continue heavy damage to alfalfa in most areas of State except in some southwestern counties where damage is light and controls have not been needed. First cutting practically entire loss where controls have not been applied. Reinfestations have occurred where applied controls have been washed or diluted by heavy rains. (Morris). GEORGIA - Averages 20 larvae per 100 sweeps of alfalfa, Johnson County. (Johnson). NORTH CAROLINA - Taken for first time in McDowell County. (Kirkman, Farrier). Second applications necessary to protect first cutting in some southern localities. (Farrier). UTAH - Adults extremely numerous in occasional fields, Cache and Box Elder Counties. Larvae common, up to one-half grown. (Knowlton). IDAHO - Populations vary from field to field in southwestern and central areas. Adults predominating, occasionally exceeding 2 per sweep in Glens Ferry area, Elmore County. Larval populations still low and generally in first and second instars. (Gittins). COLORADO - Larvae average 9 per 100 sweeps with 22 percent parasitism, Delta County, and 8 per 100 sweeps, Mesa County. (Exp. Sta.). NEVADA - Larvae heavy in untreated fields in Fallon area, Churchill County. (Bechtel, Gallaway, May 2).

APHIDS - NEVADA - All stages heavy on black greasewood in Schurz area, Mineral County. (Bechtel, Gallaway, May 2). CALIFORNIA - *Aphis* sp. near *fabae* heavy on burclover at Colusa, Colusa County. (Cal. Coop. Rpt.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - KANSAS - Averaged 3 per 100 sweeps in alfalfa, Allen and Bourbon Counties. (Matthew).

CLOVER CATERPILLARS - LOUISIANA - Averaged 50 per 100 sweeps in some white clover fields, Jefferson Davis and Acadia Parishes, majority being *Heliothis zea* with some variegated cutworms, loopers and green cloverworms. In Avoyelles Parish 43 larvae were found on 2 square feet of soil. Disease and parasitism noticed in all areas. (Spink).

CLOVER LEAF WEEVIL (*Hypera punctata*) - ILLINOIS - Larvae in clover and alfalfa averaged 1.5 per square foot in northeastern and 0.6 in eastern areas. (Ill. Ins. Rpt.). PENNSYLVANIA - Larval mortality from disease high in clover, Susquehanna County. (Gesell).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - OREGON - Numerous in most alsike clover fields in Klamath County since late March. Mating and egg-laying in progress May 1. (Vertrees). IDAHO - Adults seldom more than 1 per sweep in fields examined in 4 areas of Elmore County. (Gittins).

CUTWORMS - NEW MEXICO - Causing some damage to alfalfa, Chaves County. (N. Mex. Coop. Rpt.). IDAHO - Mostly late-instar larvae still common in alfalfa and clover fields. Some light feeding damage. (Gittins). UTAH - *Chorizagrotis auxiliaris* damage generally light in most alfalfa areas. (Knowlton). WISCONSIN - Moderate numbers in lawns and pastures in several counties. (Wis. Coop. Surv.).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Light damage to alfalfa, Lee County. (Guyton).

LESSER CLOVER LEAF WEEVIL (Hypera nigrostris) - OHIO - Difficult to find in northern areas. First adults taken in sweepings May 7. (Treece). ILLINOIS - Larvae emerging in northern areas. (Ill. Ins. Rpt.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - DELAWARE - Common on narrow-leaf plantain and dandelion. Light on alfalfa. (MacCreary, Conrad). MARYLAND - Nymphs light to moderate on hay crops in central areas. (U. Md., Ent. Dept.). WEST VIRGINIA - First and second-instar nymphs in alfalfa and red clover statewide. (W. Va. Ins. Surv.). MICHIGAN - Hatching April 30 in Berrien and Washtenaw Counties. (Hutson, May 2). INDIANA - Mostly in second instar in vicinity of Lafayette, Tippecanoe County, on May 7, averaging 2 per stem in fields checked. (Wilson). ILLINOIS - Nymphs averaged 138 per 100 stems of clover and alfalfa in northwestern section, 63 in northeast and 16 in eastern section. Highest count in one field was 384 per 100 stems. (Ill. Ins. Rpt.). OHIO - Developing slowly in north after early hatch. Development slowed by cool weather. Spittle masses not yet conspicuous. (Treece).

NORTHERN MASKED CHAFER (Cyclocephala borealis) - MARYLAND - Larvae damaging turf at College Park, Prince Georges County. (U. Md., Ent. Dept.).

PAINTED-LADY (Vanessa cardui) - CALIFORNIA - Heavy in burclover in Colusa area, Colusa County, and defoliated fireweed in alfalfa plantings with little damage to alfalfa in French Camp area, San Joaquin County. Prevalent in areas of Butte, Glenn, Yolo and Solano Counties. (Cal. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - PENNSYLVANIA - Very light in alfalfa, Wyoming County. (Geseil). MARYLAND - Generally light on central area alfalfa. Insecticide treatments not necessary in majority of fields. (U. Md., Ent. Dept.). VIRGINIA - Counts varied 5-200 per sweep in 17 alfalfa and 3 clover fields surveyed in eastern areas. No damage apparent. Many natural enemies present and fungus beginning to reduce populations. (Morris). ALABAMA - Infestations declining in central areas. (S. Hays, Grimes). FLORIDA - Populations high in white and crimson clover at Quincy, Gadsden County. Det. A. N. Tissot. (Fla. Coop. Surv., April 17). ILLINOIS - Average 375 per 100 sweeps in northern section, 176 in eastern section and 6,433 in Gallatin County of southeastern section in clover and alfalfa. (Ill. Ins. Rpt.). SOUTH DAKOTA - Building up to average of 10 per 10 sweeps in southeast alfalfa fields. (Hantsbarger). NEBRASKA - Increasing with average per 100 sweeps of 675 in southeast, 80 in northeast and 33 in central Platte Valley. (Andersen). ARKANSAS - Continue high in legumes, averaging 286 per 10 sweeps in 18 fields checked, some higher. Declining in most fields. Predators and parasites still low, but increasing. (Boyer, May 3). KANSAS - Non-economic to light on alfalfa fields in 3 southeastern and 4 east central counties. In general, showing slight buildup, however, size of alfalfa plants precludes any probable crop damage to first cutting. Parasites and predators building up slowly and fungus disease present in some aphids. (Matthew). OKLAHOMA - Generally heavy in vetch and alfalfa throughout State, with counts of 1,200-1,800 per 10 sweeps common in alfalfa in central and northeastern areas. (Coppock). TEXAS - Light in vetch, Delta County. (Hawkins). IDAHO - Common in all alfalfa fields sampled from Mountain Home to Shoshone. Numerous young aphids observed. Averaged 5 per sweep or better in most fields. (Gittins). NEVADA - Generally light in Churchill, Douglas and Washoe Counties. (Bechtel, Gallaway, May 2). COLORADO - Continues low in alfalfa, Montrose and Mesa Counties. (Exp. Sta.). NEW MEXICO - Heavy in southern counties and building up in De Baca, Quay, Roosevelt and Curry Counties. (N. Mex. Coop. Rpt.).

LYGUS BUGS - ARKANSAS - Lygus lineolaris averaging 9 per 10 sweeps in northwest. (Boyer, May 3). ILLINOIS - Lygus lineolaris adults averaged 20 and 25 per 100 sweeps respectively in northeastern and eastern clover and alfalfa fields. (Ill. Ins. Rpt.). NORTH DAKOTA - Few adults in sweepings of southeastern alfalfa fields. (N. D. Ins. Rpt.). NEBRASKA - Increasing, average per 100 sweeps; 122 in southeast, 28 in northeast and 24 in central Platte Valley. (Andersen). UTAH - Small to moderate numbers of L. elisus and L. hesperus in northern alfalfa and fall grains. Nymphs present. (Knowlton). NEW MEXICO - Very abundant in alfalfa fields near Portales, Roosevelt County. (N. Mex. Coop. Rpt.). IDAHO - Averaged one per sweep in all alfalfa and clover fields sampled in 4 areas, Elmore County. Most were L. elisus. (Gittins). Nymphs averaged as high as 20 per sweep in many red clover fields, northern Canyon County. (Waters). COLORADO - Average 25 per 100 sweeps, Delta County. (Exp. Sta.).

POTATO LEAFHOPPER (Empoasca fabae) - KANSAS - Leafhoppers, probably E. fabae, collected in 3 southeastern alfalfa fields. In Labette County 12 were taken in 1,000 sweeps. (Knutson). Four leafhoppers in 700 sweeps in Allen County. (Matthew). None were taken in any other southeast or east central counties. (Matthew).

RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Averaged 30 per 100 sweeps on oats, East Feliciana Parish and 8 per clump on bull grass and as high as 20 per 100 sweeps in wild grass, Vermillion Parish. (Spink).

SPITTLEBUGS - PENNSYLVANIA - Cold weather has delayed development on legumes in southeast areas. (Menusan).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Increasing in southern part of State, especially Clark and southern Nye Counties. Heavy in one field in Moapa Valley, Clark County. (Zoller, May 2). ARKANSAS - Averaged 0-8 per 10 sweeps in some fields in northwest counties. (Boyer, May 3). NEW MEXICO - Mostly heavy and damaging in Dona Ana, Otero, Chaves and Eddy Counties. Light to moderate in De Baca, Socorro, Quay, Curry and Roosevelt Counties. (N. Mex. Coop. Rpt.). TEXAS - Very scarce in alfalfa, north central area. None found in 4 fields checked, Delta County. (Chada). OKLAHOMA - Very light to non-existent in northeastern and eastern sectors. (Coppock). KANSAS - None found in alfalfa fields surveyed in eastern areas. (Knutson et al.)

SWEETCLOVER WEEVIL (Sitona cylindricollis) - IDAHO - Adult feeding damage apparent in all fields examined, Elmore County. (Gittins). UTAH - Feeding evidence common on northern sweetclover. (Knowlton). MINNESOTA - On sweetclover in northwest district. (Minn. Ins. Rpt.).

THRIPS - NEW MEXICO - Damaging young hay throughout Dona Ana County. (N. Mex. Coop. Rpt.).

WEEVILS - SOUTH DAKOTA - Sitona scissifrons becoming quite abundant in east central and southeastern alfalfa fields, averaging 6 per 10 sweeps. (Hantsbarger). ALABAMA - Hypera meles heavy in crimson and white clover in central and north central areas. (Grimes). NORTH CAROLINA - H. meles adults in Ladino clover field, Richmond County. (Farrier, Weisman).

WIREWORMS - IDAHO - Destroying large areas of 5-year old stand of Ranger alfalfa near Lake Lowell, Canyon County. (Waters).

A JUNE BEETLE (Phyllophaga fusca) - MICHIGAN - Adults numerous about East Lansing, Ingham County, May 2. (Hutson).

FRUIT INSECTS

APHIDS - ALABAMA - Light to moderate infestations on pecan in Elmore and Baldwin Counties. (Grimes). UTAH - Aphis pomi sometimes numerous in Box Elder and Cache County orchards. (Knowlton). DELAWARE - A. pomi in apple orchards in Kent and Sussex Counties. Eriosoma lanigerum seen in pruning scars in Kent and Sussex Counties. (MacCreary, Conrad). MINNESOTA - Some build up of Rhopalosiphum fitchii observed. Not as serious as same time in 1957. NEW MEXICO - R. fitchii infesting apples in Espanola Valley, Rio Arriba County, and E. lanigerum infestations light to moderate on apple in Sandoval County. Myzus persicae infestations on peaches heavy in Rio Arriba, De Baca, Lincoln, Otero, Sandoval, Dona Ana, Bernalillo, Grant and Eddy Counties. (N. Mex. Coop. Rpt.). MISSOURI - Very few present in southeastern area. (Wkly. Rpt. Fr. Gr.). CALIFORNIA - Anuraphis roseus infestations medium on apple trees at Sutter Creek, Amador County. (Cal. Coop. Rpt.). First broods of Chromaphis juglandicola noticed April 24 on walnuts. General infestation, not severe, in San Joaquin County. Localized treatment will be necessary. (Michelbacher).

CODLING MOTH (Carpocapsa pomonella) - ILLINOIS - No emergence at Carbondale to May 7. (Meyer). INDIANA - No emergence of spring brood adults to May 6 at Vincennes. (Hamilton). OHIO - No emergence to May 9. (Cutright). COLORADO - Pupating in Montrose and Mesa Counties. No moths taken to May 2. (Exp. Sta.). MISSOURI - Pupating. (Wkly. Rpt. Fr. Gr.). CALIFORNIA - Heavy emergence of adults in San Joaquin County. Some still in larval stage, May 7. (Michelbacher). OREGON - Emerging at Salem, May 8 (Goeden) and first adults caught in bait pans May 1 in Medford area (Gentner).

CATFACING INSECTS - ILLINOIS - Stink bugs continue to increase on peaches at Carbondale. (Meyer). INDIANA - Populations of stink bugs in peach orchards vary extensively at Vincennes. Sucking punctures observed May 5. Populations expected to increase with warm weather. (Hamilton). OHIO - Lygus lineolaris populations declined to 1 per peach tree; heavier on Stanley prunes. Stink bugs not yet jarred from peaches or plums. (Rings).

ORCHARD MITES - WEST VIRGINIA - Eggs hatching on apple in Jefferson and Berkeley Counties. (W. Va. Ins. Surv.). INDIANA - Panonychus ulmi developing rapidly on apples at Orleans. (Marshall). NEW JERSEY - Mites have hatched on apple. Stethorus predators active in many southern orchards. (Ins. Dis. Newsl.). OHIO - Hatching of P. ulmi near complete. (Cutright). UTAH - Clover mites sometimes numerous in apple orchards in Cache and Box Elder Counties. (Knowlton). NEW MEXICO - Heavy infestation of Bryobia praetiosa complex on unsprayed apple trees at Fort Sumner, De Baca County. Light infestations on apple trees in Lincoln, De Baca, Sandoval and Otero Counties. Tetranychus spp. building up on apple trees near Mayhill and High Rolls, Otero County. Eggs very numerous some orchards; very few hatched. (N. Mex. Coop. Rpt.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Adults coming to bait traps May 1 at Vincennes. (Hamilton). OREGON - First adult collected in Salem area May 7. (Goeden).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - COLORADO - Infesting apple trees at Fort Collins, Larimer County. (Exp. Sta.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MICHIGAN - Eggs readily found in orchards at Coloma. None hatched at Lawrence and Coloma and Benton Harbor to April 27. (Hutson, May 5). ILLINOIS - Early larvae nearly half-grown at Mounds. Egg masses vary considerably in number in commercial orchards; from 0.3 to 4 per tree. Two-thirds of masses hatched by May 6. (Meyer). INDIANA - First-brood egg masses began to hatch May 2 at Vincennes. (Hamilton). WEST VIRGINIA - Egg-laying began April 12 on apple in Jefferson and Berkeley Counties. (W. Va. Ins. Surv.). NEW JERSEY - Active on apple in Camden County.

(Ins. Dis. Newsl.). DELAWARE - Newly hatched larvae in apple foliage in Kent County. (MacCreary, Conrad). WISCONSIN - Emerged and laying eggs in Door County orchards for past two weeks. (Wis. Ins. Coop. Surv.) May 9). MISSOURI - Few larvae noted in orchard in Columbia area. (Wkly. Rpt. Fr. Gr.). NEW YORK - Eggs observed May 5 in Columbia County and were laid prior to May 3 in Niagara County; found easily in Wayne County April 30. (N.Y. Wkly. Rpt.).

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - DELAWARE - Eggs and third-instar larvae collected on apple leaves in Sussex County. (MacCreary, Conrad).

EUROPEAN EARWIG (Forficula auricularia) - CALIFORNIA - Feeding on foliage of prune and apricot trees and young pear buds and shoots in Santa Clara County. (Davis).

GRAPE MEALYBUG (Pseudococcus maritimus) - CALIFORNIA - Active on new growth of apricot trees in Alameda and Santa Clara Counties. (Davis).

PEACH TREE BORER (Sanninoidea exitiosa) - OKLAHOMA - Heavy infestation with resultant damage in one large peach orchard in Tulsa County. (Coppock). KANSAS - Causing considerable damage to peach trees in orchards and home plantings in south central area. Counts ranged to high of 47 borers in one tree. (Eshbaugh).

PEACH TWIG BORER (Anarsia lineatella) - NEW MEXICO - Caused extensive damage to peach terminals in De Baca, Lincoln and Eddy Counties. (N. Mex. Coop. Rpt.). UTAH - Common in several northern and central counties. (Knowlton).

PLUM CURCULIO (Conotrachelus nenuphar) - ILLINOIS - Adults continue to increase on unsprayed trees at Carbondale. Numbers jarred per tree at Mounds were 1.4 - April 23, 2.7 - May 1; 3.3 - May 7. Punctures observed May 5. Populations generally light in commercial orchards. (Meyer). INDIANA - Adult populations increasing in untreated orchards at Vincennes; 53 adults bumped from 5 trees on May 5. Populations on treated orchards very light. First puncture observed May 5. (Hamilton). GEORGIA - Total of 3,982 larvae emerged from a bushel of peach drops (about 6,000) collected in a commercial orchard at Fort Valley. Peak emergence occurred on May 4 when 1139 emerged in one day. This is heaviest infestation since 1947. (Snapp, May 5). OHIO - Emergence delayed; first adults found on plums May 9. None jarred from peaches. (Rings). ALABAMA - Damaging plums in Pickens County. (Grimes). NORTH CAROLINA - Eggs hatched and larvae reaching pits of peaches in Montgomery County. Abundant in unsprayed orchards. (Smith). NEW YORK - Emergence late in western area. No appreciable emergence noted until May 11. (N.Y. Wkly. Rpt.).

FORBES SCALE (Aspidiotus forbesi) - MICHIGAN - Control warranted some sour cherry plantings in Berrien and Van Buren Counties. (Hutson, May 5).

CALIFORNIA PEAR-SLUG (Pristiphora californica) - CALIFORNIA - Medium infestations on pear trees at Camino, El Dorado County. (Cal. Coop. Rpt.).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - Light infestations of pear trees in Sequel area of Santa Cruz County and light in Georgetown area of El Dorado County. (Cal. Coop. Rpt.). OREGON - Earliest first-brood adults appearing about May 5 in Medford area. (Gentner). NEW YORK - Nymphs first observed on April 24 in western area. (N.Y. Wkly. Rpt.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - PENNSYLVANIA - Damage observed on unsprayed pear trees in Adams County. (Asquith). Very heavy in an orchard in York County. (Pepper).

SAN JOSE SCALE (Aspidiotus perniciosus) - NEW MEXICO - Light infestations on fruit trees in Rio Arriba County. (N. Mex. Coop. Rpt.).

MAY BEETLES (*Phyllophaga* spp.) - ALABAMA - Twenty-five to seventy-five percent of pecan leaves defoliated in south Mobile County. (Barry, Bolton, Seibels). MISSISSIPPI - Many pecan trees defoliated in George County. (Bond).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - OKLAHOMA - Slightly over 8 percent of 450 pecan tips inspected in Bixby area showed damage. Most larvae mature and ready to pupate. (Coppock).

Citrus Insect Situation, First Week of May, Lake Alfred, Florida - PURPLE SCALE activity increased sharply and will continue to be high through July. FLORIDA RED SCALE activity increased, with some reduction of activity expected later this month followed by an increase in June. CITRUS RED MITE activity was higher on new leaves this week than old leaves last week. There will be an increasing trend through May, especially if weather is dry. CITRUS RUST MITE activity was a little lower on new leaves this week than on old leaves last week. There will be a slowly increasing trend in May. SIX-SPOTTED MITE infestations increased increased with a further increase expected, with the peak occurring late in May. (Pratt, Thompson, Johnson, May 7).

YELLOW SCALE (*Aonidiella citrina*) - CALIFORNIA - Medium infestation on orange trees in Oakdale, Stanislaus County, and light on orange tree in Santa Paula area of Ventura County. (Cal. Coop. Rpt.)

ROOT WEEVILS (*Brachyrhinus sulcatus*, *B. ovatus*) - OREGON - Heavy infestation in 15 acre planting of blueberries at Siletz, April 11. Sixty percent of *B. sulcatus* in pupal stage by May 3. (Every, Rosenstiel).

GRAPE ERINEUM MITE (*Eriophyes vitis*) - CALIFORNIA - Heavy populations damaging grape buds in Lodi-Ripon area of San Joaquin County. (Cal. Coop. Rpt.).

A SPIDER MITE (*Eotetranychus willamettei*) - CALIFORNIA - Occurs on grapes in Suisun area of Solano County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

BEET LEAFHOPPER (*Circulifer tenellus*) - NEVADA - Extremely light populations in Walker Lake area, Mineral County. (Bechtel, May 2). UTAH - Migration reached central area by May 6; 0.5 per linear foot of row on sugar beets. Up to 0.8 per square foot near Hooper, northern area, on May 9. (Dorst).

SUGAR-BEET ROOT MAGGOT (*Tetanops myopaeformis*) - COLORADO - Beginning to pupate in Weld County. Counts 6 maggots and 3 pupae per square foot; one to 3 inches in soil. (Exp. Sta.).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - SOUTH CAROLINA - First brood larvae hatched April 21 at Charleston. Under control since hatching. (Reid, et al.). GEORGIA - Light infestations on tomatoes in Tift, Mitchell, Thomas, Grady, Brooks and Tattnall Counties. Heavy in Colquitt County. (Johnson). VIRGINIA - Adults noted in Lancaster County (McSwain) and attacking potatoes in Chesterfield County (Matheny). Adults and eggs on tomato plants in Richmond County. (Farmer). ALABAMA - Causing moderate to heavy damage to potatoes in north central area. (Grimes). LOUISIANA - Medium infestation on potatoes in Lafourche Parish. (Arceneaux, Spink). PENNSYLVANIA - First adult of season on potato, May 7, in southeast area. (Menusan).

GREEN PEACH APHID (*Myzus persicae*) - SOUTH CAROLINA - Light infestations of *M. persicae* and *Macrosiphum solanifolii* on potatoes at Charleston. (Reid et al.). VIRGINIA - common on spring spinach on Eastern Shore and in Norfolk area. (Hofmaster). FLORIDA - Infesting potatoes in Hasting, St. Johns County, area.

Difficult to control. (Hunter, May 2). CALIFORNIA - Light infestations on peas in Santa Cruz area of Santa Cruz County. (Cal. Coop. Rpt.). Populations on sugar beets declining in Kern County. (Swift). WASHINGTON - Nymphs and adults on volunteer potatoes in warehouse cull piles at Othello doing moderate damage. (Landis).

LEAFHOPPERS - NEW MEXICO - Causing heavy damage to potatoes near Las Cruces, Dona Ana County. Also causing some damage to lettuce in Dona Ana, Valencia, Eddy and Bernalillo Counties. (N. Mex. Coop. Rpt.).

SOUTHERN POTATO WIREWORM (Conoderus falli) - SOUTH CAROLINA - Average of only 1.8 larvae per square foot (6-inch depth) found in untreated plots at Charleston compared with 4.5 in April 1957. Indications are that overwintering larvae are lower in potato plantings than for past several years during spring. (Reid et al.).

Potato Psyllid Survey - A survey of Paratrioza cockerelli conducted May 5-8 showed low populations in areas east of the mountain range in Colorado, Wyoming and Nebraska. Populations averaged 0.8 per 100 sweeps in the North Platte Valley in western Nebraska and eastern Wyoming, 2.5 in the Greeley district of northern Colorado and 26.1 in the Arkansas Valley of southern Colorado. These numbers are lower than expected, considering the populations encountered in the spring breeding areas of the southern States. Potato psyllid movement from spring breeding areas may be later than usual, due to the abundant lush host plants available in these States. If favorable weather conditions continue, it may be expected that populations will increase considerably up to the end of June when the peak of the northward movement from the southern States occurs. Very low populations were found in areas west of the mountain range. Only a trace was found in the Grand Junction and northern Utah areas. (PPC, ENT, States Coop.).

CUTWORMS - SOUTH DAKOTA - Feltia sp. averaged up to 4 larvae per square foot in a previous-year potato field, Marshall County. (Hantsbarger). SOUTH CAROLINA - Damaging tomatoes some fields at Charleston (Reid et al.). TEXAS - Medium infestation of Agrotis ypsilon on hot peppers. (Harding).

TOMATO FRUITWORM (Heliothis zea) - LOUISIANA - Very light infestation on tomatoes at Diamond. (Spink).

TOMATO HORNWORM (Protoparce quinque maculata) - LOUISIANA - Light infestation on tomatoes at Diamond. (Callahan, Spink).

WHITEFLIES - TEXAS - Heavy infestation on tomatoes in Dimmit County. (Harding).

ALFALFA LOOPER (Autographa californica) - CALIFORNIA - Medium infestation on lettuce in Watsonville area of Santa Cruz County. (Cal. Coop. Rpt.).

ASPARAGUS BEETLES (Crioceris spp.) - DELAWARE - C. asparagi common and depositing eggs in Sussex County, and C. duodecimpunctata fairly common in southern New Castle County. (MacCreary, Conrad). WASHINGTON - One adult C. duodecimpunctata collected at Crescent Bar. First record in area. (Landis).

CABBAGE APHID (Brevicoryne brassicae) - WASHINGTON - Various sizes of winged and wingless forms on several wild crucifers; more abundant than usual in spring. (Landis).

CABBAGE CURCULIO (Ceutorhynchus rapae) - VIRGINIA - Adults feeding on cabbage in lower part of Northampton County. (Hofmaster).

CABBAGE LOOPER (*Trichoplusia ni*) - VIRGINIA - Few observed on cole crops in Eastern Shore. (Hofmaster). LOUISIANA - One hundred percent of cabbage plants infested at Diamond. (Spink). NEW MEXICO - Eggs hatching in lettuce fields in Bernalillo and Valencia Counties; infestations medium to heavy. Larvae and eggs moderate in Socorro County. Causing some damage in Dona Ana and Eddy Counties. (N. Mex. Coop. Rpt.). CALIFORNIA - Heavy populations on lettuce in Chula Vista area of San Diego County. Medium infestation in National City area. (Cal. Coop. Rpt.). Seedling lettuce heavily populated in Salinas Valley. (Swift).

CABBAGEWORMS - SOUTH CAROLINA - Light infestations of *Plutella maculipennis*, *Pieris rapae* and *Trichoplusia ni* on cabbage at Charleston. *P. maculipennis* more abundant than past few years at this time and *T. ni* much less abundant. (Reid, et al.)

CUCUMBER BEETLES - LOUISIANA - Heavy infestation of *Diabrotica* sp. on squash in Caddo County. (Carroll, Spink). NORTH CAROLINA - Local infestation of *Acalymma vittata* on cucumbers in Duplin County. (Farrier). NEW MEXICO - Heavy infestations of *Diabrotica* spp. and *Acalymma* spp. in melons have made replanting necessary some fields in Valencia County. *Diabrotica* spp. also damaging lettuce in Valencia and Bernalillo Counties. (N. Mex. Coop. Rpt.).

FALSE WIREWORMS - NEW MEXICO - Causing light and spotty damage to lettuce near Los Lunas, Valencia County. (N. Mex. Coop. Rpt.).

FLEA BEETLES - WEST VIRGINIA - Heavy infestation of *Phyllotreta striolata* on cabbage in Mineral County. (W. Va. Ins. Surv.). UTAH - Sometimes numerous on mustards in northern area. *Psylliodes punctulata* severely damaging 20 acres of sugar beets at Bothwell, Box Elder County. (Knowlton). VIRGINIA - Adults abundant and feeding on tomatoes and potato plants on the Eastern Shore and in eastern area of State (Hofmaster, Farmer, Ptucha, Matheny). ALABAMA - Moderate to heavy damage caused to squash and watermelons in Chilton and Fayette Counties and garden crops in Perry and Lamar Counties by *Acalymma vittata*. (Grimes, Ruffin). NORTH CAROLINA - *Chaetocnema pulicaria*, *C. denticulata*, and *C. confinis* infesting cucumbers in Duplin County. (Farrier, Weisman).

GRASSHOPPERS - GEORGIA - Moderate infestations in pimiento pepper fields in Lowndes County. (Johnson).

ONION MAGGOT (*Hylemya antiqua*) - MICHIGAN - Adults numerous in headlands and along ditch banks in Munith-Stockbridge-Bath and Grant areas. (Hutson, May 5).

THRIPS - NEW MEXICO - About 15-20 per plant in onion fields in Dona Ana County. Light to moderate infestations on lettuce in Dona Ana, Socorro, Valencia and Bernalillo Counties. (N. Mex. Coop. Rpt.)

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - MISSISSIPPI - Feeding on cabbage plants in Stone County. (Kislancko).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - SOUTH CAROLINA - Slight injury to beans at Charleston. (Reid et al.). GEORGIA - Light to moderate infestations on beans in 6 counties. (Johnson). NORTH CAROLINA - Infesting beans and field peas locally in Duplin County, causing up to 10 percent loss of foliage. (Farrier).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - SOUTH CAROLINA - First brood larvae hatched by May 1 at Charleston. Overwintered adults and eggs more abundant than usual for time of year. Adults numerous on beans in Colleton County. (Reid et al.). GEORGIA - Moderate to heavy infestations on beans in Colquitt, Mitchell, Thomas, Grady, Brooks and Tattnall Counties. (Johnson).

NORTH CAROLINA - Causing up to 5 percent loss of bean foliage in Duplin County. (Farrier). FLORIDA - Infesting beans at Gainesville, Alachua County, and at Quincy, Gadsden County. (Fla. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - WASHINGTON - Adults and young nymphs of *Lygus hesperus* and *L. elisus* very abundant on peppergrass and other mustards at Othello, Moses Lake and Quincy. (Landis).

ROSE LEAFHOPPER (*Edwardsiana rosae*) - WASHINGTON - Nymphs very abundant on blackberry in Puyallup Valley. (Breakey, Campbell).

AN APHID (*Myzus ascalonicus*) - WASHINGTON - Heavy infestation and damage in strawberry field in Lewis County. Migrating to summer host in Whatcom County about May 1. (Breakey).

A LEAF ROLLER (*Archips obsoletana*) - MICHIGAN - Few larvae found in strawberry plantings in Eau Claire, Millburg and Lawrence areas. (Hutson, May 5).

SPIDER MITES - VIRGINIA - Populations relatively low on strawberries on Eastern Shore. (Hofmaster). MASSACHUSETTS - Heavy infestation of *Tetranychus telarius* caused severe damage to strawberry planting in Amherst. (Crop Pest Cont. Mess.). NEW YORK - *T. telarius* threatening strawberries in Rockland County. (N.Y. Wkly. Rpt.).

STRAWBERRY LEAF ROLLER (*Ancyliis comptana fragariae*) - VIRGINIA - Adults very abundant in localized areas in Northampton County. (Hofmaster).

STRAWBERRY WEEVIL (*Anthonomus signatus*) - VIRGINIA - Caused considerable damage to strawberry plants in Keller area of Accomack County. (Hofmaster). ALABAMA - Moderate to heavy damage on blackberries in Chilton and Tuscaloosa Counties. (Grimes).

TOBACCO INSECTS

GRASSHOPPERS - GEORGIA - Moderate infestations on tobacco in Colquitt, Brooks and Lowndes Counties. (Johnson).

GREEN PEACH APHID (*Myzus persicae*) - GEORGIA - Moderate infestations on tobacco in Colquitt, Mitchell and Berrien Counties. (Johnson).

TOBACCO BUDWORM (*Heliothis virescens*) - GEORGIA - Moderate to heavy infestations on tobacco in 16 counties. (Johnson).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - NORTH CAROLINA - Damaging tobacco locally in Robeson and Wake Counties. (Perkins, Farrier, Guthrie).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - LOUISIANA - None found in Rapides and Pointe Coupee Parishes. (Spink). TEXAS - Winter survival from hibernation cages at Waco was 3.4 percent, compared with 4.02 in 1957 for same date. Weevils averaged 38 per acre in 9 fields inspected, McLennan and Falls Counties. (Parenica et al.). ALABAMA - Eight adults collected in tanglefoot screens in cotton fields, Autauga County. (Rawson).

COTTON APHID (*Aphis gossypii*) - TEXAS - Populations reduced, but few on occasional plants in most fields inspected, McLennan and Falls Counties. (Parenica et al.). NEW MEXICO - Light in Dona Ana County and light to heavy in Eddy County. (N. Mex. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - OKLAHOMA - Inspection of one lint cleaner revealed 3 dead larvae, Jefferson County. (Hatfield, April 29).

APHIDS - TEXAS - Light on cotton, Brazoria County. (Cook). NEW MEXICO - *Aphis medicaginis* light on cotton, Dona Ana and Eddy Counties. (N. Mex. Coop. Rpt.).

COTTON LEAFHOPPER (*Psallus seriatus*) - TEXAS - Seasonal emergence in hibernation cages at Waco was 7,730, compared with 21,722 for same date in 1957. Large numbers of adults were collected in sweepings of evening primrose in several locations, McLennan and Falls Counties. (Parenica et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEW MEXICO - Larvae damaging cotton in cotyledon stage, Dona Ana County. (N. Mex. Coop. Rpt.).

CUTWORMS - TEXAS - Some damage in a few fields, McLennan and Falls Counties. (Parenica et al.).

SEED-CORN MAGGOT (*Hylemya cilicrura*) - CALIFORNIA - Almost complete destruction of seed planted where cover crops were recently plowed under, Madera area, Madera County. Several to each seed. (Swift)

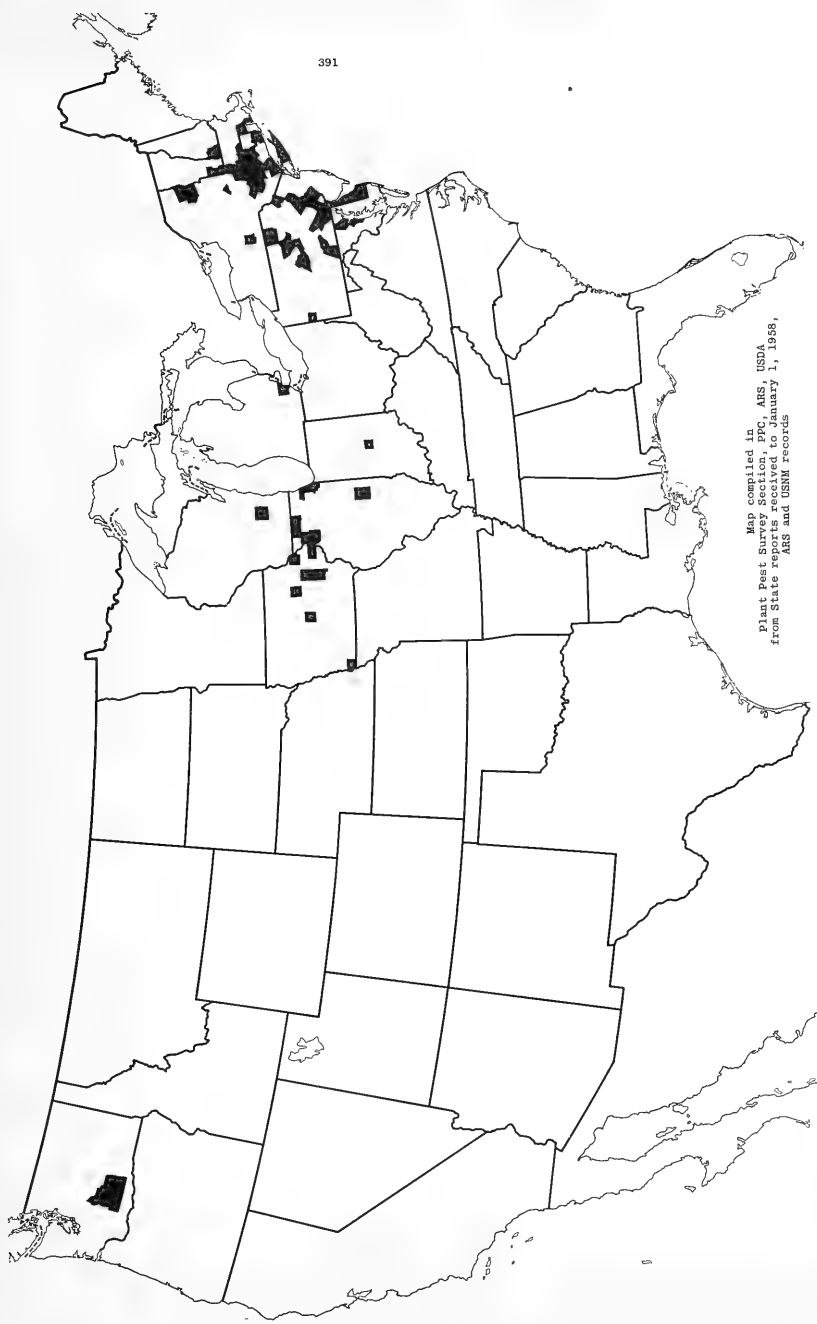
THRIPS - LOUISIANA - Light with only an occasional adult. (Roussel, Spink). TEXAS - Medium attack on cotton, Brazoria County. (Cook). Populations very low, McLennan and Falls Counties. (Parenica et al.). NEW MEXICO - Building up rapidly in Dona Ana County. Some buildup in Luna, Lea and Eddy Counties. (N. Mex. Coop. Rpt.). MISSISSIPPI - Some present in delta counties. (Merkl et al.).

Cotton Insects in Lower Rio Grande Valley, Texas: FLEAHOPPER populations climbing to high levels across western and northern sections. Only few reports of poor control and cause not yet determined. BOLLWORMS continue feeding on terminals in scattered fields and SPIDER MITES increasing in some fields. Few BOLL WEEVILS reported in Bayview area, Cameron County, with one small southern field reported to have damaging proportion of punctured squares. THRIPS moderate to heavy in few fields in same general area. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

APHIDS - CALIFORNIA - *Myzocallis californicus* heavy on Valley oak in Stockton area, San Joaquin County. (Cal. Coop. Rpt.). IDAHO - Stem mothers abundant on small twigs of Norway maple in Moscow area and producing numerous young. (Manis). OREGON - Aphids reported in CEIR 8(17):325 as *Cinara* sp. have been identified as *Cinara curvipes* by F. C. Hottes. (Larson). ALABAMA - A black aphid affecting several hundred young pines, Greene County, and is probably general over central and southern areas. (Grimes).

DISTRIBUTION OF A JAPANESE WEEVIL (*CALOMYCTERUS SETARIUS*)



- BARK BEETLES - WEST VIRGINIA - Dendroctonus spp. and Ips spp. have killed many red, white and Virginia pines in a small plantation, Hampshire County. (W. Va. Ins. Surv.).
- BIRCH LEAF MINER (Fenusa pusilla) - NEW JERSEY - Adults active in central areas. (Ins. Dis. Newsl.). RHODE ISLAND - Adults present in Providence and Washington Counties. (Mathewson, Hyland).
- COOLEY SPRUCE GALL APHID (Chermes cooleyi) - IDAHO - Overwintering adults laying eggs in Moscow area, Latah County. (Manis).
- EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MICHIGAN - Larvae began spring activity April 16. (Hutson, May 5).
- FALL WEBWORM (Hyphantria cunea) - INDIANA - First web noticed May 5 at Lafayette, Tippecanoe County. (Schuder). OREGON - Adults began emerging May 7 at Salem. (Goeden).
- GYPSY MOTH (Porthetria dispar) - RHODE ISLAND - First hatch May 2 at Little Compton, Newport County. (Mathewson).
- A LEAF ROLLER - OKLAHOMA - Numerous on blackjack oak in Stillwater area, Payne County. (Fenton).
- A MITE - IDAHO - Hatching of overwintering eggs on Douglasfir in Moscow area, Latah County, almost complete. (Manis).
- PINE ENGRAVER (Ips pini) - PENNSYLVANIA - Adults emerging. Infestation in a red pine plantation mostly in tree tops. Trees dying. (Udine).
- SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MICHIGAN - Samplings at Lansing, Grand Rapids and Birmingham April 30 and May 1 indicate are still in larval stage. (Hutson). KANSAS - Adults emerging in Manhattan area, Riley County. (Thompson).
- SAWFLIES - OKLAHOMA - Ragging pin oak in central area (Fenton) and common on persimmon in Bixby area, Tulsa County. (Coppock). PENNSYLVANIA - Neodiprion sertifer populations high in several red pine plantations, Luzerne County, and on red and Scotch pine with hatching April 29. (Drooz). CALIFORNIA - Tomostethus multinctus heavy on Modesta ash trees in Napa area, Napa County. (Cal. Coop. Rpt.).
- SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - No general emergence by May 6 in International Falls area, Koochiching County. (Minn. Ins. Rpt.).
- TENT CATERpillARS (Malacosoma spp.) - PENNSYLVANIA - M. americanum hatching April 14-16, Luzerne, Lackawanna and Monroe Counties. (Nichols). Appearing in Allegheny and Washington Counties. (Keeler). ALABAMA - M. disstria increasing from medium to heavy in certain areas, Mobile County. (Barry, Schmarkey, Seibels). MINNESOTA - No hatch of M. disstria north of Cloquet, Carlton County. (Minn. Ins. Rpt., May 5). UTÄH - Damaging apple, apricot, maple and flowering crab trees in Logan, Cache County. (Knowlton). NEVADA - Light on Anderson peachbush, western Douglas County. (Bechtel, May 2). CALIFORNIA - Heavy on deciduous oaks, St. Helena area, Napa County. (Cal. Coop. Rpt.).
- WEEVILS - PENNSYLVANIA - Hylobius pales and Pissodes approximatus 1957 fall feeding beginning to show and some feeding now in progress. Plantations previously sprayed require repeat. This is becoming quite a problem. (Udine).
- WHITE-PINE APHID (Cinara strobi) - INDIANA - Adults found May 3 at Rochester, Fulton County. (Schuder).

WHITE-PINE WEEVIL (*Pissodes strobi*) - MICHIGAN - Egg-laying in progress since April 20 in most parts of lower peninsula. (Hutson). PENNSYLVANIA - Began feeding on white-pine April 22, Adams County. (Drooz).

AZALEA LEAF MINER (*Gracilaria azaleella*) - CALIFORNIA - Heavy on azalea in Napa area, Napa County. (Cal. Coop. Rpt.).

BOXWOOD PSYLLID (*Psylla buxi*) - DELAWARE - Well developed nymphs attacking terminals of several boxwood species. (MacCreary, Conrad).

BRISTLY ROSE-SLUG (*Cladius isomerus*) - CALIFORNIA - Medium on roses in Oakland, Alameda County. (Cal. Coop. Rpt.).

SCALES - OKLAHOMA - A brown elm scale more common than usual on shade trees and ornamentals throughout State. (Coppock). NORTH DAKOTA - *Lepidosaphes ulmi* heavy on cotoneaster hedge at Fargo, Cass County. (N. D. Ins. Rpt.). ALABAMA - *Pulvinaria innumerabilis* extremely heavy on wild cherry, Lee County. As many as 6 per leaf and egg masses noted on grass and other debris under infested trees. This condition has persisted for past several years. *Icerya purchasi* heavy on pittosporum, Lee County. (Guyton).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - MARYLAND - On elms at Baltimore. (U. Md., Ent. Dept.).

SPRING CANKERWORM (*Paleacrita vernata*) - OKLAHOMA - Common on shade trees in eastern half of State. (Coppock). DELAWARE - Larvae feeding on elm in southern Kent and Sussex Counties. (MacCreary, Conrad).

WHITE-LINED SPHINX (*Celerio lineata*) - CALIFORNIA - Heavy on native plants in Inyo-Kern area, Kern County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

BLACK FLIES (*Simulium* spp.) - MARYLAND - Annoying at Delmar, Wicomico County, and Waldorf, Charles County. (U. Md., Ent. Dept.).

CATTLE GRUBS (*Hypoderma* spp.) - OREGON - *H. lineatum* failed to appear in three cattle herds at elevations above 4,000 feet during heel fly time in John Day area, Grant County. A protracted wet spring in 1957 is possible explanation for absence. *H. bovis* is abundant in same herds. (Goulding).

HORN FLY (*Siphona irritans*) - OKLAHOMA - Averaging 50-100 per animal generally in east central area. (Coppock). KANSAS - Economic infestations appearing on cattle in Manhattan area, Riley County. (Knutson). Ranged to highs of an estimated 400 on some animals. (Matthew). NEW MEXICO - Spraying underway statewide. (N. Mex. Coop. Rpt.). ALABAMA - Heavy on cattle, Bibb County. (Grimes). VIRGINIA - Emerged about May 5, Montgomery County. Averaged 10-30 per animal in small herd. (Hargett).

MOSQUITOES - SOUTH DAKOTA - *Aedes* spp. becoming nuisance in southeast areas. (Hantsbarger). COLORADO - Light trap collections mostly *Culex tarsalis* followed by *Culiseta inornata*, May 3. Recent surveys indicate drop in larval counts. Control underway in Ft. Collins area, Larimer County. (Exp. Sta.). UTAH - Annoying at Logan, Cache County. (Knowlton). MINNESOTA - Larvae of *Aedes stimulans*, *A. punctor*, *A. excrucians* and *A. dorsalis* in second, third and fourth instar in Twin City area. (Minn. Ins. Rpt.). NORTH CAROLINA - *Aedes sticticus* severe in Williamston area, Martin County, on Roanoke River and *A. sollicitans* severe from Manteo to Jacksonville on the coast. (Ashton). MARYLAND - *A. sollicitans* abundant and biting humans at various localities, St. Marys and Worcester Counties, and *A. canadensis* biting at Cedarville,

Queen Annes County. (U.Md., Ent.Dept.).

TICKS - UTAH - More numerous than usual, western Box Elder County. (Thomas, Knowlton). VIRGINIA - Wood ticks hatching and nymphs quite abundant in some areas, Chesterfield, Fauquier and Henrico Counties. (Matheny). OREGON - Dermacentor, probably albipictus, reported in larger numbers than usual getting on people from brush in Klamath County in late April. (Vertrees). RHODE ISLAND - D. variabilis general in several areas by May 4. (Stoner et al.).

STORED-PRODUCT INSECTS

INDIAN-MEAL MOTH (Plodia interpunctella) - VIRGINIA Larvae heavy in one lot of stored-grain, Amherst County. (Rowell).

A TENEBRIONID (Alphitophagus bifasciatus) - OKLAHOMA - Heavy in one bin of ground milo, Major County. (Coppock).

TULIP BULB APHID (Anuraphis tulipae) - IDAHO - Heavy on stored gladiola corms with considerable damage, Twin Falls, Twin Falls County. (Twin Falls Exp. Sta.).

BENEFICIAL INSECTS

AN ALFALFA WEEVIL PARASITE (Bathyplectes curculionis) - IDAHO - Common in most fields sampled, adults occasionally 3 per sweep. (Gittins).

A KLAMATHWEED BEETLE (Chrysolina gemellata) - NEVADA - Adults on new growth in Washoe Lake area, Washoe County. (Bechtel, Rebuffo, May 2).

PREDATORS -ARKANSAS - In northwest areas lady beetle adults averaged 3.4 per 10 sweeps with only one larve found, Chrysopa spp. less than 2 per 10 sweeps on legumes, Nabis sp. one per 10 sweeps and only one Geocoris sp. was found. (Boyer, May 3). NEBRASKA - Average per 100 sweeps in eastern alfalfa fields are 28 Nabis spp., 19 Orius spp., 10 lacewings and 15 lady beetles. (Andersen). NEVADA - Geocoris spp. heavy in alfalfa fields, Clark and Nye Counties. (Zoller, May 2). IDAHO - Nabid and lacewing adults quite common, occasionally 2 per sweep in south central areas. (Gittins). Lady beetle populations vary considerably from field to field throughout south central and western sectors. Adult activity greatly responsible for low aphid populations in fields. (Gittins, Waters). UTAH - Syrphids, lady beetles and lacewings common in some pea aphid infested alfalfa fields, Box Elder and Cache Counties. (Knowlton). ILLINOIS - Nabis spp. average 9.2 per 100 sweeps in clover and alfalfa in eastern sections and Coleomegilla maculata fuscilabris 4.2. (Ill. Ins. Rpt.).

MISCELLANEOUS INSECTS

CLOVER MITE (Bryobia praetiosa complex) - IDAHO - Very abundant in 2 homes in Idaho Falls, Bonneville County. (Kohl). Emergence from hibernation practically completed in Twin Falls area. Twin Falls County. (Twin Falls Exp. Sta.). CALIFORNIA - Heavy in church at New Cuyama, Santa Barbara County. (Cal. Coop. Rpt.). INDIANA - Large numbers invaded homes throughout State, most reports between April 12 and May 1. (Lehker).

COCKROACHES - NORTH DAKOTA - Two home infestations in central area. (N. D. Ins. Rpt.).

TERMITES (*Reticulitermes* spp.) - NEVADA - Many complaints from homeowners in Las Vegas area, Clark County. (Hoff, May 2). MICHIGAN - Swarms of R. flavipes reported from Reed City, Osceola County, April 25. (Hutson).

CORRECTIONS

CEIR 8(9):150 under section, "Insects Affecting Man and Animals" change Chorioptes caprae to read Chorioptes bovis.

CEIR 8(16):306 under citrus insects delete "OLIVE SCALE (Parlatoria olea) caused over \$200,000 damage to citrus in San Diego County"

CEIR 8(17):324 under scale insects change Phenaspis pinifoliae to read Toumeyella numismaticum.

CEIR 8(18):349 under predators, Wisconsin, change "Lady beetles quite abundant having overwintered in excellent condition ..." to read "Lady beetles quite abundant in Madison orchards where aphid populations appear to be light. Bees overwintered in excellent condition....."

CEIR 8(19):359 under GRASSHOPPERS, change Aelopes turnbulli to read Aeoloplides turnbulli.

CEIR 8(19):361 change CLOVER HEAD WEEVIL (Tychius stephensi) to read a CLOVER WEEVIL (Hypera meles).

ADDITIONAL NOTE

In reference to JAPANESE BEETLE note concerning the eradication treatments that were applied to infestation at Fort Madison, IOWA, in CEIR 8(16):299, should read as follows: A total of 1,925 acres were treated by airplane, and 75 acres by ground equipment, making a total of 2,000 acres. (PPC, Cent. Reg.).

LIGHT TRAP COLLECTIONS

	Pseud.	Agrot.	Felt.	Eueth.	Perid.	Prod.	Heliothis
	unip.	yps.	subt.	rugic.	marg.	ornith.	zea vires.
ALABAMA							
Crossville							8
4/21,24,28,5/1							
ARKANSAS							
Fayetteville 4/26-30	32		10			8	
Hope 4/24-30	32		1		4		2
Kelso 4/24-30	9		1		4		5
Stuttgart 4/24-30	25		9		1		3
FLORIDA							
Gainesville 5/6							1
Quincy 4/28							2
ILLINOIS							
Urbana 5/2-8		57			4		

LIGHT TRAP COLLECTIONS - continued								
	Pseud. unip.	Agrot. yps.	Felt. subt.	Eueth. rugic.	Perid. marg.	Prod. ornith.	Heliothis zea	vires.
INDIANA (Counties)								
Orange 4/23-5/5	883	72			21	2		
Tippecanoe 4/25-5/8	74	7			5	2		
LOUISIANA								
Baton Rouge 5/2-8	1	21	23	3	3	2	1	
Franklin 5/1-7			3	9	4			
MISSISSIPPI								
Senatobia 5/2-8	3	1						
State College 5/8-9	5							
*Stoneville 5/3-9	97	24	9		27	17	15	
NEBRASKA								
Kearney 4/8-20					5			
Lincoln 4/29-5/3	6	16						
North Platte 4/28-5/4	1				23			
Scotts Bluff Exp. Sta. 4/29-5/5					5			
NORTH CAROLINA								
Faison 5/8	1	2						
SOUTH CAROLINA								
Charleston 4/28-5/11	7	5	7		1	3	1	1
Clemson 5/3-5/9	61	6	2		4	1		
Florence 5/4-10	10	2		39				
SOUTH DAKOTA								
Brookings 5/6-7	6							
TENNESSEE (Counties)								
Blount 4/29-5/5	170	12			25	8		
Cumberland	8	2			7	3		
Greene	35	5			6	6		
Johnson	44	11			6	5		
Maury	153	10			14	8		
TEXAS								
Brownsville 4/28-5/2		14			22			
Waco 5/3-9	77		61		254	110	15	
Winter Haven 5/1,9	104	12			32	12		
VIRGINIA								
Painter 4/28	18							
WISCONSIN								
Middleton 5/2-4,7-8	12							
Platteville 5/2-4	39							

*Four traps Stoneville

SUMMARY OF INSECT CONDITIONS - 1957

NEW YORK

Reported by A. A. Muka*

Highlights: The winter of 1956 - 1957 was not generally severe. However, during a week in mid-January the temperatures went from 25 degrees below zero in most of central New York to 52 degrees below zero in a limited area of the Adirondacks. The build-up of LEAFHOPPERS (*Macrostelus* spp.) caused serious damage in many areas because of the transmission of the aster yellows virus to lettuce and celery. The western strain of the virus is moving east and some yellows believed associated was present on onions.

Cereal and Forage Crop Insects: Nymphs of MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) were first found April 24 near Marion. Populations were variable with very large numbers in some of the southern tier of counties, in the Hudson Valley and in some areas in the Finger Lakes Region. First adults were taken June 11. Unlike last year, populations of PEA APHID (*Macrosiphum pisi*) increased very slowly in the spring but from late July into September populations were much higher than at any time in 1955 and 1956. The increase in aphids during 1956 and 1957 is in marked contrast to the very low levels extending over a ten year period. First POTATO LEAFHOPPER (*Empoasca fabae*) was taken in Schoharie County May 27 in net sweeps and others in a light trap at Minetto May 29. Heavy damage occurred in the Hudson River Valley, Cortland Valley, the North Country and in western areas. SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) occurred in great numbers throughout the year. ALFALFA WEEVIL (*Hypera postica*) was found in 13 southeastern counties. Populations on Long Island averaged 3-5 larvae and adults per sweep. The ALFALFA SNOUT BEETLE (*Brachyrhinus ligustici*) was first found on ground surface April 12 being particularly destructive in the St. Lawrence area, Jefferson County. Of the various mirids, TARNISHED PLANT BUG (*Lygus lineolaris*) occurred in greatest numbers, being particularly destructive on birdsfoot trefoil seed pods. In such fields ALFALFA PLANT BUG (*Adelphocoris lineolatus*) and the RAPID PLANT BUG (*A. rapidus*) were also present. MEADOW PLANT BUG (*Leptopterna dolabratus*) injured small grains and grasses in western areas. As every year, small numbers of ARMYWORM (*Pseudaletia unipuncta*) were found in field corn and in some oat fields but no severe outbreaks occurred during 1957. However, CUTWORMS were very active in corn, several fields being replanted in western areas after the ravages of BLACK CUTWORM (*Agrotis ypsilon*). A severe outbreak of SPOTTED CUTWORM (*Amathes c-nigrum*) in Essex County birdsfoot trefoil in late July and August destroyed the maturing seed pods and much seed was lost. Of the Sitona weevils, only *S. hispidula* appeared in any great numbers. Unlike most years, *S. flavescens* was largely absent in legume fields. Larvae were particularly abundant in Ladino clover fields. Other WEEVILS (*Hypera meles*, *H. nigrirostris* and *H. punctata*) could be found in nearly all fields of the State but at no time did they constitute a problem. In the red clover seed growing areas near Ovid, Seneca County, CLOVER HEAD WEEVIL (*Tychius stephensi*) was present and destructive but the largest populations occurred on the first cutting which is seldom harvested as seed. GRASSHOPPERS were not abundant anywhere in the State and no damage was reported. CLOVER ROOT BORER (*Hylastinus obscurus*) averaged 6.6 per infested root. Approximately 40 percent of the first-harvest year plants are infested by fall of that year and between 80-100 percent of the plants are infested by the end of the second-harvest year.

* Other reporters include G. G. Gyrisco, G. E. R. Hervey, F. L. McEwen, J. A. Adams, P. H. Wooley, J. G. Matthisse, and Maurie Semel.

Vegetable and Truck Crop Insects: Long Island - MEXICAN BEAN BEETLE (Epilachna varivestis) was only occasionally a problem. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was very serious causing heavy damage which reduced yields in most lima bean plantings. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was light in most areas but heavy in a section of the North Fork where control was not satisfactory. POTATO FLEA BEETLE (Epitrix cucumeris) was light with only slight damage to some unsprayed early cobbler. POTATO APHID (Macrosiphum solanifolii) was light throughout season. BLACK CUTWORM (Agrotis ypsilon) continues somewhat destructive giving 10-15 percent injury in potato tubers. EUROPEAN CORN BORER (Pyrausta nubilalis) was less abundant than in 1956 on potatoes although few larvae were picked up in tubers. Light in all other susceptible crops except sweet corn. A LEAF MINER (Liriomyza sp.) was extremely abundant toward the end of the season. CORN EARWORM (Heliothis zea) infestation was high but not as serious as in 1956. Highest in earliest plantings and low in mid-season; heavy build-up after mid-August. CORN FLEA BEETLE (Chaetocnema pulicaria) was unimportant. CORN LEAF APHID (Rhopalosiphum maidis) showed marked decrease from last year. CORN SAP BEETLE (Carpophilus sp.) was not very heavy in ears. FALL ARMYWORM (Laphygma frugiperda) was occasionally difficult but well controlled with sprays. EUROPEAN CORN BORER (Pyrausta nubilalis) was heavy in sweet corn where special sprays were not applied, especially in early season by first generation. CABBAGE LOOPER (Trichoplusia ni) off from intense populations of past few years. Kept in check by virus disease of larvae and by recommended sprays. IMPORTED CABBAGE-WORM (Pieris rapae) appeared early and in heavy numbers but effectively controlled. CABBAGE APHID (Brevicoryne brassicae) was heavy early but decreased in numbers toward late season. SPINACH LEAF MINER (Pegomya hyoscyami) presented difficult control problem in some plantings early in the season.

Other Areas - CABBAGE LOOPER (Trichoplusia ni) light to moderate infestation but considerably more abundant than 1956. Definite resistance to DDT but still being fairly satisfactorily controlled with other insecticides. IMPORTED CABBAGEWORM (Pieris rapae) was moderate and readily controlled with many materials but showing some resistance to DDT. CABBAGE APHID (Brevicoryne brassicae) infestation was severe, reaching damaging proportions in early August and persisting throughout the season. Established infestations were difficult to control. SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) was much more abundant than in 1956 with concurrent increase of aster yellows on carrots, lettuce, and weed suspects. MEXICAN BEAN BEETLE (Epilachna varivestis) was moderate to severe and somewhat higher than in 1956. Damage to red kidney beans very evident during August and September, but readily controlled with properly-timed phosphate insecticides. STRIPED CUCUMBER BEETLE (Acalymma vittata) and SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) were more numerous than in 1956 with associated increase in incidence of bacterial wilt of cucurbits.

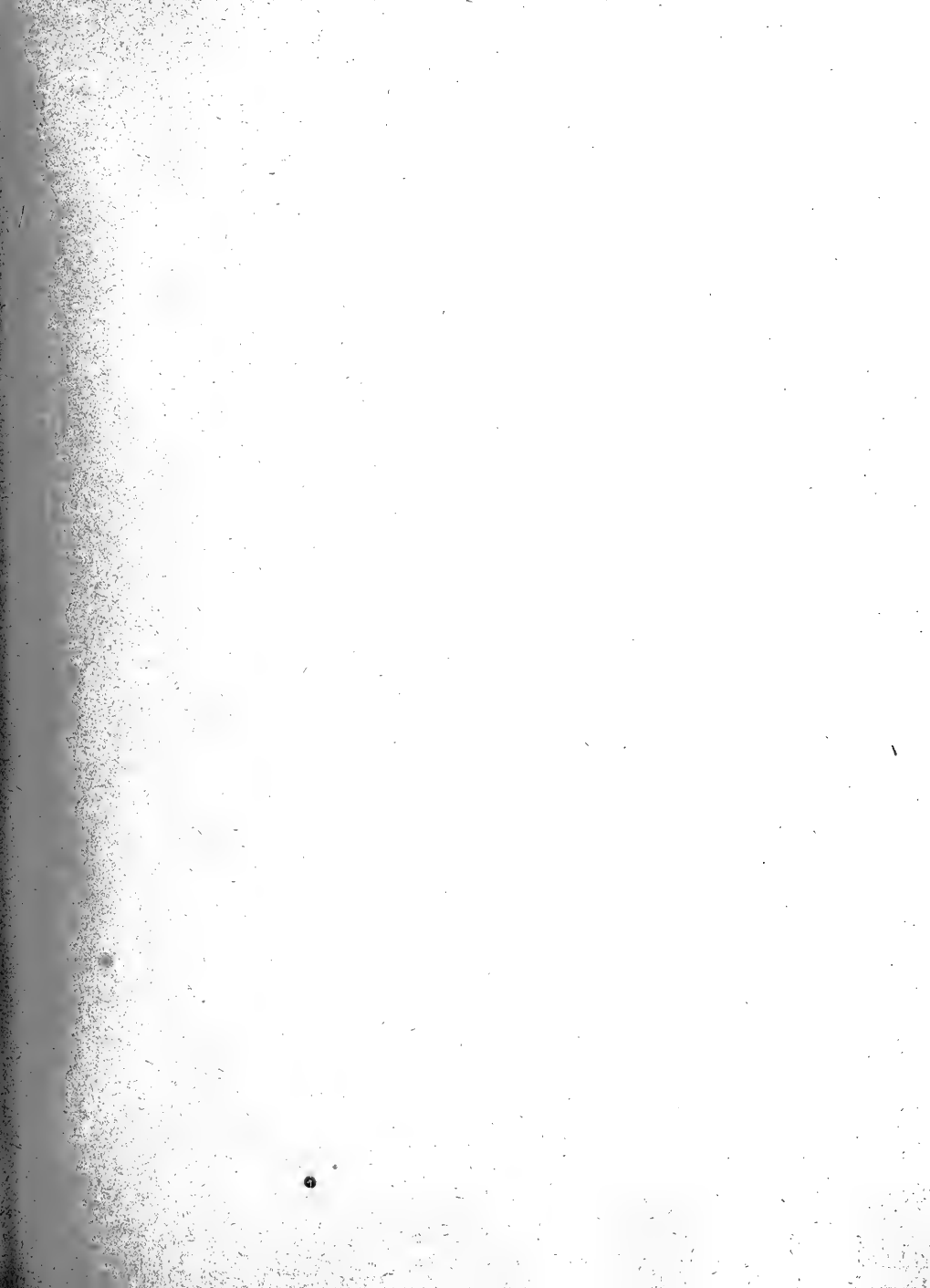
Corn Insects (Hudson Valley) - EUROPEAN CORN BORER (Pyrausta nubilalis) winter carry-over was heavier than in recent years. Moths first emerged May 13 when pupation was around 60 percent. Parasitism by Macrocentrus gifuensis caused about 25 percent mortality. Egg-laying become active in early June. Corn and borer development ran about two weeks earlier than usual; first brood pupated as early as June 22, three weeks earlier than in the late season of 1956. First-brood infestations observed in unsprayed early corn averaged 5-32 percent. In treated plantings, ear infestation ranged from less than 1 to 7 percent. The second brood appeared in late August, under cool conditions, and infestation of ears in untreated or poorly treated plantings ranged to about 10 percent compared with 70 percent in 1956. A limited fall survey of 8 sweet corn fields in Ulster and Dutchess Counties indicated that, where little or no treating had been done, larvae averaged about 30 per 100 stalks. In 7 plantings of untreated field corn the average was 13 per 100 stalks. The general average population entering the winter was estimated at 16 borers per 100 stalks or about one-sixth of the fall of 1956. Owing to the forage scarcity, destruction of borers through fodder use was probably greater than usual. CORN EARWORM

(*Heliothis zea*) in untreated corn in the Hudson Valley occurred in less than 1-11 percent of the ears before mid-July, ranging up to 40 percent by mid-August (50 percent in field corn), 80 percent by September 20, and thereafter to about 100 percent. Most commercial sweet corn was satisfactorily protected. FALL ARMYWORM (*Laphygma frugiperda*) was present on about 5-10 percent of untreated plants in pre-silk stages in late August but was rare in ears at harvest. It was easily controlled where insecticide was applied in the whorl stages. ARMYWORM (*Pseudaletia unipuncta*) was abundant in the adult stage but scarce and unimportant on corn as a superficial feeder on leaves and silk. BLACK CUTWORM (*Agrotis ypsilon*) caused up to 10 percent thinning in unsprayed plants in the whorl stages in portions of some fields by excavating plant bases in mid-June. CORN FLEA BEETLE (*Chaetocnema pulicaria*) was scarce in the spring averaging 1 per 100 plants. After mid-summer they were common (about 1 per plant in unsprayed corn) but did not become abundant. CORN SAP BEETLES (*Glischrochilus* spp. and *Carpophilus* spp.) were present in earliest plantings in June and later, but were scarcely economic. CORN LEAF APHID (*Rhopalosiphum maidis*) appeared on tassels in late July and was later fairly abundant but easily controlled.

Fruit Insects: Several days of high temperatures and low wind velocities during late April and May favored build-up of many early season insects in most fruit areas. FRUIT TREE LEAF ROLLER (*Archips argyrospila*) and EYE-SPOTTED BUD MOTH (*Spilonota ocellana*) caused extensive foliage damage in Hudson Valley orchards. Fruit injury by the TARNISHED PLANT BUG (*Lygus lineolaris*) was abnormally high for this area. PLUM CURCULIO (*Conotrachelus nenuphar*) was present in most orchards but control held injury to low levels in most commercial plantings. CODLING MOTH (*Carpocapsa pomonella*) was a minor problem in most orchards. APPLE MAGGOT (*Rhagoletis pomonella*) followed a more normal emergence curve in 1957 and was not a major problem. RED-BANDED LEAF ROLLER (*Argyrotaenia velutiana*) populations were high early in the season in most fruit areas. Red-banded leaf roller resistance to DDD is increasing in the western fruit belt, making this insect our biggest control problem. As high as 75 percent of the growers in Lake Ontario Counties reported difficulty in control. EUROPEAN RED MITE (*Panonychus ulmi*) and TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) were serious in some orchards. SAN JOSE SCALE (*Aspidiotus perniciosus*) is building up in orchards where oil sprays have not been used for several years or applications have been careless. CYCLAMEN MITE (*Steneotarsonemus pallidus*) is increasing in strawberry plantings each year. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) on strawberries on Long Island continues to be a serious problem. A GRAPE TOMATO GALL (*Lasioptera vitis*) is increasing in Hudson Valley vineyards.

Turf, Ornamental and Shade Tree Insects: ELM LEAF BEETLE (*Galerucella xanthomelaena*) infestations were unusually light. Late frosts probably influenced abundance of this and many other tree and shrub pests. In the Ithaca area, Tompkins County, untreated trees in test plots were so lightly infested no insecticide data could be obtained. More injury occurred in other areas, but not up to the normal infestation rate. SCALE INSECTS (*Lecanium corni* and possibly other species) were severe on elms in some up-state areas. *Aspidiotus ancyclus*, *A. ulmi*, *Chionaspis americana* and *Gossyparia spuria* populations were normal being severe on some trees in all parts of the State, and very variable in all locations. MITES (*Eotetranychus carpini* and vagrant eriophyids) continue to discolor elms in most of State, populations about normal. *Panonychus ulmi* on elms continued to be of sporadic occurrence, attacking some trees throughout State but populations variable everywhere. SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) continued to become abundant wherever suitable bark beetle breeding wood became available. Dutch elm disease incidence as determined by symptoms (not necessarily year of infection) appeared to be slightly increased over previous years. Infections in Brooklyn, Rochester, Syracuse, and Buffalo also increased. It is possible that summer drought conditions over several years has contributed to increased infection rates. JAPANESE BEETLE (*Popillia japonica*) adult injury has

continued severe in some areas of up-state New York particularly the Mohawk Valley and some communities further west. Drought conditions have continued to hold down turf injury by the larvae. Walnut and butternut trees in central areas were defoliated by WALNUT CATERPILLAR (*Datana integerrima*) in late summer. A DOGWOOD SAWFLY (*Macremphytus* sp.) has been noted as a structural pest by boring into wood of houses in order to pupate, in the Binghamton-Owego area, and Essex County. PINE ROOT COLLAR WEEVIL (*Hylobius radicis*) caused injury to Scotch pines in Christmas tree plantings and permanent plantings north of Saranac Lake, but the area was small. *Ips pini* and *Pissodes approximatus* continued to enter drought-injured and poor-site red pine, causing spotty mortality in plantations scattered through central and western New York. Mites, particularly SPRUCE SPIDER MITE (*Oligonychus ununguis*) and SOUTHERN RED MITE (*Oligonychus ilicis*) were not as serious as usual in southeastern New York. Severe drought conditions reduced populations in late spring and summer. In general insects and mites were less abundant than in the past in nurseries. Probable explanations are increased activity in nursery inspection and general use of an all-purpose spray schedule. HAIRY CHINCH BUG (*Blissus leucopterus hirtus*) caused some turf injury in the southeastern area. GYPSY MOTH (*Porthetria dispar*) eggs and larvae suffered very high mortality from winter and spring weather throughout the infested area. PINE TORTOISE SCALE (*Toumeyella numismaticum*) was reported severe on Scotch pine in a few Christmas tree plantings in Tompkins and Tioga Counties. A species of *Eucosma*, as yet undetermined, was found in Scotch pine twigs north of Saranac Lake. DOGWOOD CLUB-GALL MIDGE (*Mycodiplosis alternata*) has become a more serious pest in southeastern New York. PINE BARK APHID (*Pineus strobi*) is increasing in importance in the southeastern area and is not well controlled by current recommendations. A HEMLOCK SCALE (*Fiorinia externa*) has become serious on large as well as small hemlocks in northern Nassau County.





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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS hatching in southern Illinois, Kansas, southwestern Oklahoma and some other areas. Outbreak in Arizona damaged crops in some areas. Nymphs active in Idaho. (p. 403). EUROPEAN CORN BORER survival 80 and 85 percent in two Wisconsin counties. (p. 403). CORN EARWORM buildup in Florida. (p. 404). FLEA BEETLES abundant and damaging in several states. (p. 404, 410). ARMYWORM heavy in southwestern Oklahoma small grains, with moderate to heavy moth flights in Missouri and larger numbers in Virginia. (p. 404). FALL ARMYWORM increasing in Alabama. (p. 404).

Heavy CUTWORM damage to alfalfa expected in many Oklahoma localities. (p. 405). ALFALFA WEEVIL found for first time in 3 Virginia counties and causing heavy damage to unsprayed alfalfa in several states. (p. 405). SWEETCLOVER WEEVIL damaging clover in Idaho and Washington. (p. 406). PEA APHID threat to peas greater in Wisconsin than in 1957. (p. 406). POTATO LEAFHOPPER as far north as Kansas and Virginia. (p. 406).

CODLING MOTH emerging in Illinois, Delaware and Kansas. (p. 408).

BOLL WEEVIL survival in Tennessee. (p. 412). BROWN COTTON LEAFWORM in Louisiana and Texas. (p. 413).

CANKERWORMS more destructive in Kansas than in 9 years and causing some injury in Minnesota. (p. 415).

Distribution of a JAPANESE WEEVIL. (p. 414).

ADDITIONAL NOTES (p. 413). CORRECTIONS (p. 417).

Submission of Light Trap Material for Identification. (p. 418).

SUMMARY OF FOREST INSECT CONDITIONS - 1957. (p. 419).

Reports in this issue are for the week ending May 16 unless otherwise designated.

WEATHER OF THE WEEK ENDING MAY 12

Temperatures for the week averaged above normal over most of the Nation. Showers occurred west of the Continental Divide only on the first day, in the central Great Plains third to fifth days, in north central areas over the weekend, and in the Northeast about the middle of the period and again over the weekend. With mild temperatures and mostly fair weather, the period was most favorable for agriculture in the Midwest and Southeast for several weeks. In Tennessee last week was the warmest since last September and the first dry week over the entire State since February. However, in many lowland areas the soil was still too wet to work, some lowland flooding continued in Kentucky, and many lowland areas were still under water in Louisiana. On the 18th up to 10 inches of rain from Biloxi, Mississippi westward across southern Louisiana caused heavy local flood damage. The frequent rains in the central Great Plains totaled 2 to 4 inches in the western half of Kansas and caused some flooding. Up to 3 inches in extreme western Oklahoma and 2 to 4 inches in northwestern Texas maintained excellent prospects for small grains. In Colorado rains totaled 1 to 2 inches in the eastern plains, with some local flooding in the southeastern portion, and scattered hailstorms caused considerable crop damage.

Incipient drought conditions continued in an area extending from eastern Montana to Michigan, although showers on the 17th replenished topsoil moisture in Minnesota and some other sections of the area. In much of this region, total precipitation for the period January 1 through May 18 has been less than 50 percent of normal. In Wisconsin, small streams and ponds are drying, and the water table is lowering rapidly. Dry soil has slowed corn planting in both Wisconsin and Michigan. A cold snap in the Northeast at the beginning of the period was responsible for freezing in eastern New York State and parts of New England. The weather was abnormally cool in the Northeast until an abrupt change occurred during the weekend when maximum temperatures rose into the 70's and 80's. Also at the beginning of the period a cold spell in the Pacific Northwest reduced temperatures nearly to record low levels for the season. Freezing occurred in most valleys of Washington, and in Oregon widely scattered frost occurred and up to an inch of snow fell in the north-eastern part of the State. (Summary supplied by U. S. Weather Bureau.)

WEATHER BUREAU 30-DAY OUTLOOK

MID-MAY TO MID-JUNE 1958

The Weather Bureau's 30-day outlook for mid-May to mid-June calls for temperatures to average slightly below seasonal normals east of the Appalachians and in the extreme Southeast. Above normal temperatures are predicted over the northern half of the area lying between the Great Lakes and the Rockies, as well as along the West Coast. In unspecified areas near normal averages are in prospect. Precipitation is expected to be subnormal over the Pacific Northwest and particularly over the Great Lakes and Upper Mississippi Valley where rainfall has been generally deficient for almost two months. Above normal rainfall is anticipated over the Central and Southern Plateau States and in the Southern Plains. Near normal amounts are indicated for areas not specified.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WISCONSIN - Most adults and nymphs so far observed are of overwintering non-economic species. Eggs of economic species in clear stage, but continued dry weather and slow and sparse vegetative growth with high temperatures could increase potential threat to forage this season. (Wis. Coop. Sur.). MINNESOTA - Eggs of Melanoplus femur-rubrum in clear to coagulated stage in southeastern and south central districts. Generally clear in heavier soils and coagulated in lighter soils of central and west central districts. Eggs of M. bivittatus in heavier soils of Stearns, Wilkin and Otter Tail Counties are coagulated and are in eye-spot stage on lighter soils of Stearns and Todd Counties. (Minn. Ins. Rpt.). ILLINOIS - Beginning to hatch in southern areas. (Ill. Ins. Rpt.). NORTH DAKOTA - Egg development survey completed in western area May 9 showed M. bivittatus 65 percent segmented, 35 percent eye-spot, and M. differentialis and M. bilituratus 50 percent segmented and 50 percent eye-spot. No evidence of hatch in area surveyed. (N. D. Ins. Rpt.). Overwintering nymphs and adults of Psoloessa delicatula and Eritettix spp. present but not numerous, Billings County. (Burge). SOUTH DAKOTA - Eggs of M. bivittatus approximately 5 percent hatched in extreme southeastern areas, nymphs averaging 10-12 per square yard along some field margins and roadsides. (King, Hantsbarger). KANSAS - Hatch underway across State. Melanoplus spp. nymphs readily found nearly all fields surveyed in 3 east central and 4 northeast counties. Nymphs range 2-7 per square yard where found. Heavy counts of nymphs indicated in abandoned and weedy fields in southwestern area. (Matthew). OKLAHOMA - Hatching continuing in southwestern counties. Rangeland numbers generally light, 2-8 nymphs per square yard. M. bivittatus and M. differentialis nymphs mostly second to fourth instar. (Coppock). MONTANA - Based on 1957 surveys, extensive areas of Indian and Bureau of Land Management lands in Blaine, Phillips and Garfield Counties may be infested in 1958. (PPC, West. Reg. Apr. Rpt.). WYOMING - Some 10,000 acres of Bureau of Reclamation rangeland in Fremont County are infested with grasshoppers, and the infestation threatens crops in the Riverton area. (PPC, West. Reg. Apr. Rpt.). IDAHO - First-instar nymphs appearing in clover and alfalfa fields, along roadways and ditch banks and on range in most southwestern and south central areas. (Waters, Gittins, Smith). UTAH - Moderately numerous in local areas as far north as Cove Fort, Millard County and Beaver, Beaver County. Most threatening in Enterprise, Beryl and Newcastle areas of Washington and Iron Counties. Some hatching in warmer areas and on south slopes in several counties. Third-instar nymphs extremely abundant in some alfalfa fields at Moab, Grand County. (Knowlton). NEVADA - First-instar Oedaleonotus enigma appeared in the sheltered canyon of burned-over areas where cheat grass covers the range in central Elko County. Camnula pellucida hatching in isolated areas, but main hatch not yet reached. (PPC, West. Reg. Apr. Rpt.). NEW MEXICO - Trimerotropis pallidipennis averaged 5-10 per square yard near Hachita, Grant County. (N. Mex. Coop. Rpt.). ARIZONA - T. pallidipennis developed in outbreak numbers in many areas on large acreages of desert range adjacent to croplands in Pinal and Maricopa Counties. Nymphal and adult migrations began when desert grasses suddenly dried with advent of warm weather. Damage was especially severe in the Maricopa-Casa Grande-Coolidge area, particularly to sprouting cotton in the immediate paths of migrating bands of nymphs. (PPC, West. Reg. Apr. Rpt.). CALIFORNIA - Trimerotropis sp. light on alfalfa in Calxico area, Imperial County and M. bilituratus light on same crop in this area and in Imperial area. Melanoplus sp. heavy on range grass and lawns at Ukiah, Mendocino County. Stichippus californicus and Oedaleonotus enigma heavy on grazing lands and in fields in Cuyama Valley, Santa Barbara County. (Cal. Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MINNESOTA - No pupation observed in southeastern and south central districts. (Minn. Ins. Rpt.). NORTH CAROLINA - Two-thirds emerged Pasquotank County. (Jones). IOWA - Pupation 32 percent on May 15, compared with 2 percent on same date in 1957. (Iowa Ins. Inf.). WISCONSIN - Counts indicate 80 percent survival in Dane County and 85 percent in Rock County. (Wis. Coop. Sur.). ILLINOIS - Pupation 10 percent in southern

and 0 in central areas. (Ill. Ins. Rpt.). MISSOURI - Approximately 10 percent pupation in standing stalks, Boone County, May 12. Overwintering larvae averaged 994 per acre, Boone County, and 1,221 in Henry County. (Munson).

CORN EARWORM (*Heliothis zea*) - FLORIDA - Inspection of corn in the Ft. Myers area, Lee County, indicates buildup. One field was 40-50 percent infested. (Fla. Coop. Sur., May 9). ALABAMA - Eggs on early sweet corn, Baldwin County. (Eden). Larvae and adults plentiful, Lee County. (Guyton).

FLEA BEETLES - VIRGINIA - Adult *Epitrix* sp. feeding on seedling corn in some fields, Pittsylvania County. (Dominick). MINNESOTA - Four to 15 per 10 sweeps in alfalfa fields. (Minn. Ins. Rpt.). OKLAHOMA - Replanting of corn in Johnston County due to severe damage. Remain abundant throughout State, but damage lessened as corn is making good growth. (Coppock, Vick). OREGON - Unusual damage to crimson clover, Polk County. (Dickason). TEXAS - Large numbers of *Chaetocnema* sp. in corn, Rockwall County. (Hawkins). Some corn showing severe damage, Grayson and Collin Counties. (Chada). MISSOURI - *Chaetocnema pulicaria* damage to corn continues over much of southern two-thirds of State, 2-6 beetles per plant with 90-100 percent of plants showing damage. (Kyd, Thomas). KANSAS - *C. pulicaria* heavy in nearly all corn fields throughout eastern half of State; destructive in some fields. Averaged 2-3 per plant in Kansas River Valley. (Matthew). Averaged 7 per plant, Riley County. (Burkhardt).

BILLBUGS - GEORGIA - Moderate to heavy on corn in 13 counties. (Johnson). ALABAMA - *Calendra maidis* light in Dallas and Crenshaw Counties. (Grimes).

ARMYWORM (*Pseudaletia unipuncta*) - ARKANSAS - Averaged 4-5 first and second-instar larvae per square foot in oats, Arkansas County. (Boyer, Rouse). LOUISIANA - Decreasing in Tensas Parish, with 2 per 100 sweeps on oats and wheat. (Glower, Spink). OKLAHOMA - Heavy in margins of small grains and in roadsides, southwestern counties, commonly 15-45 larvae per square yard. Mostly early to mid-instar larvae. Spray program warranted in field margins. (Coppock, Hatfield). ILLINOIS - Few in grain fields, 18 per 100 sweeps in grass, southwestern areas. (Ill. Ins. Rpt.). TEXAS - Ranged 4-15 per square foot in vetch and small grain, Delta, Hunt and Rockwall Counties. (Hawkins). MISSOURI - First and second-instar larvae range 8-20 per square foot in barley and 2-4 in wheat, extreme southeast area. Moderate to heavy moth flight continues over most of State. (Harrendorf). ALABAMA - Serious damage to wheat and oats in Dallas County. (Grimes). VIRGINIA - Being taken in larger numbers in light trap at Norfolk than during past two years, but no field infestations have been noted as yet. (Hofmaster).

CHINCH BUG (*Blissus leucopterus*) - ALABAMA - Light damage to corn in southern areas. (Grimes). MISSOURI - Migration from overwintering habitat complete. Adults range 1-7 per linear foot of row in small grains. Unusual number of adults on seedling corn, with damage in southwest and north central areas. (Kyd, Thomas).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - ARKANSAS - Very low. (Boyer). OKLAHOMA - Numbered 0-40 per head of wheat with 65-80 percent of heads infested in southwestern counties. Considerably lighter in central and northern counties. (Coppock, Hatfield). ILLINOIS - Average 200 per 100 sweeps in southwestern wheat. (Ill. Ins. Rpt.). SOUTH DAKOTA - Winged forms in some central area winter wheat fields, averaging one per 10 sweeps. (Hantsbarger). KANSAS - Increasing. Range 6-30 per sweep in east central area. About 10 percent of barley heads infested with average of one per head. (Matthew).

FALL ARMYWORM (*Laphygma frugiperda*) - LOUISIANA - Infestation in corn up to 60 percent. (Spink et al.). ALABAMA - Increasing in Baldwin and Escambia Counties. (Eden, Grimes).

A SAWFLY (Macrophya pluricincta) - CALIFORNIA - Heavy in wheat fields in Livermore area, Alameda County. (Cal. Coop. Rpt.).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Extremely abundant among weeds and in windbreaks adjacent to small grain fields in Enterprise area, Washington County. (Knowlton).

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - Considerable damage to corn stands in southern areas, with 20 acres completely destroyed in Conecuh County. (Grimes).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Larval infestation ranged 7-35 percent in 11 plantations examined in 9 parishes. First record of pupae of first-generation larvae made from Terrebonne Parish, with 7 found. (Hensley, Long, Spink).

WIREWORMS - WISCONSIN - Several counties report large numbers. (Wis. Coop. Sur.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - SOUTH DAKOTA - Light populations appearing in southeastern alfalfa fields, approximately one larva per 50 sweeps. (Hantsbarger).

RICE STINK BUG (Oebalus pugnax) - ARKANSAS - Averaged 4-8 per 10 sweeps on oats in southeast counties. (Boyer).

CUTWORMS - MASSACHUSETTS - Damaging alfalfa. (Wheeler, May 9). ARKANSAS - Second and third instar larvae of Peridroma margaritosa found 4-8 per square yard in vetch and oats, Lafayette County. (Boyer). OKLAHOMA - Peridroma margaritosa heavy in most alfalfa fields in 4 southwestern counties, 25-45 larvae per 10 sweeps common. Moderate to heavy damage expected in many localities. Egg deposition heavy. (Coppock). WISCONSIN - Several counties report large numbers. (Wis. Coop. Sur.). ILLINOIS - P. margaritosa averaged 5.3 per 100 sweeps in southwestern legumes. (Ill. Ins. Rpt.). TEXAS - P. margaritosa ranged 4-15 per square foot in vetch and small grain, Delta, Hunt and Rockwall Counties. (Hawkins). MISSOURI - Very small larvae of P. margaritosa appearing in alfalfa, ranging 0-2 per square foot, with hatch continuing. (Kyd, Thomas).

GREEN CLOVERWORM (Plathypena scabra) - MINNESOTA - Larval numbers low in alfalfa, Dakota, Fillmore and Freeborn Counties. Very damaging to soybeans and seedling alfalfa in 1957. (Minn. Ins. Rpt.).

ALFALFA WEEVIL (Hypera postica) - NEW JERSEY - Causing heavy damage in unsprayed alfalfa in southern areas. Damage as far north as Warren County. (Ins. Dis. Newsl.). MARYLAND - Damage moderate to heavy on unsprayed alfalfa, eastern and central sections. (U. Md., Ent. Dept.). DELAWARE - First pupae collected in eastern Sussex County, May 13. Unsprayed fields showing visible damage in all parts of State. (MacCreary, Conrad). VIRGINIA - Larvae continue to damage alfalfa in many parts of the State. Found for the first time in Bland, Smyth and Tazewell Counties. (Morris). UTAH - Damage severe at Green River, Emery County. (Knowlton). IDAHO - Larvae continue light in most alfalfa fields throughout south central and southwestern areas. Adults also light most areas, seldom exceed one per sweep. (Gittins).

CLOVER LEAF WEEVIL (Hypera punctata) - NEW JERSEY - Injury more apparent than usual. (Ins. Dis. Newsl.). MASSACHUSETTS - Abundant and pupating. (Wheeler, May 9). VIRGINIA - Larvae averaged 4 per 100 sweeps in 35 southwestern alfalfa fields. (Morris). IOWA - Average 5 per plant in Linn County. (Iowa Ins. Inf.).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - ILLINOIS - Injury to stems 30 percent in west southwest and 45 percent in southwestern localities. (Ill. Ins. Rpt.).

PEA LEAF WEEVIL (Sitona lineata) - OREGON - Varies from trace to 3-5 per sweep in vetch and clover fields. (Capizzi).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - IDAHO - Damage to sweetclover in Nez Perce County. (Kambitsch, Portman). MINNESOTA - Not yet evenly distributed in a field sampled near Crookston, Polk County. (Minn. Ins. Rpt.). IOWA - Average 1 per sweep in alfalfa and clover. (Iowa Ins. Inf.). WASHINGTON - Damaging experimental sweetclover in Whitman County. (Telford).

LYGUS BUGS (Lygus spp.) - IDAHO - Populations from 1-20 per sweep in southwestern alfalfa and red clover with nymphs appearing in considerable numbers. (Gittins). MINNESOTA - L. lineolaris ranges 1-12 per 10 sweeps in alfalfa in southeastern and south central districts. (Minn. Ins. Rpt.). NEW MEXICO - Very heavy in range weeds and alfalfa, Luna County. Average 1 adult and 4 nymphs per sweep in alfalfa, Socorro County. (N. Mex. Coop. Rpt.). WISCONSIN - Overwintering L. lineolaris adults in most alfalfa fields, highest average 2 per sweep in a Sauk County field. (Wis. Coop. Sur.). ILLINOIS - L. lineolaris adults average 32 per 100 sweeps in west southwest and 24 in southwest. (Ill. Ins. Rpt.). SOUTH DAKOTA - Average 6 per 10 sweeps in some alfalfa fields in southeastern, central and east central areas. Recently hatched nymphs appearing. (Hantsbarger).

PLANT BUGS - MINNESOTA - Adelphocoris lineolatus and A. rapidus hatching in small numbers in southeastern alfalfa and clover fields. (Minn. Ins. Rpt.). ILLINOIS - Average per 100 sweeps is 27 in west southwest and 49 in southwest. (Ill. Ins. Rpt.).

PEA APHID (Macrosiphum pisi) - NEW JERSEY - Less numerous than usual on alfalfa. (Ins. Dis. News1.). MARYLAND - Generally light in central sections, but building up rapidly in alfalfa on Eastern Shore with as many as 200 per sweep. (U. Md., Ent. Dept.). VIRGINIA - Generally light to medium in 35 alfalfa fields surveyed in southwestern counties, averaging 33 per sweep. (Morris). Has increased rapidly in Augusta County, damaging in a few alfalfa and clover fields. (Woodside). MINNESOTA - Ranges 7-18 per 10 sweeps in alfalfa in southeastern and south central districts. (Minn. Ins. Rpt.). WISCONSIN - Being favored by weather conditions, reproducing rapidly in alfalfa, 0.5-10 per one sweep in 16 counties. Potential threat to peas greater than at same time in 1957. (Wis. Coop. Sur.). ILLINOIS - Averages per 100 sweeps are 1,160 in west southwest, 5,000 in southwest and 480 in northern areas. Fungus disease prevalent in southern sections. (Ill. Ins. Rpt.). IOWA - Ranges 1-10 per sweep. (Iowa Ins. Inf.). ARKANSAS - Reduced to very small numbers in areas checked. (Boyer). MISSOURI - Ranges 9-95 per sweep of alfalfa, southwest area. Most fields too far along in growth and development for extensive damage. (Kyd, Thomas, May 10). SOUTH DAKOTA - Has increased up to 50 per 10 sweeps on alfalfa in southeastern, central and east central areas. (Hantsbarger). KANSAS - Light to moderate in nearly all alfalfa fields examined in east central and northeastern counties, ranging to near 300 per sweep. (Matthew). OKLAHOMA - Low numbers in most southwestern alfalfa. (Coppock). IDAHO - Lower than expected in southwestern and south central alfalfa fields, averages approximately 3 per sweep. (Gittins). NEW MEXICO - Moderate to heavy in southern county alfalfa fields. (N. Mex. Coop. Rpt.).

YELLOW CLOVER APHID (Therioaphis trifolii) - ILLINOIS - Averages 412 per 100 sweeps of red clover in southwestern areas. (Ill. Ins. Rpt.).

POTATO LEAFHOPPER (Empoasca fabae) - MINNESOTA - None found to May 16. (Minn. Ins. Rpt.). KANSAS - Averaged 8 per 100 sweeps on alfalfa in localized areas

of Shawnee and Douglas Counties. (Matthew).*

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - None found to May 16. (Minn. Ins. Rpt.). SOUTH DAKOTA - Up to 4 per 10 sweeps in alfalfa in central area and up to 14 per 10 sweeps in wheat, central and south central areas. (Hantsbarger).

SPITTLEBUGS - MASSACHUSETTS - Difficult to find. (Wheeler; May 9). NEW JERSEY - Causing concern on clover but damage to alfalfa will be light. (Ins. Dis. News1.). VIRGINIA - P. leucophthalmus generally medium to heavy in alfalfa fields surveyed in southwestern counties. (Morris). WISCONSIN - overwintering eggs of P. leucophthalmus mostly hatched. Nymphal numbers vary between fields and between localities. (Wis. Coop. Sur.). MICHIGAN - Philaenus leucophthalmus 50 percent hatched in the Niles-Benton, Harbor-South Haven triangle, May 2. (Hutson). ILLINOIS - Nymphs of P. leucophthalmus in first-year hay crop average 95 per 100 sweeps in northern 2 or 3 tiers of counties. (Ill. Ins. Rpt.). IOWA - P. leucophthalmus increased in Tama County, averaged 1 per square foot in Cedar County. (Iowa Ins. Inf.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ALABAMA - Found for first time in Fayette and Lamar Counties, very light. (Grimes). ARKANSAS - None found in southwest where present earlier. (Boyer). MISSOURI - None found in southwest area. (Kyd, Thomas, May 10). KANSAS - None found in alfalfa fields surveyed in 3 east central and 4 northeastern counties. (Matthew). Slight buildup in Sedgwick County. (Gates). OKLAHOMA - Remains light in southwestern and south central counties, but averages 200-300 per 10 sweeps in a few fields, Washita and Harmon Counties. (Coppock, Hatfield). TEXAS - Scarce in north central alfalfa fields. (Chada). NEW MEXICO - Heavy populations continue to damage alfalfa in Chaves, Eddy, Dona Ana and Luna Counties. Light in Sierra and Socorro Counties. (N. Mex. Coop. Rpt.). UTAH - Remains scarce in Washington County. (Knowlton). CALIFORNIA - Light in Maxwell area, Colusa County. (Cal. Coop. Rpt.).

SWEETCLOVER APHID (Myzocallidium riehmii) - MINNESOTA - Sampling in Crookston-Fisher area, Polk County, indicates very low populations, but may be too early for reliable estimate of expected populations. (Minn. Ins. Rpt.).

THRIPS - NEW MEXICO - Very abundant in seedling alfalfa, Dona Ana, Eddy and Luna Counties. (N. Mex. Coop. Rpt.). CALIFORNIA - Limothrips cerealeum heavy on corn in Spring Valley, San Diego County. (Cal. Coop. Rpt.).

VETCH BRUCHID (Bruchus brachialis) - OKLAHOMA - Averaged 2-4 per 10 sweeps in one vetch field, Kingfisher County. (Coppock). TEXAS - Five per sweep in vetch, Van Zandt and Delta Counties. (Hawkins). Heavy in Kaufman County. (Randolph).

A WEBWORM (Loxostege sp.) - TEXAS - Large infestation in alfalfa, Burleson County. (Randolph).

*VIRGINIA - First records of season; one adult per 100 sweeps in each of Smyth and Washington Counties. (Morris).

FRUIT INSECTS

- RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - NEW JERSEY - Active on apples in Gloucester County. (Ins. Dis. Newsl.). ILLINOIS - Hatch practically complete at Carbondale. (Meyer). INDIANA - Egg masses at Vincennes and Linton 74 percent hatched on May 6 and 7. (Hamilton). MICHIGAN - Hatching at Niles, Coloma and Benton Harbor May 9. (Hutson). VIRGINIA - Hatching May 8 in apple orchards in Augusta County. (Woodside). MINNESOTA - Adults observed in southeastern orchard area. (Minn. Ins. Rpt.). WISCONSIN - Adults emerged and began ovipositing last of April, Door County. (Wis. Coop. Sur.). WEST VIRGINIA - Peak hatch of first brood passed on apple in eastern panhandle. (W. Va. Ins. Sur.).
- PLUM CURCULIO (Conotrachelus nenuphar) - ILLINOIS - Numbers jarred not increasing at Carbondale. (Meyer). INDIANA - On May 12, 186 adults jarred from 5 peach trees in abandoned orchard at Vincennes compared with 53 for previous week. (Hamilton). MICHIGAN - Active at Niles, Sodus and St. Joseph. (Hutson). MINNESOTA - Emergence begun in southeastern area. (Minn. Ins. Rpt.). NORTH CAROLINA - Larvae reached pits of peaches in Rockingham County. (Farrier). GEORGIA - Peach drop caused by plum curculio over and 5,552 larvae have emerged to May 12, from a bushel of drops picked up in a commercial peach orchard in Fort Valley. (Snapp). PENNSYLVANIA - First cutting of plum, Adams County. (Adams). MASSACHUSETTS - Total of 12 curculio beetles jarred from test trees through Monday, May 19 at Waltham. (Crop. Pest Cont. Mess.).
- CODLING MOTH (Carpocapsa pomonella) - ILLINOIS - Began emerging May 11 at Anna. (Meyer). DELAWARE - Adult emergence begun on May 13 from cage in Kent County. (MacCreary, Conrad). KANSAS - Emerging in orchards in Sedgwick and Reno Counties. (Eshbaugh).
- ORIENTAL FRUIT MOTH (Grapholitha molesta) - MICHIGAN - Adults observed at Coloma, May 10. (Hutson).
- ROSY APPLE APHID (Anuraphis roseus) - INDIANA - A. roseus and Rhopalosiphum fitchii continue to attack apples heavily at Orleans. (Marshall). One infestation of A. roseus at Vincennes heavy enough to warrant control. (Hamilton). MICHIGAN - Scarce in Coloma, Paw Paw, Allegan and South Haven area. (Hutson, May 7). MARYLAND - Damage to apple leaves noted in Talbot County. (U. Md., Ent. Dept.). VIRGINIA - Light in apple orchards in Augusta County. (Woodside).
- WATERLILY APHID (Rhopalosiphum nymphaeae) - CALIFORNIA - Heavy on plums in Madera County. (Cal. Coop. Rpt.).
- GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Heavy damage to peach trees throughout State. (N. Mex. Coop. Rpt.). WASHINGTON - Alate-spring migrants south of Wenatchee. (Landis).
- APPLE APHID (Aphis pomi) - IDAHO - Infestations developing on apples in Payette and Fruitland areas. (Gittins). VIRGINIA - Common some apple orchards in Augusta County. (Woodside).
- APPLE GRAIN APHID (Rhopalosiphum fitchii) - WISCONSIN - Very numerous on apple fruit stems in Gays Mills and other areas. (Wis. Coop. Sur.).
- EUROPEAN RED MITE (Panonychus ulmi) - ILLINOIS - Numerous eggs being laid at Carbondale. (Meyer). INDIANA - Populations at Vincennes light; first-brood adults laying eggs May 7. (Hamilton). MICHIGAN - Fifty percent hatched on apples and plums in several areas. (Hutson, May 3). WISCONSIN - Hatching in Door County about May 9. (Wis. Coop. Sur.). SOUTH DAKOTA - Adults feeding on apple leaves in Brookings vicinity. (Hantsbarger). WEST VIRGINIA - Building up slowly on apple in eastern panhandle. (W. Va. Ins. Sur.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Heavy infestations developing on pear trees in Fruitland and Payette areas; particularly in orchards where dormant sprays neglected. (Gittins). OREGON - Building up noticeably in some pear orchards in Marion and Yamhill Counties. (Stephenson).

CLOVER MITE (Bryobia praetiosa complex) NEW MEXICO - Light to heavy on apples in fruit-growing areas. (N. Mex. Coop. Rpt.). CALIFORNIA - Heavy on peach trees in Placerville area of El Dorado County. (Cal. Coop. Rpt.).

CATFACING INSECTS - ILLINOIS - Stink bugs very active on peaches and apples at Carbondale. (Meyer).

CALIFORNIA PEAR-SLUG (Pristiphora californica) - OREGON - An unusually heavy outbreak caused defoliation in a few orchards in Medford area, May 8. (Gentner).

FRUIT TREE LEAF ROLLER (Archips argyrospila) - OREGON - Abundant in local areas of Yamhill County, especially on pears. (Stephenson).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - WASHINGTON - Light to heavy damage to apricot. (Anthon).

A LEAF ROLLER (Archips rosana) - OREGON - Local serious infestations developing in Polk and Benton County filbert orchards where this pest was abundant a year ago. (Stephenson, Capizzi).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - First pupae found May 12 at Vincennes. (Hamilton).

PEAR PSYLLA (Psylla pyricola) - IDAHO - Adults becoming increasingly active on pears in Fruitland and Payette areas. (Gittins).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Heavy on apple trees. Young scales on fruit. (Guyton).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - OREGON - First adult of season at The Dalles, May 12. (Ellertson).

PECAN LEAF CASEBEARER (Acrobasis juglandis) - ALABAMA - Heavy in Escambia County. Beginning to pupate in Baldwin County. (Grimes, Eden).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - PENNSYLVANIA - General in Lancaster County on potato. (Pepper). DELAWARE - Adults common and depositing eggs on potatoes in Sussex County. (MacCreary, Conrad). MARYLAND - Moderate numbers of adults on potatoes at Quantico. (U. Md., Ent. Dept.). NORTH CAROLINA - Early-instar larvae feeding on eggplant and potatoes in Duplin County. (Reid, Farrier). GEORGIA - Light on tomatoes in five counties. (Johnson). ALABAMA - Heavy on potatoes in central area. (Grimes). IDAHO - First adult of season in Moscow area. (Manis).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NORTH CAROLINA - Adults abundant in potato fields in Pasquotank County with oviposition observed. (Jones).

GRASSHOPPERS (Trimerotropis spp.) - NEW MEXICO - Caused reduction of tomato stands near Deming, Luna County. (N. Mex. Coop. Rpt.).

IMBRICATED SNOUT BEETLE (Epicaerus imbricatus) - ALABAMA - Severe damage to tomato plants in Blount County. (Grimes).

FLEA BEETLES - DELAWARE - Epitrix cucumeris common on potatoes in central Kent County. (MacCreary, Conrad). MARYLAND - Light to moderate numbers of Epitrix hirtipennis on tomatoes and potatoes and E. cucumeris on potatoes on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Extensive damage to young tomato plants and general on potatoes on Eastern Shore. (Hofmaster). NORTH CAROLINA - Severe damage to some fields of eggplant caused by Epitrix fuscata in Duplin County. (Farrier, Reid, Weisman). E. cucumeris numerous on potatoes in Pasquotank County. (Jones, Weisman). IOWA - E. cucumeris common on potatoes. (Iowa Ins. Inf.). WISCONSIN - Heavy populations on tomato and cabbage transplants, radishes and potatoes in some counties. (Wis. Coop. Sur.). IDAHO - Severe infestations and damage from adult Phyllotreta pusilla on beets and radishes in parts of Minidoka and Cassia Counties. (Gittins, Priest).

CUTWORMS - MASSACHUSETTS - Unusually abundant on truck crops. (Wheeler). IDAHO - Early instars of Euxoa ochrogaster causing sufficient defoliation to require control in sugar beet fields in Jerome County. (T.F.F.S.). NORTH DAKOTA - Numerous reports of injury to young vegetable transplants from Fargo area. (N. Dak. Ins. Rpt.). CALIFORNIA - Diarsia rosaria lightly damaging strawberries in Salinas area of Montgomery County. (Cal. Coop. Rpt.). ALABAMA - Damaged tomatoes in Blount County. (Grimes). WASHINGTON - Heavy larval damage by Euxoa spp. on 8 acres of a 50-acre hop field at Union Gap. (Landis).

IMPORTED CABBAGEWORM (Pieris rapae) - MARYLAND - Occasionally noted on cabbage north of Salisbury. (U. Md., Ent. Dept.). NORTH DAKOTA - First adults May 6 at Fargo. (N. Dak. Ins. Rpt.). WISCONSIN - Adults appeared. (Wis. Coop. Sur.). ALABAMA - Numerous on cabbage in Lee County. (Guyton).

DIAMONDBACK MOTH (Plutella maculipennis) - ALABAMA - Heaviest infestation on cabbage in Lee County in 8-10 years. (Guyton).

HARLEQUIN BUG (Murgantia histrionica) - NORTH CAROLINA - First adult of season seen on mustard in Duplin County. (Farrier).

CABBAGE MAGGOT (Hylemya brassicae) - MASSACHUSETTS - Very heavy egg-laying at Waltham. (Crop Pest Cont. Mess.).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Larvae damaging lettuce in many fields of 4 counties. (N. Mex. Coop. Rpt.). WISCONSIN - Adults observed. (Wis. Coop. Sur.). CALIFORNIA - Medium on lettuce National City area and on cabbage in Encanto area. (Cal. Coop. Rpt.). ALABAMA - Large numbers on cabbage in Lee County. (Guyton).

CABBAGE APHID (Brevicoryne brassicae) - MARYLAND - Moderate to heavy numbers on cabbage north of Salisbury. Treatment needed. (U. Md., Ent. Dept.).

PEA APHID (Macrosiphum pisi) - DELAWARE - Small colonies starting on peas in eastern Sussex County. (MacCreary, Conrad). OREGON - Population below those observed in pea fields of Polk County in 1957. (Dickason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - One-third of leaves infested on untreated beans in Duplin County; 1 to 4 early instar larvae per leaf. (Farrier). GEORGIA - Moderate to heavy on beans in Screven, Thomas and Colquitt Counties. (Johnson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - NORTH CAROLINA - Damaging beans in Pitt County. (Jones, Farrier).

CUCUMBER BEETLES (Diabrotica spp.) NEW MEXICO - Damaging lettuce in Valencia and Bernalillo Counties. Destroying melons near Los Lunas, Valencia County. (N. Mex. Coop. Rpt.).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - NORTH CAROLINA - Destructive numbers of adults on cucumbers in Duplin County. (Farrier). IOWA - Abundant at lights. (Iowa Ins. Inf.). NEW MEXICO - Acalymma spp. damaging melons and cucumbers in De Baca County. (N. Mex. Coop. Rpt.).

TOMATO FRUITWORM (Heliothis zea) - NEW MEXICO - Continues to damage lettuce in Dona Ana County. (N. Mex. Coop. Rpt.).

ASPARAGUS BEETLES (Crioceris spp.) - MICHIGAN - C. asparagi and C. duodecimpunctata extremely numerous in Berrien-Van Buren area of southwestern Michigan. (Hutson). RHODE ISLAND - Adults on asparagus at Greenwich. (Hannah, May 13).

THRIPS - NEW MEXICO - Considerable damage to onions in Dona Ana County. (N. Mex. Coop. Rpt.).

ALFALFA LOOPER (Autographa californica)-CALIFORNIA - Medium on lettuce in National City area. (Cal. Coop. Rpt.). Heavy on lettuce in Salinas Valley, Monterey County. (Swift).

PAINTED LADY (Vanessa cardui) - CALIFORNIA - Medium to heavy on hop vines in Perkins area, Sacramento County. Control needed. (Cal. Coop. Rpt.). Damaging numbers on melons and lettuce in the Salinas Valley, Monterey County. (Swift).

BEEF LEAFHOPPER (Circulifer tenellus) - UTAH - Common on weed hosts and sugar beets in Washington, Iron, Millard and Sevier Counties. Common on mustards and Russian-thistle in Emery, Carbon and Grand Counties. (Knowlton).

LYGUS BUGS - UTAH - Extremely numerous on sugar beet seed stocks in St. George-Washington area. (Knowlton).

ONION MAGGOT (Hylemya antiqua) - UTAH - Infesting onions in Weber County. (Knowlton). OREGON - Few adults at Labish or Ontario onion fields. No maggot damage observed as of May 15. (Crowell).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MASSACHUSETTS - Severe on strawberry planting. (Wheeler). CALIFORNIA - Medium on beans in Chula Vista area of San Diego County. (Cal. Coop. Rpt.).

STRAWBERRY LEAF ROLLER (Ancylics comptana fragariae) - WISCONSIN - Moderate numbers in Waushara County plantings. (Wis. Coop. Sur.).

STRAWBERRY APHID (Pentatrichopus fragaefolii) - OREGON - Unusually abundant in Multnomah strawberry fields. (Rosenstiel).

SPRINGTAILS - VIRGINIA - Tremendous numbers in strawberry, potato and sweet corn fields on Eastern Shore. (Hofmaster).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - VIRGINIA - Light to moderate damage to plants around tobacco plant beds in Pittsylvania County. (Dominick). Damaging tobacco in beds in Smyth County (Eller), and in other southwestern counties (Sinclair).

TOBACCO BUDWORM (Heliothis virescens) - GEORGIA - Light on tobacco in Tift and Emanuel Counties, moderate to heavy in 10 counties. (Johnson).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - MARYLAND - Destructive to tobacco in beds several locations in Calvert County. (U. Md., Ent. Dept.). NORTH CAROLINA - Injured new planting of tobacco in Wake County. (Upchurch, Young).

WIREWORMS - NORTH CAROLINA - Severely damaged tobacco fields in Wilson County, 30 to 75 percent of plants injured. (Guthrie).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Overwintered adults in fields of cotton in 2-leaf stage, Scotland County. (Mistic). SOUTH CAROLINA - No adults in cotton fields, Florence and Darlington Counties. (Cott. Lett., May 14). GEORGIA - Average 2 adults per 100 feet of row, Colquitt and Thomas Counties, and one per 100 feet of row in Bacon, Pierce and Tattnall Counties. (Johnson). ALABAMA - Eight weevils collected from tanglefoot screens in seedling cotton fields, Autauga County. (Rawson). MISSISSIPPI - Survival in cages in Stoneville area .88%, highest in 3 years. (Merkl et al.). LOUISIANA - Populations averaged 7 per acre for 22 fields examined, with weevils being found in only 3 fields. Percentage survival in hibernation cages was 1.32 percent for May 7 and 1.98 for May 14 compared with 0.22 percent for both dates in 1957, Madison Parish. Excessive rainfall has apparently stimulated early emergence in cages, more weevils being taken on the first day than emerged during the 1957 season. (Smith et al.). Averaged 2 per 100 linear feet in 4 fields, Point Coupee Parish. (Roussell, Spink). TEXAS - Winter survival in hibernation cages at Waco was 4.42 percent, compared with 4.9 in 1957 to May 16. Weevils averaged 101 per acre in 14 fields inspected, McLennan and Falls Counties. (Parenacia et al.).

Boll Weevil Winter Survival in McNairy and Lake Counties, Tennessee, 1958: - Tests were made in McNairy County to determine the overwintering population in western Tennessee for 1958. Fall trash examinations indicated an average of 2,365 weevils per acre, the highest number found since the counts were begun in 1951. Spring counts indicated about 21 percent winter survival or 498 weevils per acre compared with 239 for 1956. Wet weather-prevented sampling of many fields that would probably cause the average to fall a great deal lower. All samples were taken in upland fields where highest carryover normally occurs. This count should be representative of all the southern tier of counties. Since the boll weevil is known to have hibernated as far north as Lake County during the mild winter of 1956, samples were collected also in that county this spring. No live weevils were recovered from 8 trash samples. Conditions for sampling were poor due to wet weather. (Locke).

BOLLWORM (*Heliothis zea*)-SOUTH CAROLINA - Twenty-eight moths taken in light trap at Florence. (Cott. Lett., May 14). NEW MEXICO - Eggs fairly abundant on cotton, Dona Ana County. (N. Mex. Coop. Rpt.). MISSISSIPPI - Few moths taken in light traps, no activity in cotton fields. (Merkl et al.).

PINK BOLLWORM (*Pectinophora gossypiella*) - OKLAHOMA - Examination of 3,998 bolls from standing stalks and 2,259 bolls from surface debris in 18 eastern counties revealed no dead or live larvae. The material examined came from a total of 1,375 acres. (Fed.-State PBW Comm.).

APHIDS - LOUISIANA - Populations very light in Madison Parish. (Smith et al.). NEW MEXICO - Aphis medicaginis building up in Dona Ana, Luna and Eddy Counties. A. gossypii still light in most fields in southern counties. (N. Mex. Coop. Rpt.). TEXAS - A. gossypii light in McLennan and Falls Counties. (Parenacia et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEW MEXICO - Light on cotton in Dona Ana County. (N. Mex. Coop. Rpt.).

FLEAHOPPERS - TEXAS - *Psallus seriatus* light to heavy in several fields, Bee, Ft. Bend and Brazoria Counties. (Prude, Cook). ARIZONA - Averaged 8 per 100 sweeps in Roll-Wellton area, Yuma County, and south Gila area, Maricopa County. (Roney).

GRASSHOPPERS - ARIZONA - Some cotton has been destroyed in Maricopa, Pima and Pinal Counties. Usually in fields adjoining desert and where no control was practiced until grasshoppers were almost full grown. (Ariz. Coop. Rpt.). NEW MEXICO - Doing some damage to plants along fence rows and ditch banks, Dona Ana County. (N. Mex. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 16 per 100 sweeps in Yuma area in stub cotton. (Roney).

THRIPS - ALABAMA - Causing light to moderate damage to young cotton in Autauga, Escambia and Conecuh Counties. (Rawson, Grimes). MISSISSIPPI - General over few old cotton fields which have not been plowed up and replanted in delta counties. No heavy infestations reported. (Merkl et al.). TEXAS - Some increase in infestation, being medium in 2 fields and light in 12, McLennan and Falls Counties. (Parencia et al.). Light to heavy in several fields in Bee, Ft. Bend and Brazoria Counties. (Prude, Cook). NEW MEXICO - Continue to build up, Dona Ana County. Heavy infestations curling young leaves. (N. Mex. Coop. Rpt.). ARIZONA - Injuring cotton in Marana area, Pima County, and present in some fields, Pinal and Maricopa Counties. (Ariz. Coop. Rpt.).

BROWN COTTON LEAFWORM (*Acontia dacia*) - LOUISIANA - One larva found in a field in Point Coupee Parish. (Angelle, Spink). TEXAS - Occasional larva in Waco area. (Parencia et al.).

ADDITIONAL NOTES

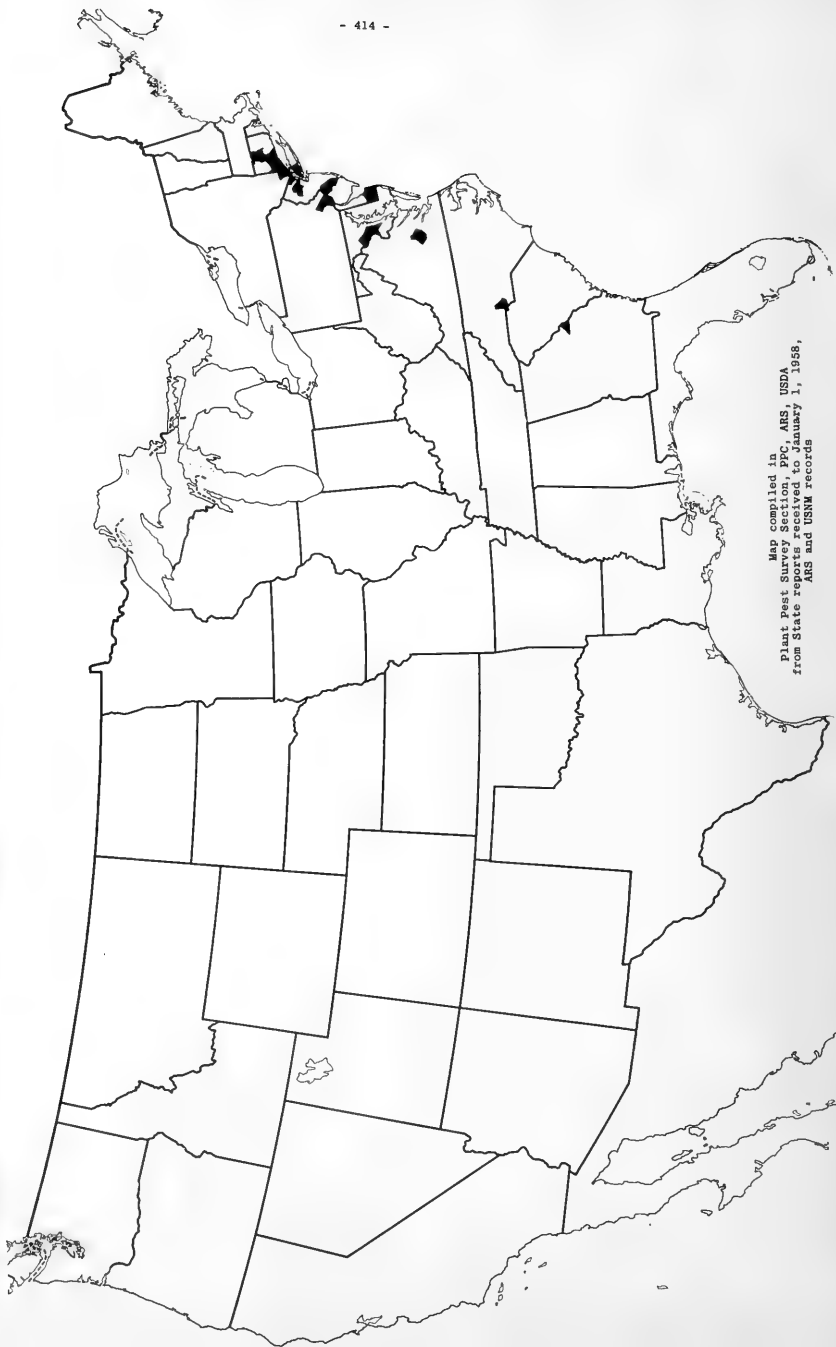
NEW YORK - EUROPEAN CORN BORER still mostly larvae. Some CUTWORM activity noted in Rockland County. FLEA BEETLES on tomato plants, Rockland County, and on cabbage, Erie County. CABBAGE MAGGOT eggs on cabbage and cauliflower May 13, Erie County. ASPARAGUS BEETLES feeding in Niagara County. BIRCH LEAF MINER larval activity and adult numbers indicate severe damage in Poughkeepsie area. ROSY APPLE APHID increasing rapidly as is APPLE APHID, which is also curling leaves and new growth on young trees in Rockland County. FRUIT TREE LEAF ROLLER feeding on raspberries and PLUM CURCULIO on sweet cherries in same county. RED-BANDED LEAF ROLLER egg masses generally below 1957 numbers, Orleans County, and nearly ready to hatch in Wayne County. (N. Y. Wkly. Rpt.).

NEBRASKA - First POTATO LEAFHOPPERS of season found May 5 in Otoe County, 4 per 4,000 sweeps. Red Willow County new county record for ALFALFA WEEVIL. SIX-SPOTTED LEAFHOPPER averaged 23 per 100 sweeps in Red Willow County alfalfa, and 14 per 100 sweeps in wheat in eastern third of State. PEA APHID ranged up to 700 per 100 sweeps in southeast areas and 200 in northeastern areas. ALFALFA CATERPILLAR continues to buildup in eastern portions of State. TARNISHED PLANT BUG remains static in the southeast and averages 65 per 100 sweeps in northeast. EUROPEAN CORN BORER pupation beginning in southeast.

ADDITIONAL SUMMARY NOTE

NEW YORK - 1957 - A BUD MITE (*Cecidophyes psilaspis*) caused bud blasting of *Taxus* in one nursery on Long Island. Distortion of foliage caused by this eriophyid mite was seen on estates in Nassau County. (Matthysse).

DISTRIBUTION OF A JAPANESE WEEVIL (*PSEUDOCNEORHINUS BIFASCIATUS*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA,
from State reports received to January 1, 1958,
ARS and USNM records

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - OKLAHOMA - Scolytus multistriatus adults emerging May 12 in Stillwater area, Payne County. (Price). WISCONSIN - Hylurgopinus rufipes emerging in Sauk County May 12. (Wis. Coop. Sur.). CALIFORNIA - Dendroctonus pseudotsugae heavy on Douglas-firs in Boulder Creek area, Santa Cruz County. (Cal. Coop. Rpt.). MONTANA - Localized small groups of Douglas-fir attacked by D. pseudotsugae near Thompson Falls, Sanders County. Local outbreak of Ips sp. in 10-15 year-old ponderosa pine stands near Libby, Lincoln County. (Missoula For. Ins. Lab.).

BIRCH LEAF MINER (Fenusa pusilla) - NEW JERSEY - Very active in central areas. (Ins. Dis. Newsl.). MASSACHUSETTS - Adults first seen April 29. Many eggs laid May 9. (Wheeler).

PALES WEEVIL (Hylobius pales) - MARYLAND - Damage to white pines planted for Christmas trees, Harford County. (U. Md., Ent. Dept.). PENNSYLVANIA - Moderate on Scotch pine, Venango County. (Adams).

PINE BARK APHID (Pineus strobi) - PENNSYLVANIA - Very heavy on Scotch pines, Venango County. (Adams).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - IDAHO - Infestations on ponderosa pines from Ahsahka, Clearwater County, to Deary, Latah County. (Missoula For. Ins. Lab.). MONTANA - Infestations on ornamental spruce in Missoula, Missoula County. (Missoula For. Ins. Lab.).

SAWFLIES - NORTH CAROLINA - Neodiprion sp. causing severe defoliation of pines over large areas, Granville and Person Counties. (Green et al.). MINNESOTA - Some pupation of Diprion similis. (Minn. Ins. Rpt.). VIRGINIA - Neodiprion sp. present in large numbers on pines in parts of Cumberland and Buckingham Counties. (Ellis). Also heavy on pines in Fluvanna, Charlotte and Halifax Counties. (Rowell et al.). PENNSYLVANIA - Second and third instar Neodiprion sertifer on red and Scotch pine, Monroe County. Biological controls applied. (Drooz).

APHIDS - NEW JERSEY - Very abundant on birch causing considerable leaf distortion. (Ins. Dis. Newsl.). WISCONSIN - Populations on elm appear lighter than in 1957. Anuraphis viburnicola has caused distortion to snowball where treatment was not applied. (Wis. Coop. Sur.). NORTH DAKOTA - A. viburnicola heavy and causing severe leaf distortion on snowball in several eastern localities. (N. D. Ins. Rpt.). IDAHO - Developing on wide variety of ornamentals and shade trees throughout south central and southwestern areas. (Gittins).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Hatching in Stillwater area, Payne County. (Fenton).

CANKERWORMS - KANSAS - Most destructive infestations of Paleacrita vernata in 9 years causing heavy defoliation and damage to trees generally throughout eastern half of State. Many trees completely defoliated. Control effective where applied. (Matthew). IOWA - Generally not heavy enough to warrant control. (Iowa Ins. Inf.). MINNESOTA - Alsophila pometaria causing injury to elm and apple trees, St. Paul area. (Minn. Ins. Rpt.). MISSOURI - P. vernata common on elms and some ornamentals over western and central parts of State, but does not appear heavy enough to defoliate trees. (Kyd, Thomas).

ELM LEAF BEETLE (Galerucella xanthomelaena) - DELAWARE - Common and depositing eggs, southern Sussex County. (MacCreary, Conrad). LOUISIANA - Light on elms, Orleans Parish. (Spink).

TENT CATERPILLARS (Malacosoma spp.) - MASSACHUSETTS - M. americanum generally scarce throughout State. (Wheeler, May 9). LOUISIANA - M. disstria abundant

on oaks, Orleans Parish. (Spink). WEST VIRGINIA - M. americanum has caused 70-95 percent defoliation of black cherry, statewide. (W. Va. Ins. Sur.).

A TORTRICID (Gypsonama haimbachiana) - ARKANSAS - On cottonwood in Poinsett County. This is the first record for this species in the State. (Dowell).

CORN EARWORM (Heliothis zea) - FLORIDA - Inspection of gladiolus in the field, Ft. Meyers area, Lee County, shows larvae working in the florets of the spikes to a heavy degree in some cases. (Fla. Coop. Sur., Apr. 9).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (Siphona irritans) - KANSAS - Activity generally increased over State causing some bunching of cattle in central and southern counties. (Gates). MISSOURI - Range 75-225 per animal on untreated cattle in central area. (Kyd, Thomas). ALABAMA - Increasing. (Grimes).

LITTLE HOUSE FLY (Fannia canicularis) - MASSACHUSETTS - Very abundant in many poultry farms. (Wheeler, May 9).

MOSQUITOES - KANSAS - Culiseta inornata adults and larvae present, Riley County. (Matthew). NORTH CAROLINA - Aedes sollicitans increasing rapidly in Pamlico and Carteret Counties. (Usry). IDAHO - Aedes implicatus populations far below levels of previous few years. (Barr).

TICKS - MASSACHUSETTS - Dermacentor variabilis now common. (Wheeler, May 9). VIRGINIA - Amblyomma americanum taken from human in Richmond. This species is not common in this part of the country. (Matheny).

BENEFICIAL INSECTS

HONEY BEE (Apis mellifera) - MASSACHUSETTS - Building up well in spite of late season and rainy weather. Colonies preparing to swarm. (Wheeler, May 9). WISCONSIN - Colonies overwintered with all-time minimum losses. Spring populations were high but frosts limited gathering of stores and populations have declined, with many colonies starved. (Wis. Coop. Sur.). CALIFORNIA - Check of 20 colonies slow to develop normal spring populations revealed 19 infected with Nosema, with 14-30 percent of bees infected. (Cal. Coop. Rpt.).

PREDATORS AND PARASITES - ARKANSAS - Lady beetles, green lacewings and braconids have built up. (Boyer). ILLINOIS - Lady beetles per 100 sweeps averaged 34 adults and 6 larvae in southwest, 13 adults in west southwest and 14 adults and 5 larvae in northern areas. (Ill. Ins. Rpt.). OKLAHOMA - Lady beetle and lacewing larvae exceedingly abundant in small grain and alfalfa throughout State. Have substantially reduced aphid populations in many areas. (Coppock). NEW MEXICO - Praon palitans becoming very abundant in established alfalfa stands throughout Dona Ana County. (N. Mex. Coop. Rpt.).

MISCELLANEOUS INSECTS

TERMITES - MASSACHUSETTS - Continue to increase in importance. (Wheeler, May 9).

CORRECTIONS

CEIR 8(18):341 - PLUM CURCULIO - GEORGIA - Change "Some adults full size,---" to read "Some eggs full size,---".

CEIR 8(19):364 Add Yakima and Benton Counties, Washington, to DISTRIBUTION OF ARMY CUTWORM.

CEIR 8(20):393 under mosquitoes in Minnesota delete A. dorsalis.

CEIR 8(20):379 - ARMYWORM - LOUISIANA - infestation on 'corn should read FALL ARMYWORM.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Felt. subt.	Eueth. rugic.	Perid. marg.	Prod. ornith.	Heliothis zea vires.
ALABAMA (County)							
Lee 5/11-16	9	24		133			71
ARKANSAS							
Fayetteville 5/1-7	1	5					
Kelso 5/1-7	12	5			1		6
Stuttgart 5/1-7	10	4		1	5		
ILLINOIS							
Urbana 5/9-15	302	10			7		
INDIANA (Counties)							
Orange 5/6-10	407	22			14	1	
Tiptecanoe 5/9-15	90	35				21	
KANSAS							
Garden City 5/7-11	290	27					
Hays 5/4-5,7	464	9					
Manhattan 5/7-15	877	37					
Wathena 5/5-13	431	15					
LOUISIANA							
Baton Rouge 5/9-15	26	58	35	10	34	5	5
Franklin 5/8-14	1	2	3	1	10	1	
MARYLAND							
Fairland 5/8-15	25				3		
MISSISSIPPI							
Grenada 5/5-10	4	1					
Meridian 5/9		1					
Senatobia 5/2-9	5						2
State College 5/10-16	12	3	4				1
*Stoneville 5/10-16	146	87	5		53	51	19 2
MISSOURI							
Columbia 5/15-16	102	2			3		
NEBRASKA							
Alliance 4/30-5/5					8		
Kearney 4/21-5/8	1				15		
Lincoln 5/3-10	49	58					3
North Platte 5/5-11	164	16			208		2

<u>LIGHT TRAP COLLECTIONS</u> - Continued		Pseud.	Agrot.	Felt.	Euth.	Period.	Prod.	Heliothis	
		unip.	yps.	subt.	rugic.	marg.	ornith.	zea	vires.
NEBRASKA (Cont.)									
Scotts Bluff Exp.			1			28			
Sta. 5/6-12									
NORTH CAROLINA									
Faison 5/8-14									1
NORTH DAKOTA									
Fargo 5/6-12	12					5			
SOUTH CAROLINA									
Charleston 5/12-18		1	2	2		2			2
Clemson 5/10-16		41	4	2			2		8
Florence 5/11-17		5	7	3	22				46
SOUTH DAKOTA									
Brookings 5/12,16	1176		32						
TENNESSEE (Counties)									
Blount 5/6-12	352		37			8		9	
Cumberland	106		17			11			
Greene	85		8			2			
Johnson	271		285			26		3	
Madison	30		3			2			
Maury	153		13			9		4	
Robertson	52		4					2	
TEXAS									
Brownsville 5/10-16			6	22		20		11	7
Waco 5/10-16	67			68		231	132	27	

*Four traps Stoneville

Submission of Light Trap Material for Identification

The time and effort put forth by all individuals involved in handling and determining trap-collected insects should be directed toward the long range utilization of the specimens, thus eliminating the need for constantly repeating the procedure. Specimens should be properly pinned and spread to permit easy determination by the taxonomists and determined specimens should be returned to the sender for future reference when screening trap collections. This will eliminate the need for further submissions except in rare cases.

Material forwarded to Dr. Paul Oman, Insect Identification & Parasite Introduction Laboratories, ENT/ARS, Plant Industry Station, Beltsville, Maryland, should be properly prepared, i.e., spread, pinned and labeled. Taxonomists do not have the time to prepare specimens. Fresh, correctly prepared specimens are easier to identify, especially when hindwing venation is involved. Individual specimens in a mixed series should be numbered so that determinations can be properly reported. All light trap collections should be carefully screened to eliminate all except suspect material. By the use of determined specimens for comparison the number of submissions can be greatly reduced. Only through the cooperation of everyone concerned can the problems connected with light trap collections be solved and permit their continued use as one important facet in the program of insect survey and detection.

A STATUS REPORT ON FOREST INSECT CONDITIONS IN 1957 ^{1/}

Compiled by
Division of Forest Insect Research

STATUS IN BRIEF

There was a marked increase in the severity and extent of forest insect infestations in the United States during 1957. The increased activity was most pronounced in the coniferous forests of the West but epidemic infestations also occurred in the Northeast, the Lake States, and the South. To the extent possible, epidemic populations of the pest species were suppressed by Federal, State, and private land-owners and land-managers in a concerted effort to reduce tree-damage and tree-killing in affected areas. Although the intensity of infestation of a few major pest species were reduced by control action, and some others declined as a result of natural control factors, other species which heretofore had been quiescent erupted to outbreak proportions.

CONDITIONS IN OREGON AND WASHINGTON

The extent and severity of infestations in Oregon and Washington increased in 1957 after three years of successive decline and thirteen species of destructive pests occurred as outbreaks on a total of 2,129,440 acres. Infestations of the balsam woolly aphid, Chermes piceae (Ratz.), the Engelmann spruce beetle, Dendroctonus engelmanni Hopk., the larch bud moth, Zeiraphera griseana (Hubner), the spruce budworm, Choristoneura fumiferana (Clem), and the western pine beetle, D. brevicomis Lec. increased in severity and extent, and the black-headed budworm, Acleris variana (Fern.), two species of silver fir beetles, Pseudohylesinus spp. and the spruce bud moth, Zeiraphera ratzeburgiana Sax. reappeared in outbreak proportions in several areas.

^{1/} This report is a compilation of information on the status of forest insects submitted by the Forest Experiment Stations, the Federal land-managing agencies, state forestry and conservation organizations, lumber companies, timber operators, private land-owners, and other individuals.

CONDITIONS IN CALIFORNIA

In California, destructive insects also showed a marked increase in extent and severity. Critical epidemics of western pine beetle, Dendroctonus brevicornis Lec., and mountain pine beetle, D. monticolae Hopk., occurred state-wide, particularly in proximity to areas which had been burned in 1955. The Jeffrey pine beetle, D. jeffreyi Hopk., occurred in outbreak numbers in several places and the lodgepole needle-miner, Recurvaria milleri Busck, persisted at epidemic levels in the lodgepole pine stands at Yosemite National Park. The California flat-headed borer, Melanophila californica Van Dyke, continued to cause severe tree-killing in the southern part of the State and the trend of infestations by the Douglas-fir beetle, D. pseudotsugae (Hopk.) was upward in northwestern California. The red turpentine beetle, D. valens Lec., was unusually abundant in association with other bark beetles which had attacked and killed ponderosa and sugar pines, and several species of cone and seed insects were particularly destructive to the coniferous cone crop. Several other species of miscellaneous insects caused serious damage to the forest resources in many areas.

CONDITIONS IN THE ROCKY MOUNTAINS

The coniferous forests in the northern and southern Rocky Mountains were severely affected by several species of destructive bark beetles and tree defoliators. Bark beetles, such as the mountain pine beetle, Dendroctonus monticolae Hopk., the Black Hills beetle, D. ponderosae Hopk., and the Engelmann spruce beetle, D. engelmanni Hopk., caused severe tree-killing in some stands and fir engraver beetles, including Scolytus and Dryocoetes spp., as well as D. pseudotsugae (Hopk.) occurred in outbreak status in several of the fir forests in the Region. The spruce budworm, Choristoneura fumiferana (Clem.), was abundant over extensive areas in Montana and in parts of Idaho and several other defoliators, including such species as Epinotia meritana Hein., Acleria varians (Fern.), Semiothisa sexmaculata (Pack), Anoplonyx occidentis, Roh., and others, were epidemic in many places. Of particular importance was the occurrence of an extensive infestation of spruce spider mite, Oligonychus ununguis (Jac.) on some 800,000 acres of fir forests in Montana and southern Idaho. This forest pest occurred in epidemic status principally within the areas which had been sprayed with a formulated DDT insecticide for control of the spruce budworm in 1956.

CONDITIONS IN LAKE STATES, CENTRAL STATES AND NORTHEAST

An increase in scope and severity of several important insects occurred in the Central States, the Lake States and the Northeast. The spruce budworm, Choristoneura fumiferana (Clem.), developed to epidemic proportions on some 300,000 acres in Maine and approximately 666,000

acres of susceptible forest type was heavily defoliated in Minnesota. Populations of Jack-pine budworm, C. pinus Free. declined in most of the Lake States region and there was little evidence of severe defoliation by the forest tent caterpillar, Malacosoma disstria Hbn. The European pine shoot moth, Rhyacionia buoliana (Schiff.) increased in severity in the Lake States and Central States territory and the white-pine weevil, Pissodes strobi (Peck) continued to cause severe damage to white pine and Jack pine in many areas throughout the regions.

CONDITIONS IN SOUTHERN AND SOUTHEASTERN STATES

Most of the important forest insects in the southern and southeastern states were less destructive during 1957 than has been the case for the past several years. Large-scale control projects and low temperatures during December reduced infestations of southern pine beetle, Dendroctonus frontalis Zimm., and increased precipitation benefiting tree-vigor resulted in less damage caused by the Ips engraver beetles and the black turpentine beetle, D. terebrans Oliv. A few defoliating insects occurred in epidemic status in some areas but severe tree-killing did not occur.

CONDITIONS IN ALASKA

Forest insect activity in most areas in Alaska was at a low level. The infestation of hemlock sawfly, Neodiprion tsugae Midd. which occurred in outbreak proportions in scattered locations in 1956 subsided completely and the Ips interpunctus Eichh. outbreak in white spruce north of Fort Yukon declined sharply. An undetermined defoliator caused moderate damage to birch stands in the vicinity of Fairbanks and localized flare-ups of the Alaska spruce beetle, Dendroctonus borealis Hopk. occurred in white spruce on the Kenai Peninsula. The sitka spruce beetle, D. obesus (Mann), was evident only at scattered points in the vicinity of Prince William Sound.

STATUS OF MAJOR INSECT PESTS

MOUNTAIN PINE BEETLE, Dendroctonus monticolae Hopk. The Mountain pine beetle is a serious pest of several species of pines in the western United States and outbreaks of severe proportions were reported from many areas during the year. The scope and severity of infestations was greatest in the lodgepole pine forests in the Intermountain States, in the Northern Rockies, and the Pacific Northwest.

Outbreaks which resulted in the killing of large groups of lodgepole pines were particularly prevalent throughout the Intermountain States, and infestations of severe proportions were reported from the Grand Teton National Park, and on or adjacent to the Teton, Sawtooth, Ashley and Targhee National Forests in Idaho. In Utah, an extensive infestation occurs on the Wasatch National Forest and systematic surveys in this area has revealed that approximately 123,000 infested trees occur on less than 100,000 acres. Outbreaks were also reported on the Ashley National Forest in Utah and in seven new infestation centers, group killings range between 50 and 7,000 trees at each location. In Montana, one outbreak of serious proportions was reported at Glacier National Park. There were 122 separate infestation centers recorded in Oregon and Washington with heaviest concentrations of losses on the Deschutes National Forest and the Klamath Indian Reservation. Epidemic centers on a portion of the Shoshone National Forest in Wyoming continued despite concerted efforts made during the year to reduce infestations by direct means. The high level of losses also continued in the Delaney and Dingley Creek drainages at Yosemite National Park in California due in part, at least, to stand weakening as a result of tree defoliation by the lodgepole needleminer, Recurvaria milleri Busck.

The five-needle pines, namely sugar pine and western white pine also were severely affected by the mountain pine beetle in several of the western states. In California, losses in mature sugar pine increased statewide with centers of infestations in proximity to forested areas on the Sequoia, Klamath, Stanislaus, and Plumas National Forests which were accidentally burned in disastrous fires during 1955. In Oregon, one center of infestation was reported on the Rogue River National Forest. Stands of western white pine were severely damaged on the Gifford Pinchot National Forest in Washington and infestations there covered a total of 55,840 acres. Some 24,320 acres were affected on the Willamette National Forest in Oregon and the beetle was found to be active on three separate areas on the Clearwater National Forest in Idaho.

The killing of ponderosa pine was not reported from extensive areas although the acute infestation on 4,000 acres at Crystal Bay, Nevada

is active and poses a threat to the high value recreational and summer-home areas at the north end of Lake Tahoe. Another infestation on some 3,360 acres where moderate to heavy tree mortality occurred, was reported on and adjacent to the Malheur National Forest in Oregon.

WESTERN PINE BEETLE, Dendroctonus brevicornis Lec. - The western pine beetle, long recognized as the most important natural enemy of ponderosa pine in the western United States, has been endemic in all stands for the past several years. During 1957, however, it was noticed that populations were on the increase and serious tree-killing occurred at several places in the Pacific Coast states. In California, tree-killing was severe on portions of the Sierra, Sequoia, Plumas, Stanislaus, Tahoe, Mendocino and Klamath National Forests as well as at Sequoia-Kings Canyon and Yosemite National Park. Two particularly serious epidemics occurred in the vicinity of areas which had been burned during 1955. These outbreak areas, encompassing some 173,000 acres, suffered losses of several thousands of trees and required emergency programming for control. Severity of infestations also increased in Oregon and Washington and damage occurred to pine stands on an estimated 41,760 acres. Heaviest tree-killing was found on the Fremont National Forest and the Warm Springs Indian Reservation in Oregon, and on the Okanogan National Forest in Washington. These latter infestations were not precipitated by populations arising from damaged timber in burned areas. Low endemic populations and relatively little tree-killing was the rule throughout the remainder of the range of this insect in the Intermountain and northern Rocky Mountain states.

DOUGLAS-FIR BEETLE, Dendroctonus pseudotsugae Hopk. - With minor exceptions, infestations of Douglas-fir beetle have declined to low endemic levels in all of the extensive fir forests of the western states. In Oregon and Washington, outbreak conditions currently were reported on a gross area of 18,400 acres, down from a peak of over 5,000,000 acres infested in 1954. One small outbreak on the Colville Indian Reservation in Washington covered 7,000 acres and two smaller infestations were reported from western Oregon. In California, the rate of losses were reported at a very low level except for local areas on the Klamath and Six Rivers National Forests in proximity to previous epidemics.

In the Northern and Southern Rockies, and elsewhere in the Intermountain States, outbreak conditions were reported from only a few areas. In southern Utah, where the fir type occurs in patches, all of the stands were heavily infested. Other outbreaks were noted in the Yellowstone River Canyon in Yellowstone National Park, and in a few places on the Boise and Sawtooth National Forests in Idaho. In the Southwest, where stands have been subjected to deficiencies in annual precipitation for the past several years, the rate of decline in infestations was less noticeable. It is estimated, for example that some 96 million board feet of timber was killed by the bark beetles on some 820,000 acres in

parts of Arizona and New Mexico with concentrations of tree-killing most pronounced on portions of the Gila and Santa Fe National Forests, and on the Jicarilla Apache Indian Reservation. A similar situation was reported on the San Juan, Grand Mesa-Uncompahgre, Rio Grande, and San Isabel National Forests in southern Colorado.

ENGELMANN SPRUCE BEETLE, Dendroctonus engelmanni Hopk. - This tree-killing bark beetle which was epidemic over extensive forested areas in the northern and southern Rocky Mountains only a few years ago has declined to endemic levels in most areas. Infestations in Colorado, New Mexico, Idaho and Montana are active in only a few local areas, and none of them are of sufficient size to require more than limited action in suppressive measures for their control. An outbreak first discovered in 1955 on the Bridger National Forest in Utah, however, is still aggressive. The infestation covers a gross area of 24,000 acres and it is estimated that as many as 37,000 trees and stumps are infested. Suppressive measures in this latter area have been initiated for control and mop-up operations are being continued in the infested areas in Montana, Idaho, and Colorado.

JEFFREY PINE BEETLE, Dendroctonus jeffreyi Hopk. - This insect pest is not known to attack any host other than Jeffrey pine, hence its occurrence is restricted to the limited range of this tree species in California. The periodicity of outbreaks of the insect is unpredictable and in spite of relatively light populations during the past several years, epidemics were recorded on some 105,000 acres in 1957. Centers of infestations occurred on the Plumas, Sierra and Inyo National Forests in central California and to a lesser degree in the southern portion of the State.

BLACK HILLS BEETLE, Dendroctonus ponderosae Hopk. - The Black Hills beetle, one of the most important insect pests affecting ponderosa pine in the Rocky Mountains and the Black Hills, was reported in epidemic status at several locations. The outbreak on the Dixie National Forest and at Bryce Canyon National Park in southern Utah is now in its eighth year and despite logging and direct chemical treatment of infested trees, epidemic centers of infestations continue to develop in adjacent stands. Infestations are reported to have increased also on the Carson National Forest in northern New Mexico; on the Pike, Roosevelt and San Isabel National Forests in southern Colorado; and to some degree in the Black Hills of South Dakota. Artificial measures for control are planned in all of these outbreak areas.

SOUTHWESTERN PINE BEETLE, Dendroctonus barberi Hopk. - This insect, usually found in association with other bark beetle species in the ponderosa pine stands of the Southwest, was quite prevalent over large areas in parts of New Mexico, Arizona and southern Nevada during 1957. A complex of species, including D. barberi Hopk., D. approximatus, Dietz.,

Ips lecontei Sw. and Ips ponderosae Sw. were associated in recently killed pines on some 1,711,000 acres in Arizona and New Mexico. The initial attack on trees usually was by I. lecontei Sw. followed by D. barberi Hopk. in the basal portion of the stem. D. approximatus Dietz, and I. ponderosae Sw. occurred occasionally in conjunction with the other species. An infestation of D. barberi Hopk. without the associated species continued in epidemic status at Charleston Mountain in Nevada and in this area, concerted efforts are being made to reduce the high rate of tree-killing by spraying infested trees with toxic oils. D. convexifrons Hopk. occurred in outbreak status in a limited area on Mt. Graham, southwest of Safford, Arizona. It was not abundant, however, in any other area.

SITKA SPRUCE BEETLE, Dendroctonus obesus (Mann.) - The Sitka spruce beetle has been prevalent in white spruce stands at several locations in Alaska for the past several years but currently the insect is reported to be confined to relatively small areas on Prince William Sound. The largest of the infestations now known is at Blackstone Bay near Whittier but this situation is not viewed with alarm as populations appear to be on a downward trend.

ALASKA SPRUCE BEETLE, Dendroctonus borealis Hopk. - The rate of tree-killing in stands of white spruce caused by this insect pest changed little from conditions which have existed in Alaska during the past several years. Scattered group losses were reported again on the Kenai Peninsula and south of the Alaska Range but the rate of tree-killing is not excessive.

SILVER FIR BEETLES, Pseudohylesinus spp. - The Pseudohylesinus beetles which were quite destructive to stands of Pacific silver fir in Oregon and Washington during the years 1947-1954, declined in numbers abruptly in 1955 and practically disappeared during 1956. However, these destructive pests were reported again in 1957, at five separate infestation centers on the Mt. Baker and Snoqualmie National Forests in Washington, indicating a possible resurgence of damaging populations.

WESTERN BALSAM BARK BEETLE, Dryocoetes confusus Sw. - The status of this insect changed very little during the year and epidemic infestations were reported only on the Carson and Santa Fe National Forests in northern New Mexico and within the Roaring River drainage on the Boise National Forest in Idaho. In southern Utah, and elsewhere in the Intermountain states, intensity and scope of infestations appear to have decreased.

BLACK TURPENTINE BEETLE, Dendroctonus terebrans Oliv. - The severity of losses caused by the black turpentine beetle in pine stands of the southern and southeastern states was somewhat less in 1957 than during previous years. Infestations which have required suppressive measures

for control in Georgia and Florida were reported to be endemic and only scattered tree-killing occurred elsewhere in the two states. Two small outbreak areas were noted in North Carolina but chemical treatment of infested trees controlled them. In the southern states, many of the pine tracts on flooded sites, in some cutting areas, and in stands damaged by wildfires, were attacked but prompt control in all areas reduced populations to low endemic levels.

SOUTHERN PINE BEETLE, Dendroctonus frontalis Zimm. The rate of tree-killing caused by the southern pine beetle in all of the southern and southeastern states currently was somewhat less than has been the case for the past several years. In the Southeast, beetle activity appeared to be centered in an 8,000 square mile area in western North Carolina, eastern Tennessee, northeastern Georgia and northwestern South Carolina. Light infestations, however, were reported along the South Carolina coast and in central and eastern Virginia. For the first time in possibly 40 years, the insect was discovered in portions of Louisiana and new infestations of minor proportions occurred in east Texas, the first recurrence in that area since the last major outbreak terminated in 1951. Elsewhere in the South, tree-killing was at or below levels of prior years. It is of interest that low temperatures during the winter months killed a large percentage of the beetle broods throughout the Appalachian Mountains and this, combined with concerted efforts to suppress populations by direct means during the course of the year, may result in a termination of the long-standing epidemic in this area. Prompt action, of course was taken to suppress the new infestations in Louisiana and east Texas, and maintenance control is being continued where the beetle is active in Mississippi and Alabama.

FIR ENGRAVER, Scolytus ventralis Lec. - The true fir stands in several of the western states were severely affected in 1957 by this scolytid beetle. The long-standing outbreak in stands of white fir on the Sandia Mountains east of Albuquerque, New Mexico continued at or above the level occurring in prior years and it is estimated that some 7,900 trees were killed during the year. Considerable tree-killing also occurred in southern Utah on and near Bryce Canyon National Park in stands of white fir weakened as a result of defoliation by Epinotia meritana Hein. Infestations covering 21,800 acres occurred in the alpine fir type in the Cascade Range in Oregon and on smaller areas in red and white fir stands on the Stanislaus and Sequoia National Forests in California.

PINE ENGRAVER BEETLES, Ips spp. - The extent and severity of tree-killing caused by the several species of pine engraver beetles in the various sections of the country is unpredictable from year to year due to wide fluctuations in populations resulting from changes in climatic conditions affecting broods and vigor of host trees. Damage to pine stands in

California was reported at a low level except for localized outbreaks of I. confusus Lec. and I. oregoni (Eichh.) at low elevations in the northern Sierras and in parts of southern California. The latter species also was reported in outbreak status on some 28,000 acres in the Blue Mountains of Oregon, and on portions of the Rogue River and Mt. Hood National Forests, but these infestations are much reduced from conditions which occurred last year.

In the Southwest, two Ips species, I. lecontei Sw., and I. ponderosae Hopk. were found in association with one or more Dendroctonus beetles in recently killed ponderosa pine on about 1 3/4 million acres. In most instances, I. lecontei Sw. was found to have initiated attack in the top portion of the trees and this discovery indicates the species to be of primary, rather than secondary importance in the losses sustained in the pine stands of Arizona and New Mexico. The insect also was found attacking and killing pinyon pines over extensive areas in Arizona, New Mexico, southern Utah, and western Nevada, another indication that the insect is a primary forest pest.

The widespread infestations of I. interpunctus Eichh. which caused heavy losses in stands of white spruce in Alaska in recent years was reported to have subsided during 1957 and it is expected that only light scattered infestations will be found during 1958.

In the Southeast, outbreaks of I. calligraphus Germ., I. grandicollis Eichh., and I. avulsus Eichh., were extensive and very destructive in the east-central portions of Virginia and North Carolina, and in north-eastern South Carolina during the summer months but adverse factors of one type or another caused the infestations to collapse suddenly in late August and early September. The severe 1956 outbreaks of these latter species in east Texas, Oklahoma, and Arkansas also declined abruptly in 1957. Heavy rains in these areas during the spring months presumably increased the vigor of the host trees and made them less vulnerable to attack. Whatever the reason, by midyear, Ips populations in the southern states appeared to be confined to trees struck by lightning, or those severely weakened by other causes. In southern Ohio and central Missouri, Ips beetles were reported in several red pine plantations of from 5 to 100 acres in size.

PINE REPRODUCTION WEEVILS, Hylobius, Pachylobius, Pissodes, and Cylindrocoptorus spp. Several species of weevils which are destructive to young pines in plantations and in natural stands were abundant during the year. The white-pine weevil, Pissodes strobi (Peck), was prevalent again in white-pine in most of the New England and Northeastern states and high percentages of planted pines were attacked in many areas. The insect also was abundant on jack, red, Scotch and Austrian pine in the Lake States. In the latter areas, as much as 40 percent of the trees in some plantations were attacked

and infestations on red pines were reported as severe in several areas in Michigan and Wisconsin. The pales weevil Hylobius pales (Hbst.), and the pitch-eating weevil, Pachylobius picivorus Germ., which have been pests of areas newly planted to pines in the southern states were less of a problem. Damage by these insects can be avoided if 6 to 9 months are allowed to lapse between the time of harvest cuttings and new plantings. Cylindroceptorus eatoni Buch. continued to cause serious damage to ponderosa and Jeffrey pines in plantations in California and a new center of infestation in that state was detected in an out-planting of hybrid pines on the El Dorado National Forest. An outbreak covering some 400 acres of plantations on the Shasta-Trinity National Forest was controlled during the year by aerial application of DDT.

PINE ROOT-COLLAR WEEVIL, Hylobius radialis Buch. Heavy damage to plantations and natural stands of red pine caused by the pine root-collar weevil was reported in various parts of the Lake States region. Damage was severe to red and Scotch pines planted as windbreaks and shelterbelts in parts of Minnesota and Michigan and in the sandy soil types in northwestern and central Wisconsin.

CALIFORNIA FLATHEADED BORER, Melanophila californica Van Dyke. - This buprestid beetle, a major pest of ponderosa and Jeffrey pine in California, occurred in epidemic proportions at Mt. Laguna on the Cleveland National Forest. On some 7,500 acres in this area, it is estimated that about 2.5 percent of the green stand or approximately 13,000 trees were killed.

CONE AND SEED INSECTS. Insects which attack and destroy the cones and seeds of coniferous trees were reported as serious pests in many sections of the country. In California, where the seed crop was relatively light during 1957, several species caused serious damage. The sugar pine cone beetle, Conophthorus lambertianae Hopk. destroyed an estimated 90 percent of the sugar pine cones; pine seed worms reduced the seed crop of Jeffrey pine seed cones by about 75 percent; and the cones and seeds of ponderosa pine and Douglas-fir were practically wiped out by one or more pest species. Cone moths, Diorctria spp. and Barbara spp. also were abundant and in conjunction with Megastigmus spp. were destructive statewide. Heavy infestations of Conophthorus beetles were reported affecting cones of red pine in Cass County, Minnesota and slash pine cones in Florida were found to be heavily attacked by Diorctria moths.

SPRUCE MITE, Oligonychus ununguis (Jac.) A new situation which developed during 1957 was the occurrence of severe infestations of spruce mites in the fir forests of Montana and southern Idaho which had been sprayed with DDT in 1956 for control of spruce budworm, Choristoneura fumiferana (Clem.). Although a few lesser infestations were noted outside sprayed areas, heavy mite populations and tree damage coincided closely with the sprayed areas. The damage in southern Idaho occurred on some 23,300 acres and approximately 790,000 acres were severely affected in Montana. It is of interest that these mite infestations are the first to have occurred in

epidemic proportions in the coniferous forests anywhere in the Nation subsequent to aerial application of DDT sprays for control of tree defoliators.

BALSAM WOOLLY APHID, Chermes piceae (Ratz.) The severity and extent of infestations by this destructive insect pest continued to increase in the fir stands of the Pacific Northwest. First noted in epidemic proportions on Pacific silver fir and subalpine fir in 1954, infestations increased rapidly from some 295,000 acres in 1955 to 599,000 acres in 1957. The largest increase occurred on the Willamette National Forest in Oregon where spread during the year was estimated at 233,000 acres. Heavy tree-killing of severely attacked trees was conspicuous in all epidemic centers and salvage logging has been stepped-up to the extent practicable and feasible in an effort to utilize the dead and dying material prior to its deterioration. Research on the aphid was given high priority in 1957 and an important start was made to investigate the possibilities of biological control by importing a predaceous fly, Aphidoletes thomsoni Mohn., from Europe.

A new infestation, believed to be of recent origin, was discovered on Frazier fir on Mt. Mitchell in North Carolina but its severity and extent is not yet known. Infested trees, however, appear covered with a white, woolly substance, indicating heavy populations unaffected by natural enemies. Status of the woolly aphid in the northeastern states was little changed from conditions of prior years.

SPRUCE BUDWORM, Choristoneura fumiferana (Clem.) - This destructive insect, distributed throughout the range of susceptible host type in the United States, occurred in epidemic status on several million acres in many parts of the country. In Maine, infestations were found on a total of 2,289,000 acres of which 270,000 acres sustained heavy defoliation and 707,000 acres medium defoliation. While the intensity of the infestation on these 979,000 acres constituted a considerable increase over prior years, the over-all extent of the outbreak decreased due to a lower level of populations in the lightly infested areas of 1956. Because of an expected high population and severe tree damage in Aroostook County, and the unlikely prospects that natural factors will exert a controlling influence on the population, aerial application of DDT insecticide on some 300,000 acres is planned for 1958. Infestations in Minnesota also increased and approximately 660,000 acres of balsam fir were moderately to heavily defoliated. The stands of spruce and fir in much of this area now have suffered from two or more years of heavy larval feeding and it is expected that serious defoliation will occur again in 1958. Budworm populations remained at relatively low levels in Michigan but heavy defoliation was reported in northwestern Wisconsin for the first time in many years.

The spruce budworm has been epidemic in portions of north Idaho and in Montana for the past 10 years and despite aerial spraying for control on more than 2,000,000 acres since 1953, it is estimated that infestations still occur on some 2,846,000 acres. Damage being caused to the fir stands throughout the areas of infestation has been severe and many of the younger understory trees have been killed. There is little evidence to date of any major change in population densities and it can be expected that the infestation will continue in epidemic status during 1958.

In southern Idaho, 512,300 acres were defoliated on portions of Boise, Challis, Payette, Sawtooth, and Salmon National Forests. In New Mexico, the 154,950 acres which are affected represent a decline from conditions which existed in that state the previous year. In Arizona, increased populations at high elevations on the Kaibab National Forest and at Grand Canyon National Park has resulted in severe defoliation and plans have been made to spray some 90,000 acres in that area for control during 1958.

The epidemic that began in Oregon and Washington in 1944 is still in progress and after two years of an apparent decline in intensity, is once again on the increase. Currently, some 830,960 acres are infested on or adjacent to the Malheur, Ochoco, Umatilla and Wallowa-Whitman National Forests in the Blue Mountain region of Oregon and plans have been made to spray this area for control during 1958.

JACK-PINE BUDWORM, Choristoneura pinus Free. - This important insect pest which has occurred in epidemic numbers over relatively large areas in the Lake States region during the past several years declined in all areas in 1957. Infestations in Minnesota disappeared completely in most areas and those in Wisconsin were much reduced from levels of the past few years. A few areas of light defoliation were reported from the Upper Peninsula of Michigan and some stands in the Lower Peninsula were infested to a moderate degree. Adverse weather and a high degree of parasitism are credited as factors causing the decline of the budworm populations.

BLACKHEADED BUDWORM, Acleris varians (Fern.) For the first time in more than a decade, this destructive insect pest occurred in epidemic proportions in Washington. Infestations were found to occur on some 252,800 acres on and adjacent to the Snoqualmie National Forest and Yakima Indian Reservation where western hemlock, Pacific silver fir, Douglas-fir, and grand fir were attacked. Previous epidemics have occurred principally on the Olympia Peninsula and after lasting about two years have subsided rather suddenly without causing significant tree-killing. In Montana, high endemic populations were reported throughout many Douglas-fir stands east of the Continental Divide in conjunction with infestations of the spruce budworm. Epidemic infestations, on a total of 32,000 acres, however, occurred in hemlock stands at scattered locations on the Kootenai National Forest and Glacier National Park in western Montana and on a portion of the Kaniksu

National Forest in northern Idaho. In some of the areas, there was a noticeable reduction in larval population prior to pupation and it is believed that the trend of infestations is downward.

DOUGLAS-FIR TUSSOCK MOTH, Hemerocampa pseudotsugata McD. - At periodic intervals, this important insect pest has occurred in epidemic proportions in the fir forests of most all of the western states. During 1957, a localized outbreak was reported on some 10,000 acres of Douglas-fir second growth in Owyhee County, Idaho and the same species, or a closely related one, became epidemic on approximately 160 acres of white fir in the vicinity of Pinal Mountain near Globe, Arizona. The moth population in Idaho was found to be affected by a virus organism late in the year and the outbreak is expected to collapse without benefit of artificial measures for its control. Aerial spraying of DDT will be undertaken, however, to control the outbreak in Arizona. No new egg masses or other evidence of infestations were to be found in the fir forests of California where the insect had been controlled by aerial spraying in 1956 and no active infestations were reported from Montana.

SPRUCE BUD MOTH, Zeiraphera ratzeburgiana Sax. This insect pest, an accidental introduction in the Pacific Northwest, occurred in epidemic status on Sitka spruce on 52,000 acres along the Oregon and Washington coasts during the year. Areas of heaviest damage was reported to occur on about 34,000 acres on the Siuslaw National Forest.

LARCH BUDMOTH, Zeiraphera griseana (Hbn.). This insect pest, first noted in epidemic status on 33,000 acres in the northern Rocky Mountains in 1955, now occurs on an estimated 250,000 acres in scattered centers in Montana and north Idaho. The outbreak is characterized by a concentration of populations in mature stands of western larch that occur in patches along the summits of ridges and in headwaters of many drainages. Little or no defoliation was noticeable below elevations of 4,200 feet, but above that level, larval feeding was heavy and extended to elevations above 6,000 feet. Outbreaks also were reported from some 39,520 acres on and adjacent to the Okanogan National Forest in Washington. No control is contemplated in any of the infestation areas.

LARCH LOOPER, Semiothisa sexmaculata (Pack). - This defoliating insect was reported from widespread areas in the northern Rocky Mountains and although populations usually were relatively light, heavy infestations were encountered along the Blackfoot River northeast of Bonner, Montana and at a few other locations along the Canadian border. There are no known records of the occurrence of this insect in these areas prior to 1955.

ALPINE FIR DEFOLIATOR. - An unidentified leaf-feeding insect was reported to have defoliated approximately 153,000 acres of alpine fir on and

adjacent to the Boise National Forest in Idaho. This is the second year that defoliation has occurred in this general vicinity and the infestation appears to occur only on areas which had been sprayed for control of spruce budworm. Collections of insects have been made from the affected area but identifications are not yet available.

BIRCH DEFOLIATOR - A Lepidopterous insect, as yet unidentified, was reported in epidemic status on paper birch over a wide area in interior Alaska and observations in the infestation area have indicated that moderate to heavy defoliation can be expected throughout the paper birch stands during 1958.

ASPEN LEAFROLLER. - An unidentified defoliator, believed to be a Choristoneura spp. was reported in outbreak status on some 500 acres of quaking aspen on the Carson National Forest in New Mexico.

SPRUCE MEALYBUG, Puto sp. - Approximately 60,000 acres of Engelmann spruce at two locations on the Dixie and Fishlake National Forests in southern Utah are heavily infested by this unnamed mealybug. Trees of all ages are affected and in areas where the pest has been active for several years, vigor of trees has been materially reduced and many of them are severely deformed. The extent of tree-killing in the area has not been determined but probably occurs only after continued feeding over a period of years. Methods for control of this pest species are not known.

LARCH CASEBEARER, Coleophora laricella (Hbn.). - This European insect which is widely distributed in the eastern United States was found in 1957 for the first time near St. Maries, in northern Idaho. Inasmuch as the infestation occurred on a gross area of some 15,000 acres, this pest insect presumably has been present in stands of western larch for the past several years. Defoliation within the area of infestation was severe and it is to be expected that heavy damage to the host trees will continue during 1958.

PINE BUTTERFLY, Neophasia menapia F.&F. - At periodic intervals this insect pest occurs in outbreak proportions in the pine stands of the western states and because of its destructiveness, special attention is given to detection of incipient infestations. While several localized infestations were discovered on the Boise, Payette, and Salmon National Forests in Idaho, none were of serious consequence.

FIR NEEDLEMINER, Epinotia meritana Hein. - The long-standing outbreak of this needleminer on some 10,000 acres of white fir stands at Bryce Canyon National Park and on the Dixie National Forest in southern Utah is now reported to be endemic. Although the decrease in intensity of the outbreak is attributed primarily to parasites, an aerial spraying program on 4,000 acres also caused a reduction in the pest population. During

the past 10 years, this infestation has caused some killing of trees, principally in the understory, and there has been severe weakening of the stand as a whole. Currently, the weakened stand is highly susceptible to attack by bark beetles and tree-killing by Scolytus ventralis Lec., is reported to be on the increase in the affected area.

LOGPOLE NEEDLEMINER, Recurvaria milleri Busk. - This important forest pest continued in epidemic status at Toulumne Meadows, Yosemite National Park, California and cumulative defoliation during the past several years is now causing mortality of affected trees. Since 1957 was a flight year for the moth, it is highly likely that new areas of susceptible type were invaded. Efforts thus far to suppress this insect by direct means have not been successful and it is feared that the entire forest stand in affected areas will soon be killed. A closely related species, tentatively identified as a Recurvaria species, increased in severity and extent in the ponderosa pine stands of the Southwestern states. Currently, some 126,000 acres are infested whereas only 50,000 acres were reported in 1956. The new areas of infestations are in the vicinity of El Rito, New Mexico, Williams, Arizona, and Rye, Colorado. Damage in all areas affected previous years' growth and defoliation thus far has not been severe enough to cause tree mortality.

PINE SAWFLIES, Diprion and Neodiprion spp.- Infestations of pine sawflies ranging from a few acres to more than a million acres in size were reported from many sections of the country throughout the year. The largest infestation reported was N. pratti pratti Dyar which extended from an area north of Baltimore to the lower end of the Potomac River in Maryland, a gross area of some 1,500,000 acres. Affected trees were pitch-pine and Virginia pine. The occurrence of other sawfly species on much smaller acreages were as follows: N. lecontei (Fitch) was prevalent in pine plantations in many areas; infestations were severe in parts of Michigan, Wisconsin, Minnesota, and in the southern and southeastern states, particularly in east Texas and west Florida; it was also unusually abundant in New York, western Maryland, and northeastern Ohio; N. pratti paradoxicus Roh. was abundant in southern New Jersey and pitch and shortleaf pines were defoliated over a wide area; N. sertifer (Geoff.) caused severe damage to young hard pines in the Lower Peninsula of Michigan and the species appears to be increasing in severity and extent in southern Connecticut and southeastern New York. Populations in Ohio were variable, lower in some areas and higher in others. A virus organism sprayed into infestations during 1953 and 1955 appears to have materially reduced populations in those areas. D. similis (Htg.) was abundant on white pine in parts of Minnesota and Wisconsin and for the first time it was reported from local areas in southern Michigan; N. excitans Roh. occurred in outbreak status in Arkansas, Texas, Louisiana, Mississippi and in five counties in north-central Florida; N. taedae linearis Ross was abundant in Arkansas, at scattered locations in South Carolina, and

in the northeastern quarter of Missouri and in southern Illinois. Infestations in Missouri were observed at scattered locations over a gross area of 122,000 acres with the heaviest infestation center on shortleaf pine on a portion of the Poplar Bluff Ranger District, Shawnee National Forest; N. nanulus nanulus Schedl. and N. Manrus Roh. caused moderate defoliation of jack pine in the vicinity of Bemidji, and in Crow Wing County, Minnesota and N. nanulus was quite noticeable on some 2,000 acres in St. Lawrence County, New York; N. pinetum (Nort.) was also reported to be abundant on white pine in New York and in central Ohio. An unidentified species occurred on about 600 acres of ponderosa pine in the vicinity of Grants, New Mexico but larval feeding was confined to previous years' growth and to date there has been no mortality of affected trees.

SPRUCE AND FIR SAWFLIES, Neodiprion and Diprion spp. - The known status of a few species of sawflies attacking spruce and fir is as follows: N. abietis complex was endemic in stands of Douglas-fir throughout southern Idaho but epidemic at the craters of the Moon National Monument in that state and in Hubbard County, Minnesota; the recent outbreak of N. tsugae Midd. in southeast Alaska collapsed from natural causes and close search of the spruce stands from the air and on the ground failed to reveal new outbreak areas. One small infestation of D. hercyniae (Htg.) was reported on white spruce in northeastern Wisconsin.

LARCH SAWFLY, Pristiphora erichsonii (Htg.) - Heavy defoliation of larch by this sawfly was reported throughout the range of the tree species in the Lake States region. The area of defoliation in Minnesota was about the same as that recorded in 1956, and tree mortality resulting from nine consecutive years of defoliation is becoming quite evident in the north-central part of that state. In Wisconsin, defoliation ranging from heavy to complete occurred over most of the northern half of the state and many stands in the east-central area were infested to varying degree. Infestations and severe defoliation also occurred over much of the Upper and Lower Peninsulas of Michigan. This species, first found in the northern Rockies during 1934, spread throughout western Montana and northern Idaho by 1944. There are no records however, of its occurrence in these areas since that time.

The two-lined larch sawfly, Anoplonyx occidentis Ross and the western larch sawfly, A. laricivorus Roh. & Midd. however, were reported to have occurred in association with Semiothisa sexmaculata (Pack.) in defoliation of western larch throughout the range of this tree species in Idaho and Montana. Although these two species of sawflies are known to have occurred in epidemic numbers in this general area during 1921 and again in 1938, in each instance the outbreaks subsided the following year and neither insect was recorded again until 1955.

EUROPEAN PINE SHOOT MOTH, Rhyacionia buoliana (Schiff.) - The severity of European pine shoot moth infestations increased materially in the

extensive areas planted to red pine and Scotch pine in the Lake States and Central States region. In Michigan, virtually all of the pine plantations are heavily infested in the Lower Peninsula and the insect is also well established in several counties in the Upper Peninsula. In Wisconsin, there has been a spread of infestations north along Lake Michigan and also to the west in the southern part of the state. The insect also caused serious damage to red pine in southern Connecticut and New York, northern New Jersey, Pennsylvania, Delaware and northern West Virginia.

Two species of other pine tip moths occurred in abundance in the southern, southeastern, northeastern and central states region in 1957. R. frustrana (Comst.) continued at a high level throughout most of the southeast and it was prevalent also in the south and in portions of Ohio. In northern Mississippi, Louisiana, and Texas trees of commercial size were heavily infested and from the air, the red-fringed crown of affected trees resembled group killing by bark beetles. The closely related species, R. rigidana (Fern.) was not as common in any area but it was more abundant than in prior years.

ZIMMERMAN PINE MOTH, Dioryctria zimmermani (Grote). - This pine moth was reported in abundance near LaPorte, Indiana on approximately 800 acres of planted pines. Red, Scotch and pitch pines were affected but Scotch pine was damaged to a greater degree than the other species.

MIMOSA WEBWORM, Homadaula albizziae C1 This insect pest was reported to have caused heavy defoliation of honey locust and mimosa trees at several locations in the vicinity of Indianapolis, Indiana and in southeastern Missouri and in Ohio. Defoliated trees, however, were not killed and the infestations are not expected to continue in outbreak proportions.

SCALE INSECTS - The status of damaging species of scale insects throughout the forested areas of the Nation is not accurately known but several species causing damage in local areas were reported during the year. Small localized infestations of Nuculaspis californicus (Colm.) and Phenacaspis pinifoliae (Fitch) occurred on ponderosa pines in the vicinity of Spokane, Washington as remnants of epidemic populations that were decimated during 1951 and again in 1955 by extremely low winter temperatures. The latter species also was reported throughout Minnesota on several pine hosts. The Prescott scale, Matsucoccus vexillorum Morrison was found in moderate numbers on ponderosa pine at the North Rim, Grand Canyon National Park and on the Prescott National Forest in Arizona but tree-damage was restricted to branch killing in affected areas. Moderate infestations of pine tortoise scale, Toumeyella numismaticum (P&McD.) occurred on Scotch pine in portions of Minnesota, Michigan and Wisconsin, and on Virginia pine in several areas in Maryland, West Virginia, and Pennsylvania. In these latter states, surveys during the summer months revealed that predation by the Coccinellids, Hyperaspis binotata (Say) and H. signata (Oliv), and the Lepidopteron, Lactilia coccidivora, had controlled the

scale in areas where serious infestations were reported. The red pine scale, Matsucoccus resinosa B.&G. is still abundant in some plantations of red pine in the Bridgeport, Connecticut area and on Long Island and in Westchester County, New York.

TENT CATERPILLARS, Malacosoma spp. - The severity and extent of tent caterpillar infestations changed very little in most sections of the country from conditions noted during 1956. While M. disstria (Hbn.) was found in outbreak proportions in northwestern Wisconsin and in the western part of Upper Peninsula in Michigan, tree defoliation in Minnesota was confined to a comparatively small area in south-central St. Louis County. M. fragilis Stretch was abundant and caused heavy defoliation to stands of aspen in parts of Arizona, New Mexico and Colorado but the acreages of infestations were reduced over 1956 and the trend of populations is downward.

GYPSY MOTH, Porthetria dispar (L) - The gypsy moth infestations remained at a low level in New York and most of New England. In Maine and portions of Vermont and New York, low winter temperatures and late spring frosts were apparently responsible for considerable reduction in gypsy moth populations. The large-scale Federal spray program aimed at eradication of this pest in the tri-state area of New York, New Jersey and Pennsylvania covered a gross area of 2,902,517 acres and other cooperative eradication spraying included 102,820 acres in Pennsylvania and 18,880 acres in Michigan. In the latter state, no moths could be found subsequent to spraying and it is possible the insect has now been eradicated in that area.

COOLEY GALL LOUSE, Chermes cooleyi Gill. - High endemic infestations of this insect were reported in stands of Douglas-fir of Christmas tree size in the upper Kootenai River and Tobacco River Valleys in northwestern Montana. The infestations in all instances appeared to be associated with severe infections of a needle blight identified as Rhabdocline pseudotsugae Syd.

SARATOGA SPITTLEBUG, Aphrophora saratogensis (Fitch) - This forest insect continued to be a major pest in red pine plantations in portions of Wisconsin and the Upper Peninsula of Michigan, and on jack-pine in Minnesota. There was, however, a widespread reduction in nymphal populations in some infested areas during the spring months and artificial measures for control were needed only on approximately 10,000 acres during the year.

TEXAS LEAF-CUTTING ANT, Atta texana Buckley - This insect is an important pest in portions of Texas and Louisiana and entire plantations of pine seedlings up to 4 years of age often are destroyed within a period of a few days when other green plants are not available to the ants during the winter months. Ant-towns, and resultant defoliation of pines, have become more numerous in recent years in sandy-soil where annual rainfall has been deficient. In areas where ant infestations are prevalent,

fumigation of the soil is a prerequisite to planting.

VARIABLE OAK LEAF CATERPILLAR, Heterocampa manteo (Dblly.) The variable oak leaf caterpillar was reported from only one small area in Warwick County, Virginia during the year in contrast to the outbreak covering several millions of acres in the state in 1956. For reasons not wholly known, there was little or no emergence of adult insects despite the fact that prepupae were abundant in the soil during the winter 1956-1957. Sudden collapse of infestations of this insect is a characteristic of this pest.

ELM SPANWORM, Ennomoe subsignarius (Hbn.). - The elm spanworm which has been epidemic in the hardwood stands of northern Georgia for the past two years increased in severity and extent during 1957. The acreage of defoliation, currently estimated on some 100,000 acres in Georgia, also occurs on about 200,000 acres in southeastern Tennessee and in southwestern North Carolina. Heaviest defoliation thus far has occurred on hickory and oak growing along the tops of ridges.

SHORT-TAILED CRICKET, Anurogryllus muticus (DeG.) was discovered as a new pest of germinated pine seedlings in portions of Louisiana, east Texas and Arkansas. The insect was found to sever the stem of the seedling and to consume the tender foliage in its underground tunnel.

FALL CANCKERWORM, Alsophila pometaria (Harr.) - A noticeable increase in extent and severity of cankerworm infestations occurred in portions of Maryland and Maine during the spring months. While chestnut oak and associated oak species in the infestation areas were stripped of foliage, little or no feeding was noticed on other tree species in the affected areas.

SADDLED PROMINENT, Heterocampa guttivitta (Wlk.) - The large-scale outbreak of this insect which occurred in portions of New York, Pennsylvania, New Hampshire and New York during 1956 was reported to have collapsed from natural causes. Heavy parasitism to larval brood is believed to have caused the reduction in populations.

PINE LEAF APHID, Pineus pinifoliae (Fitch) - The coniferous galls on red spruce caused by this aphid were particularly abundant in most of the northeastern states, particularly in western Maine, and in New York and Vermont. Another gall-former on spruce, and a tip feeder on white pine, Pineus floccus (Patch) caused exceptionally severe damage to red spruce in Vermont and it was reported frequently from New York also.

FRUIT TREE LEAF ROLLER, Archips argyrospila (Wlkr.). For the second year, the fruit tree leaf roller was epidemic over a large area on the Lower Peninsula of Michigan and infestations of lighter proportions were

reported from northeastern Wisconsin. Heavy parasitism of larval broods occurred in both states, however, and infestations are expected to decline in 1958. Another leaf roller, Sparganothis pettitana Robinson, and a webworm, Tetralopha, caused severe defoliation of sugar maple in portions of Wisconsin and Michigan. Feeding by the two insect species was somewhat lighter than occurred in 1955 and 1956 and with the abundance of predators and parasites noted in 1957, it is expected that the infestations will be materially reduced during 1958.

THE RED-HUMPED OAKWORM, Symmerista albicosta (Hbn.). The red-humped oakworm was reported to have occurred in outbreak status on some 45,000 acres of oak type in several counties in Michigan and trees were severely defoliated in all areas affected. Due to parasitism of larval broods, the outbreak is expected to subside before serious damage or tree mortality occurs.

WHITE GRUBS Phyllophaga spp. Unusually heavy flights of Phyllophaga beetles were reported from Texas and other southern states during the early spring months and subsequently severe damage by grubs occurred to pine seedlings in many areas. In one instance, a million nursery seedlings were reported to have been killed in Arkansas.

Washington, D. C.
May 1, 1958







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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
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United States Department of Agriculture
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COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS threatening to severe in two places in North Dakota. Serious threat to crops and range in Utah. Oviposition taking place in Nevada. (p. 441).

EUROPEAN CORN BORER damage may be higher than in 1957 in Illinois. Pupation nearly complete in Missouri. (p. 442). ARMYWORM larval infestations in several southeastern states, heavy moth flights in Illinois and moths collected in Minnesota. (p. 442). CHINCH BUG damage in south central Oklahoma and troublesome in localized areas of Kansas. (p. 443).

ALFALFA WEEVIL egg counts high in New Jersey, new county records for Nebraska and pupation underway in Maryland. (p. 444). New county records in West Virginia. (p. 465). POTATO LEAFHOPPER adults in Virginia. (p. 445). PEA APHID more abundant than usual in Washington. (p. 452). MEADOW SPITTLEBUG adults appearing in Maryland, spittle masses in Wisconsin greater than in 1957. (p. 447).

GREEN PEACH APHID damaging in orchards of several Rocky Mountain States. (p. 449).

Second POTATO PSYLLID survey in Colorado, Wyoming and Nebraska. (p. 453).

Abundance of eggs of potato-infesting aphids in northeastern Maine. (p. 453).

First adult TOMATO HORNWORMS trapped in North Carolina. (p. 454).

ONION MAGGOT populations low in Idaho and Washington. (p. 454).

BUDWORMS active on tobacco in North Carolina and Georgia. (p. 455).

TICKS numerous in several states. (p. 459).

SMALLER EUROPEAN ELM BARK BEETLE reported for first time from Nevada. (p. 459).

Distribution of GIANT HORNET. (p. 466).

Some of the more important pests for 1957. (p. 467).

Reports in this issue are for the week ending May 23 unless otherwise designated.

WEATHER OF THE WEEK ENDING MAY 26

Extensions of Canadian air masses made several intrusions into the Northeast and kept temperatures over that quarter of the Nation below normal, while a low pressure trough elongating from southeastern California into western Washington brought above normal warmth to western sections. In the Southeast, where high pressure prevailed early in the period, and a not too well defined low pressure center existed near the end, weekly temperatures averaged near normal. Frontal activity in general skirted the high pressure areas, extending from the northern Rockies through the central Great Plains into the middle Mississippi and Ohio Valleys, and thence northeastward to the New England coast. Storm centers for the most part remained above the northern boundary of the United States. One exception was a center which passed from the northern Rockies into the Plains and Lakes region over the weekend. Also, a southeastern Gulf low moved over Florida about the same time. Freezing temperatures were observed on 1 to 3 mornings in parts of the Dakotas, Minnesota, Wisconsin, Michigan, and also in the cranberry bogs of New Jersey, as well as at higher elevations in the Northeast and Far West. On the 23d, minima in the lower 30's were reported over most of Minnesota, and in Wisconsin some damage to tender garden crops extended to southern most sections. Maximum temperatures in the northeastern quarter of the country ranged in the 60's and 70's, with temperatures for the week averaging 6° below normal in eastern Wisconsin and northern Michigan. In the southwestern deserts, daily high readings were above 100° on all days, nighttime lows were generally in the 70's, and weekly departures averaged as much as +9°. Plus anomalies for the week exceeded 15° in western Washington where daytime highs reached into the low 90's on most days.

Low humidities associated with the high pressure air masses, strong winds, and little or no precipitation led to further depletion of soil moisture in the already dry area extending from eastern Montana into Michigan and northern portions of Illinois, Indiana and northwestern Ohio. Moderate rains brought some relief to northern parts of Michigan and Wisconsin. In the latter State, these falls restored streams to near normal levels and reduced fire hazards, but early in the week, loss in a 1200-acre fire near Park Falls was the largest in recent years. The more southerly sections of the West also received little or no precipitation this week. Areas with moderate to heavy totals included a few sections along the Pacific coast, western sections of the central Great Plains, the southern Mississippi Valley, coastal portions of the Gulf and Atlantic States and most of the Ohio Valley. Stations in Dade and Broward Counties, Florida, observed over 8 inches of rain on Saturday, while on the other side of the country King City, California, on the 22d recorded a 24-hour total of 1.05 inches which is 4 times the May average for that location. Severe storms accompanied frontal activity in some areas. A tornado, injuring several persons and with estimated damage at near ½ million dollars to buildings and livestock, struck 10 miles northeast of St. Paul, Minnesota, and moved into Wisconsin. A small twister with ½ inch hailstones and 60 m.p.h. gusts destroyed several buildings and downed trees near Wink, Texas. Another small tornado was observed near Circleville, Ohio. (Summary Supplied by U. S. Weather Bureau.)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - VIRGINIA - Averaged 15 adults and nymphs per 100 sweeps in grass, Nansemond County. (Boush, Bush). MINNESOTA - No general hatch as yet. (Minn. Ins. Rpt.). WISCONSIN - Occasional first and second-instar nymphs in Taylor, Clark, Marathon, Portage, Marquette and Wood Counties. Eggs mostly in clear stage. (Wis. Coop. Sur.). NORTH DAKOTA - Nymphal survey in Bowman, Slope, Stark and Billings Counties, May 19-20, showed light hatch along roadsides and field margins. Melanoplus bivittatus first to third-instar nymphs predominated, with some M. bilituratus. Generally, counts were 3-5 per square yard. North of Belfield 2 threatening to severe infestations consisting of 50 percent each of M. bivittatus and M. bilituratus were observed. Margins around one and one-half sections were sprayed to prevent damage at one location and an adjacent spring wheat field showed severe damage in a 200-foot marginal band. Light hatch on rangeland south of Medora, Billings County, with 2 per square yard and 5 species present. (USDA, Burge, King). Hatching in most areas of Richland County, 1-5 first-instar nymphs of M. bivittatus per square yard. Marginal counts 20-30 first-instar M. bilituratus and M. bivittatus nymphs per square yard at several places in northwestern part of county. M. bilituratus first and second-instar nymphs were 30-40 per square yard in one soil bank field near Leonard, Cass County. (N. D. Ins. Rpt.). SOUTH DAKOTA - M. bivittatus eggs are 80 percent in segmented stage, northern Brown County. Light hatch of Camnula pellucida at Keystone in the Black Hills. (Hantsbarger). MISSOURI - Hatch of M. bilituratus and M. bivittatus, largely complete, M. differentialis just beginning. Nymphal counts lowest for past 6 years. (Kyd, Thomas). NEBRASKA - Hatching throughout State, M. bivittatus predominant. Infestations still light, development up to third instar. (Bell). KANSAS - Hatch in progress throughout State, peak probably reached in southwestern area with 1,500 nymphs per square yard in a few counties. Heavy along wheat and alfalfa field margins. (Gates). Nymphs at all southeastern survey stops, 3-24 per square yard. Few localized areas in Dickinson and Riley Counties averaged 8-200 per square yard. Peak hatch should develop throughout northern counties during next two weeks. Counts in Riley and surrounding counties were as high as 300 per square yard in field margins and fence rows. (Burkhardt). OKLAHOMA - Roadside areas in Texas County averaged 6-10 first-instar nymphs per square yard, M. bilituratus predominant. No appreciable hatch on rangeland, May 16. (Burke). Range populations in central and south central counties generally 0-6 nymphs per square yard, with M. differentialis and M. bivittatus chiefly second to fourth-instar. M. femur-furum largely third and fourth-instar Pontotoc County. (Coppock). UTAH - Serious threat to crops and range, southern areas. Heavy local hatches on and adjacent to crop lands, parts of Grand, Emery, San Juan and Washington Counties. Light hatching several other counties. (Knowlton). NEVADA - Oedaleonotus enigma first-instar nymphs on cheatgrass central Elko County. (Fel Curto, May 16). Trimerotropis pallidipennis heavy in Fish Lake Valley, Esmeralda County, damaging barley. (Bechtel, May 16). Extremely numerous in Preston-Lund area, White Pine County, with oviposition taking place, also in areas of Mineral, Smoky Valley, Lander and Nye Counties. (Bechtel et al., May 16). COLORADO - Hatching on crops and rangeland in southern areas of State, but not yet in economic numbers. Inclement weather has caused high nymphal mortality in Fremont, Custer and Douglas Counties, but may not have much effect on expected infestations. (ARS, Ext. Serv., May 13). Early hatch nymphs average 5 per square foot in 9 eastern and southeastern counties. (Exp. Sta., May 13). NEW MEXICO - Moderate damage to alfalfa along ditch banks and fence rows near La Mesa, Dona Ana County. (N. Mex. Coop. Rpt.). CALIFORNIA - M. devastator first and second-instar nymphs averaged 70 per square yard in Beale Air Force Base area, Yuba, Nevada and Placer Counties, and populations were high in Livermore area, Alameda County. Nymphs of Clinopleura sp. and Melanoplus sp. heavy on range grass in Plymouth area, Amador County. M. bilituratus medium in alfalfa in Calxico area, Imperial County. (Cal. Coop. Rpt.).

MORMON CRICKET (*Anabrus simplex*) - NEVADA - Hatching in all control areas, Pershing, Lander, Humboldt, Eureka and Elko Counties, but only at low altitudes where there is no snow. This means hatching will be staggered again this year. Third-instar nymphs taken in Buffalo Mountain area of Lander and Pershing Counties. (PPC, West. Reg., Apr. Rpt.).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NEW JERSEY - Mortality was 27.1 percent in 89 fields inspected in 12 counties, with 1.29 borers per stalk. Larvae are less numerous than in 1956 and 1957 and outlook for first-brood infestation is not high except in Monmouth County area. Parasitization appears to be falling off and may be less of a factor in control than in 1957. (Ins. Dis. Newsl.). DELAWARE - Adults numerous in hay fields and orchards, Kent and Sussex Counties. (MacCreary, Conrad). ALABAMA - All overwintering larvae have pupated. (Eden). ILLINOIS - Overwintering populations low with development a little delayed and corn generally ahead of normal, survival may be higher, thus damage may be higher than last year. Pupation well advanced in southern areas with no moth emergence. Pupation 8-30 percent in central portions, but barely started farther north. (Ill. Ins. Rpt.). INDIANA - No living larvae found in Posey, Vanderburgh, Gibson and Washington Counties (Everly, May 9) and no pupae found in Tippecanoe, Benton and White Counties (Osmun). IOWA - Percent pupation is 84 in Boone County, 64 at Ankeny, Polk County, 10 in Kossuth County and 40 in Henry County. One moth was found in light trap at Ankeny, May 22. (Iowa Ins. Inf.). OHIO - Pupation 20 percent in central areas, May 23. (Neiswander). NORTH DAKOTA - No pupation in southeast area. (N. D. Ins. Rpt.). SOUTH DAKOTA - Approximately 30 percent pupation in southeastern portion of State. (Hantsbarger). MINNESOTA - Pupation is 15 percent in southeastern, 29 percent in south central and 28 percent in southwestern areas. (Minn. Ins. Rpt.). MISSOURI - Pupation 95-100 percent in extreme southeast area and 70-75 percent in central third of State. (Peters, Jackson). First moth emergence occurred at Columbia, Boone County, May 23. (Munson).

CORN EARWORM (*Heliothis zea*) - NORTH CAROLINA - Adults flying into whorls of sweet corn, Duplin County. (Reid, Farrier). LOUISIANA - Light to medium on clover, St. Landry Parish. (Spink). MISSOURI - First moth of season taken in Sikeston light trap, New Madrid County, May 10. (Harrendorf). NEW MEXICO - Occasional larva in alfalfa fields, Dona Ana County. (N. Mex. Coop. Rpt.).

BILLBUGS - NORTH CAROLINA - Up to 75 percent loss of corn in some fields, Brunswick and Wayne Counties. (Scott).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Surveys show no infestations. (U. Md., Ent. Dept.). VIRGINIA - Medium in some small grain fields in Northampton County (Nottingham), very light in small grains in Princess Anne County (Greenwood) and a few young larvae have been noted in some Eastern Shore rye fields and growers should be on lookout for outbreaks (Hofmaster). None found in 7 small grain fields surveyed in Henrico County. (Morris, Davis). NORTH CAROLINA - Locally severe in corn and rye, Washington County, and third or fourth-instar larva seen in alfalfa field, Rowan County. (Whitford, Farrier). SOUTH CAROLINA - First outbreak of season at Mt. Pleasant, Charleston County. (Neetles et al.). LOUISIANA - Heavy on oats and wheat, East Carroll Parish. (Spink). ILLINOIS - Moderate to heavy moth flights during past two weeks, no larval infestations reported as yet. (Ill. Ins. Rpt.). MINNESOTA - Three adults collected May 15 and one on May 16 at Duluth. (Minn. Ins. Rpt.). KANSAS - Larvae in nearly all wheat and barley fields examined in central, east central and southeastern counties where rank growth has caused lodged plants. Averaged 1-6 per square foot, with no damage observed as larvae are extremely small. Moths still abundant in Manhattan light trap, Riley County. (Matthew). MISSOURI - Low numbers of small larvae present in most rank, dense small grain fields throughout State, averaging about one per square foot. Moth flight continued in central and northern areas. (Kyd, Thomas).

OKLAHOMA - Light in small grains and legumes, central and south central areas, with 0-15 larvae per square yard, somewhat higher in margins. Considerably higher in southwestern area, beginning to feed on young corn, Love County. (Coppock). TEXAS - Feeding on corn, Rockwall County, with as many as 12 per plant on several plants. (Hawkins).

AN ARMYWORM (possibly *Laphygma exigua*) - NEVADA - Immature larvae damaging sweet corn in Pahrump Valley, Nye County. (Bechtel, Zoller, May 16).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - WISCONSIN - First spring migrants developed on May 13 at Madison, and have since been observed on small grain. (Wis. Coop. Sur.).

BROWN WHEAT MITE (*Petrobia latens*) - TEXAS - On large wheat, Hutchinson County. First confirmed report of this season in this area. (Daniels).

BUDWORMS (*Heliothis* spp.)- ALABAMA - Light to moderate infestations caused damage to corn and velvetbeans, Russell County. (Grimes).

CHINCH BUG (*Blissus leucopterus*) - NORTH CAROLINA - Averaged 3-4 adults per plant in 5 acres of corn, Brunswick County. (Scott). OKLAHOMA - Common on young corn throughout eastern half of State. Counts of 0-11 adults per plant, Okfuskee County and 30 per plant in some south central counties with considerable damage. (Walton et al.). KANSAS - Adults causing some trouble in several localized areas in central, east central and southeastern counties, with serious damage in a few late-planted spring barley fields. Adults in many corn fields but no eggs in any examined fields. (Matthew).

CORN LEAF APHID (*Rhopalosiphum maidis*) - TEXAS - Heavy on grain sorghum, threat to some sweet corn plantings, Dimmit County. (Harding). Large population on grain sorghum, Burleson County. (Randolph). WISCONSIN - Has built up on barley, probably due to migration from the south. (Wis. Coop. Sur.). NEW MEXICO - Heavy and severely damaging barley near Anthony, Dona Ana County. (N. Mex. Coop. Rpt.). INDIANA - Average 1 per 10 stems in barley fields, Posey, Vanderburgh, Gibson and Washington Counties. Few colonies, mostly individuals. (Everly, May 9). KANSAS - On corn, Riley County (Burkhardt, May 17) and on spring barley, Dickinson County (Matthew, May 22).

*A BILLBUG (*Calendra callosa*) - GEORGIA - Continues to cause heavy losses to corn stands, southern counties. (Johnson).

CUTWORMS - SOUTH DAKOTA - *Feltia* sp. active in southeastern corn fields, with up to 30 percent of 2 to 3-inch plants in certain fields showing feeding damage. (Hantsbarger). WISCONSIN - Some damage to alfalfa and oats. (Wis. Coop. Sur.). IOWA - Attacking corn in Missouri River bottoms and destroyed field of corn in Fayette County. (Iowa Ins. Inf.). LOUISIANA - Light to medium on clover, St. Landry Parish, heavy in Jefferson Davis Parish. (Spink).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - SOUTH DAKOTA - Average 12 to 10 sweeps on winter wheat, northeastern and north central regions. (Hantsbarger). NEBRASKA - Averaged 65 per 100 sweeps in winter wheat, oats and rye fields in the panhandle, Platte Valley and Loup Valley. (Andersen). WISCONSIN - Quite common on small grain. (Wis. Coop. Sur.). OKLAHOMA - Light to very light in barley heads and wheat throughout State and decreasing rapidly in central and northern counties. (Coppock, Wood). MISSOURI - Continue to slowly increase on blades of small grains with 20-75 per linear foot of row. Most wheat not heading out, very low numbers now in heads, averaging 0.5-1.5 per head. (Kyd, Thomas). NEW MEXICO - Heavy on wheat and barley which has not headed out, Roosevelt, Chaves and Eddy Counties. (N. Mex. Coop. Rpt.). WASHINGTON - Widely distributed on winter wheat, Walla Walla County. Populations above normal, alate forms developing. (Cook, Wirth).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Light damage to corn, Montgomery County. (Grimes). LOUISIANA - Averaged 35.25 percent on 740 plants in East Baton Rouge Parish. (Spink). GEORGIA - Heavy in 40-acre corn field, Lanier County. Going back into ground similar to cutworms. (Morgan, May 15).

FLEA BEETLES - TEXAS - Chaetocnema pulicaria feeding on corn, Rockwall County. (Hawkins). OKLAHOMA - Numbers somewhat reduced in southern counties. Light damage to young corn continuing in central and south central areas. (Walton, Coppock). MISSOURI - Moderate damage by C. pulicaria to sweet and field corn continues over much of State, but good growing weather has enabled most corn to grow away from injury. Counts still 2-8 per plant. (Kyd, Thomas). KANSAS - Very few C. pulicaria in southeastern corn fields, averaged 1-5 per 25 plants. Plants appear to have recovered from previous injury. (Matthew). ILLINOIS - C. pulicaria averaged 1-10 per plant in western and southern areas. (Ill. Ins. Rpt.). IOWA - Slight damage to corn by C. pulicaria, Keokuk, Washington and Henry Counties. (Iowa Ins. Inf.). MARYLAND - C. pulicaria generally light on field and sweet corn, upper Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Heavy on seedling corn in some Nansemond County fields. (Boush, Bush).

SEED-CORN MAGGOT (Hylemya cilicrura) - COLORADO - Collections in bait traps increasing, Weld County. (Exp. Sta.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpuncta howardi) - OKLAHOMA - Damaging corn stands, McClain and Garvin Counties. (Walton, Arbutnot). VIRGINIA - Very few to date in Holland area, Nansemond County. (Boush).

WIREWORMS - NORTH DAKOTA - One infestation in spring wheat near mapleton, Cass County, caused moderate damage. (N. D. Ins. Rpt.). WISCONSIN - Damage serious enough to one planting of corn on muck soil to necessitate replanting. (Wis. Coop. Sur.). IOWA - Working in Boone County. (Iowa Ins. Inf.).

ALFALFA LOOPER (Autographa californica) - WASHINGTON - Much more abundant than normal in light traps at Walla Walla. (Cook). IOWA - Averaged 1-2 per sweep in southeast areas. (Iowa Ins. Inf.).

ALFALFA WEEVIL (Hypera postica) - NEW JERSEY - Egg counts very high in stems in sprayed alfalfa fields, central and southern areas. (Ins. Dis. News1.). NEBRASKA - New county records are Lincoln and Cherry Counties. Averages 10 adults per 100 sweeps in panhandle counties. No larvae have appeared. (Andersen). VIRGINIA - Damage largely over for this year, but some reinfestations and damage will occur to alfalfa after first cutting. (Morris). NORTH CAROLINA - Reared in abundance from ladino clover April 30, Gates County. Adults severely damaging ladino clover after migrating from newly cut alfalfa. Iredell County. (Artz, Franklin, Farrier). SOUTH CAROLINA - Has moved into northwest counties. (Nettles et al.). MARYLAND - Pupation well underway in Queen Annes County, but larvae continue to feed in most sections. Moderate to heavy damage in unsprayed alfalfa. (U. Md., Ent. Dept.). GEORGIA - On alfalfa in Taliaferro and Columbia Counties. (Jordan). COLORADO - Larvae per 100 sweeps averaged 10 in Garfield County, 62 in Delta County, 715 in Montrose County and 200 in Mesa County. Parasitism was 50 percent. (Exp. Sta.). IDAHO - Larvae appearing generally throughout Canyon County alfalfa, with some fields showing damage from feeding. Range to 20 per sweep in few untreated fields. (Waters). Adults average 1-3 per sweep in several alfalfa fields, Bingham and Power Counties. (Bishop). UTAH - Damage conspicuous in some Emy and Grand County alfalfa fields. Infestations variable throughout State, damage soon in many localities. (Knowlton). NEVADA - Moderate damage to untreated alfalfa, Panaca area, Lincoln County. (Bechtel).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - ALABAMA - Causing light damage to velvetbeans, Russell County. (Grimes). MISSOURI - Average 1-3 per linear foot of row of germinating soybeans. Considerable injury occurring on garden beans, central area. (Kyd, Thomas). VIRGINIA - Approximately one per plant in soybeans interplanted with corn, Nansemond County. (Boush). ILLINOIS - Quite common in many areas. (Ill. Ins. Rpt.). IOWA - Present in alfalfa, clover and soybeans throughout southern half of State. (Iowa Ins. Inf.).

BLISTER BEETLES - ALABAMA - Few *Epicauta cinerea* collected in an oat field, Macon County. (Grimes). WASHINGTON - *Epicauta* sp. light in 2 alfalfa fields at Moses Lake, Grant County. (Landis).

CLOVER LEAF WEEVIL (*Hypera punctata*) - NEBRASKA - Heavy in Loup Valley area, 56 per 100 sweeps. (Andersen).

CLOVER SEED WEEVIL (*Miccotrogus picirostris*) - IDAHO - Adults exceeding 50 per sweep in clover-grass pastures at Chilco, Kootenai County. (Gittins).

A CRICKET (*Steiroxys* sp.) - IDAHO - Late-instar nymphs approximately 4 per square yard in pastures near Chilco, Kootenai County. (Gittins).

DATE MITE (*Oligonychus pratensis*) - WASHINGTON - Heavy on orchardgrass near Moses Lake, Grant County. (Canode).

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - CALIFORNIA - Heavy in debris and under boards in Niland area, Imperial County. (Cal. Coop. Rpt.).

FLEAHOPPERS - NEW MEXICO - Building up large populations in alfalfa fields near Hagerman, Chaves County. (N. Mex. Coop. Rpt.).

GREEN CLOVERWORM (*Plathypena scabra*) - MINNESOTA - First to fifth-instar larval counts low in all alfalfa fields checked, southern areas. (Minn. Ins. Rpt.).

GREEN JUNE BEETLE (*Cotonis nitida*) - VIRGINIA - Larval activity has been light in southeastern pastures. (Boush).

LEAFHOPPERS - VIRGINIA - Three adult *E. fabae* collected in light trap at Holland, Nansemond County, 4 per 500 sweeps on mustard in same county, but none on trees supposed to be alternate hosts for species. (Boush, Bush). NORTH CAROLINA - *Empoasca* sp. averaged 2 per 100 sweeps in vetch, Rowan County, and *E. fabae* one and *Empoasca* sp. 16 in Iredell County, all on May 15. All other sweepings were negative. (Jones, Farrier, Young). MINNESOTA - *M. fascifrons* averaged 2 per 150 sweeps in alfalfa and 1 per 75 sweeps in grain, southeastern and south central districts. (Minn. Ins. Rpt.). WISCONSIN - *Empoasca* sp. in alfalfa fields of southern counties. (Wis. Coop. Sur.). SOUTH DAKOTA - Up to 3 *Aceratagallia sanguinolenta* per 10 sweeps in some alfalfa fields in eastern areas. (Hantsbarger). ILLINOIS - *E. fabae* averages 20-125 per 100 sweeps in alfalfa in central areas and 2-3 per 100 sweeps as far north as Chicago. (Ill. Ins. Rpt.). NEBRASKA - *M. fascifrons* averaged 16 per 100 sweeps in small grains in the Platte and Loup Valleys and in the panhandle. *E. fabae* as far west as Dawson County in the Platte Valley. Counts remain light, 4 per 100 sweeps. (Andersen). MISSOURI - *Empoasca fabae* averages 1-3 per 1,000 sweeps in central area alfalfa. (Kyd, Thomas). OKLAHOMA - Less than one adult *Empoasca* sp. per 10 sweeps in alfalfa in several south central counties. (Walton, Coppock). COLORADO - First *Macrosteles fascifrons* of season taken on Kiowa County alfalfa, 100 per 100 sweeps, May 7. (Exp. Sta., May 13).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - INDIANA - Larvae abundant in red clover with up to 70 percent of stems infested, Decatur County. (Wilson). MARYLAND - Larvae 2 per sweep on red clover at Centreville, damage light to moderate. Also present on Baltimore County red clover. Adults generally scarce. (U. Md., Ent. Dept.).

LYGUS BUGS (*Lygus* spp.) - UTAH - Adults and nymphs abundant, some alfalfa fields, Grand, southern Emery, San Juan and Washington Counties. Nymphs building up on mustards and alfalfa els where. (Knowlton). NORTH DAKOTA - Counts of 2 adults per 10 sweeps in southeast alfalfa. (N. D. Ins. Rpt.). IDAHO - Nymphs range 8-12 per sweep in alfalfa, 2-8 in red clover, Canyon County. Adults average less than one per sweep. (Waters). Adults and nymphs remain below one per sweep on alfalfa sampled in Clearwater River drainage area. (Gittins). MINNESOTA - *L. lineolaris* average 1-12 per sweep in southeastern and south central districts and 0-2 in southwestern districts. (Minn. Ins. Rpt.). WISCONSIN - *L. lineolaris* adults common in alfalfa. (Wis. Coop. Sur.). NEW MEXICO - Adults and nymphs very numerous in 6 counties. (N. Mex. Coop. Rpt.). VIRGINIA - *L. lineolaris* very heavy in vetch, clover, alfalfa and grass crops for hay and pasture in Holland area, Nansemond County. (Boush, Bush). NEBRASKA - *L. lineolaris* averaged 50 per 100 sweeps in central Platte Valley, 63 in panhandle area, 78 in north central, 60 in central area and 56 in Loup Valley area. (Andersen). MARYLAND - *L. lineolaris* one per sweep on alfalfa at Sudlersville. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NORTH CAROLINA - General and heavy on soybeans, Scotland County. (Jones). GEORGIA - Moderate on soybeans in Colquitt County, heavy in Screven County. (Johnson, Jordan).

PEA APHID (*Macrosiphum pisi*) - UTAH - Common on alfalfa, damaging numbers scattered and local. (Knowlton). NEVADA - Generally light to medium in most areas of State. Some damage to alfalfa, Clark and Nye Counties. (Bechtel, Galloway, May 16). NORTH DAKOTA - Counts of 10-30 per 5 sweeps in alfalfa, southeast section. (N. D. Ins. Rpt.). IDAHO - Approximately 2 per sweep in alfalfa, Bingham and Power Counties (Bishop), averaging 20 per sweep in some alfalfa fields sampled, Canyon County (Waters), and far below anticipated numbers in Latah and Nez Perce County alfalfa fields generally, being below one per sweep in all fields sampled except in one field in Spaulding area where the average was 2 per sweep. (Gittins). COLORADO - General in all eastern and western counties. (Exp. Sta.). SOUTH DAKOTA - Averaging 25 per 10 sweeps in northeast and north central alfalfa. (Hantsbarger). TEXAS - Building up on vetch and some fields requiring treatment, Delta County. (Hawkins). OKLAHOMA - Averaged 30-200 per 10 sweeps on alfalfa and vetch, central and south central counties. (Coppock). MISSOURI - Continued to decline in most areas with considerable increase in parasite and predator activity. Averaged 5-75 aphids per sweep. Much of alfalfa now being cut. (Kyd, Thomas). MINNESOTA - Ranged 4-15 per sweep in southeast and south central districts, and 1-5 in southwest. (Minn. Ins. Rpt.). WISCONSIN - Averaged 0-16.3 per sweep in alfalfa in 19 counties. Averaged one per sweep in one pea field in each of Lafayette and Dane Counties, May 21. Indications are they are moving to peas. Accurate evaluation of threat to peas is difficult as counts are relatively low in some alfalfa fields. (Wis. Coop. Sur.). NEBRASKA - Averages 112 per 100 sweeps in alfalfa with fungus present in central Platte Valley, 87 in panhandle counties 42 in north central area and 105 in central sections. (Andersen). KANSAS - Light to moderate in 1 central, 7 east central, 1 northeast and 8 southeast counties. (Matthew). MARYLAND - On alfalfa and peas on Eastern Shore, averaging 400 per sweep on alfalfa at Sudlersville. (U. Md., Ent. Dept.). DELAWARE - More than 100 per sweep in one Kent County alfalfa field. Generally somewhat lighter than in 1957. (MacCreary, Conrad). ILLINOIS - Apparently decreasing in southern and increasing in western and northern counties. (Ill. Ins. Rpt.). IOWA - Averaged 15-25 per sweep. (Iowa Ins. Inf.).

PLANT BUGS - SOUTH DAKOTA - Adelphocoris rapidus nymphs appearing in alfalfa fields in southeast area, averaging about one per 50 sweeps. (Hantsbarger). MINNESOTA - Small numbers of A. lineolatus and A. rapidus continue to hatch in southern counties. (Minn. Ins. Rpt.). DELAWARE - Adelphocoris rapidus half-grown nymphs on clover, western Kent County. (MacCreary, Conrad). IOWA - A. lineolatus nymphs and adults averaged 2-3 per sweep in southeast areas. (Iowa Ins. Inf.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - TEXAS - Small numbers in peanuts, Frio County. (Harding).

RICE STALK BORER (Chilo plejadellus) - LOUISIANA - Damaging mature wheat, St. Landry Parish. (Floyd, Clower, Smith)

SAY STINK BUT (Chlorochroa sayi) - UTAH - Situation threatening in southern areas, extremely heavy on range weeds, Enterprise-Beryl area. Numbers noted elsewhere in 6 southern counties. (Knowlton). ARIZONA - Heavy in oat field near Tuscon, Pima County. (Ariz. Coop. Rpt., May 18).

SPITTLEBUGS - WISCONSIN - Philaenus leucophthalmus nymphs in spittle masses average 5 per 10 alfalfa stems in Dane, 5.2 in Iowa, 7.5 in Sauk, 6 in Green, 8.7 in Grant and 5 in Lafayette Counties. Incidence of spittle masses is 2-3 times that of 1957 with spittle masses on 30-40 percent of alfalfa stems. (Wis. Coop. Sur.). INDIANA - Nymphs averaged 2.6 per alfalfa stem in Ohio County and 1.5-3.5 per stem in mixed alfalfa and clover fields in Decatur County. (Wilson). VIRGINIA - Philaenus leucophthalmus nymphs light in orchardgrass-alfalfa mixture in one area of Scott County. (Southerlin). MARYLAND - Philaenus leucophthalmus nymphs moderate to heavy on red clover, Baltimore and Queen Annes Counties, damage moderate and adults appearing. (U. Md., Ent. Dept.). IOWA - Averaged 1 per square foot or less in clover and alfalfa. (Iowa Ins. Inf.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - MINNESOTA - None found to date. (Minn. Ins. Rpt.). NEBRASKA - None found in 1 central, 7 east central, 1 north-east and 7 southeast counties. Averaged 5 per infested plant at one location, Montgomery County. (Matthew). UTAH - Scarce to rare in Washington, San Juan and Grand County fields. One found in Salt Lake County. (Knowlton). OKLAHOMA - Counts up to 60 per 10 sweeps, Logan and Garvin Counties, lower in other central and south central counties. (Coppock). COLORADO - None taken in Saguache, Rio Grande, Alamosa and La Plata Counties. (Exp. Sta.). NEVADA - Light to medium, Clark and Nye Counties, held in check by parasites and predators. None found in Preston-Lund-Baker areas, White Pine County, Panaca area, Lincoln County or Fish Lake Valley, Esmeralda County. (Bechtel, Galloway, May 16). NEW MEXICO - Heavy, with considerable damage to alfalfa, Dona Ana, Luna, Chaves and Eddy Counties. (N. Mex. Coop. Rpt.). GEORGIA - Light on alfalfa, Sumter County. (Johnson).

SWEETCLOVER APHID (Myzocallidium riehmi) - NORTH DAKOTA - Traces only in mature southeastern stand. (N. D. Ins. Rpt.). SOUTH DAKOTA - Up to 30 per 10 sweeps in sweetclover fields in northeastern area. (Hantsbarger).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NORTH DAKOTA - Heavy in Grand Forks area, injury observed. Light to moderate in established stands in southeast area, with light injury. (N. D. Ins. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Attacking alfalfa, Wharton County. (Smith).

THRIPS - TEXAS - Frankliniella sp. damaging peanuts in Frio County, averaging 10 per plant. (Harding). NEW MEXICO - Continues heavy and damaging to young alfalfa, Dona Ana and Sierra Counties. (N. Mex. Coop. Rpt.).

VARIEGATED CUTWORM (*Peridroma margaritosa*) - KANSAS - Larvae in most alfalfa fields and along field margins throughout central, east central and southeastern counties 1-10 per 25 sweeps and from second instar to nearly mature. (Matthew). OKLAHOMA - Widespread in alfalfa throughout State, 2-20 larvae per 10 sweeps in central and south central counties, 45 per 10 sweeps in southwest counties with some damage in latter area. (Coppock).

VETCH BRUCHID (*Bruchus brachialis*) - TEXAS - Present in all fields of vetch checked, Delta County, with 5-15 per 10 sweeps. (Hawkins). OKLAHOMA - Counts per 10 sweeps averaged 18-50 adults, Logan and McClain Counties, 5-8 in Love County. (Walton, Coppock).

WEBWORMS - NEW MEXICO - Adults numerous in fields throughout State, only light and spotty larval infestations on crops. (N. Mex. Coop. Rpt.). COLORADO - Considerable numbers of *Loxostege commixtalis* in light traps at San Luis Valley, Saguache County. (Exp. Sta.).

A WHEAT STEM MAGGOT (*Hylemya cerealis*) - COLORADO - Being taken in bait traps, Weld County. (Exp. Sta.).

SUGARCANE BEETLE (*Euethoea rugiceps*) - NORTH CAROLINA - Damaging early planting of corn in southeastern areas. (PPC). ALABAMA - Seriously damaged 15 acres of corn in Houston County, damage in Barbour County light. These two sections recorded no damage by this pest last year. (Grimes).

SUGARCANE BORER (*Diatraea saccharalis*) - LOUISIANA - Light to medium in St. Landry Parish, 18 percent in a field in Avoyelles Parish on corn 3 feet high and 0-100 percent in southwest areas of the State. Infestation averaged 4.6 percent on corn less than 1 foot high and 29.9 percent on corn over 1 foot in height. (Spink). Infestation in sugarcane ranged 0-26 percent on one plantation in each of 9 parishes, with some pupation observed in Terrebonne, St. Charles and Assumption Parishes. No eggs were present in fields examined. (Hensley, Long).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - Soil sampling was conducted by State and Federal personnel in over 5,000 fields in KANSAS, NEBRASKA, IOWA, MISSOURI, WISCONSIN, ILLINOIS, INDIANA, OHIO, and KENTUCKY during April. All positive determinations were from within regulated areas of Missouri and Kentucky. (PPC, Cent. Reg.). During April, inspections were conducted in Crittenden and Mississippi Counties, ARKANSAS; Bolivar, Coahoma, De Soto and Tunica Counties, MISSISSIPPI; Pender and Camden Counties, NORTH CAROLINA; Lauderdale County, TENNESSEE, ALABAMA, and in OKLAHOMA. All specimens submitted negative with exception of one property in Mississippi County, Arkansas. (PPC, Sou. Reg.).

JAPANESE BEETLE (*Popillia japonica*) - VIRGINIA - Larvae 5-7 per square foot of turf in Richmond area, 3 in land planted to corn last year in Deep Creek area, Norfolk County. One pupa found in Deep Creek area. (Williams).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - First adult taken in bait trap May 13 at Vincennes and first eggs found May 16. About 30 percent of overwintering larvae emerged to May 20. First larvae activity expected about May 27 in orchards; light protection needed. (Cleveland). ILLINOIS - Adults emerging May 12 at Carbondale. Eggs hatched by May 21. (Meyer). OHIO - First adults at Wooster May 18. Slow emergence to May 23. (Cutright). DELAWARE - Continuous emergence of adults occurred from May 13 through May 20 in increasing numbers from cage in Kent County. (MacCreary, Conrad). COLORADO - First adult taken in traps May 5 near Clifton, Mesa County. (Exp. Sta., May 13). UTAH - First adult in Weber County bait trap on May 17. (Davis).

FRUIT TREE LEAF ROLLER (*Archips argyrospila*) - IDAHO - Most larvae in last instar in Moscow area. Moderately abundant in unsprayed trees. (Manis).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Some damage occurring at Covington and Sullivan. (Cleveland). OHIO - Light infestations to May 23. (Cutright). MINNESOTA - Egg hatch nearly complete in LaCrescent area. (Minn. Ins. Rpt.). WISCONSIN - Egg deposition medium to heavy in some orchards in Door County. (Wis. Coop. Surv.).

EYE-SPOTTED BUD MOTH (*Spilonota ocellana*) - IDAHO - Most larvae reached last instar on apple trees at Moscow. Unsprayed trees showing extensive terminal bud damage. (Manis). WISCONSIN - Populations of second and third-instar larvae medium to heavy in some orchards in Door County. (Wis. Coop. Sur.).

LEAFHOPPERS - NEW MEXICO - Damaging apple foliage in several orchards in Lincoln and De Baca Counties. Heavy infestations damaging grapes in backyard vineyards in Dona Ana County. (N. Mex. Coop. Rpt.).

ROSY APPLE APHID (*Anuraphis roseus*) - UTAH - Particularly serious in curled apple foliage in Grand, Emery and San Juan Counties. (Knowlton). OHIO - Infestations increasing in numerous orchards but not serious. (Cutright).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Building up in apple orchards in Hondo Valley, Lincoln County. (N. Mex. Coop. Rpt.).

GREEN PEACH APHID (*Myzus persicae*) - COLORADO - Populations continue to be problem in orchards where early controls ineffective in Mesa County. Heavy infestations some orchards in Delta County. (Exp. Sta., May 13). UTAH - Curling peach foliage in number of southern orchards. Some injury in central area. (Knowlton). IDAHO - Light infestation on peaches at American Falls. (Bishop). NEW MEXICO - Heavy on unsprayed peach trees throughout State. (N. Mex. Coop. Rpt.).

EUROPEAN RED MITE (*Panonychus ulmi*) - INDIANA - Adult and nymphal populations continue low at Vincennes; number of second-brood eggs increasing. (Cleveland). ILLINOIS - Second generation beginning at Carbondale. (Meyer). OHIO - First summer eggs at Wooster May 17. Potentially serious infestations many orchards. (Cutright). Populations low in Columbus area on peaches even in orchards not receiving preventive spray programs. (Rings). MASSACHUSETTS - Locally abundant. (Wheeler). WISCONSIN - Adults and nymphs light to moderate in Door County. (Wis. Coop. Sur.). WASHINGTON - Moderate populations building up on stone and pome fruits in Yakima Valley and Wenatchee area. All stages found, most abundant when first covers not applied. (Johansen, May 16).

A LEAF BEETLE (*Paria sp.*) - INDIANA - Seriously defoliating young apple trees in Tippecanoe County. (Osmun, Apr. 30).

A BLACK FRUIT TREE WEEVIL (*Magdalis gracilis*) - IDAHO - Adult emergence on apple trees complete in Moscow area. (Manis).

MAY BEETLES (Phyllophaga spp.) - NORTH CAROLINA - Local defoliations of apple, peach, pecan, pear and other small trees in Wake and Cleveland Counties. (Dameron, Scott, Farrier).

SHOT-HOLE BORER (Scolytus rugulosus) - UTAH - Damage serious on weakened peach, apricot and cherry trees in number of orchards in Washinton, Grand, Emery and San Juan Counties. (Knowlton).

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Medium to heavy on plum and apricot trees in Riverside, Riverside County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on plum in Chico, Butte County. (Cal. Coop. Rpt.). UTAH - Conspicuous on apple trees at Castle Dale. (Knowlton).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - OHIO - Orchard at Clyde, severely infested with rapidly maturing female scales; oviposition began on or about May 20. (Rings). CALIFORNIA - Heavy populations of L. corni complex on pear trees in Vacaville area of Solano County. (Cal. Coop. Rpt.).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - WASHINGTON - Adult male trapped at Prosser May 16; earliest date on record for eastern area of State. (Frick).

PLUM CURCULIO (Conotrachelus nenuphar) - MASSACHUSETTS - Adults jarred from apple trees, May 12. (Wheeler). DELAWARE - Feeding punctures first observed on peaches in Sussex County, May 20. (MacCreary, Conrad). NORTH CAROLINA - First "wormy" drops in Sandhills area, May 13. (Smith). GEORGIA - Total of 5,812 larvae emerged to May 19 from a bushel of peach drops in a commercial orchard at Fort Valley. This is a 96.9 percent infestation. (Snapp). MISSISSIPPI - Larvae in small plums in Bolivar County. (Hutchins). INDIANA - On May 19, 119 adults jarred from 5 abandoned peach trees in orchard at Vincennes compared with 186 previous week. (Cleveland). OHIO - First found on peaches in Wooster area May 19; populations increasing on plums. No oviposition scars found to May 23. (Rings).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - UTAH - Worst outbreak in past 10 years now damaging large pear orchard at Orem, Utah County. Fruits as well as foliage severely infested. (Knowlton).

CLOVER MITE (Bryobia praetiosa complex) - IDAHO - Continuing to cause damage to foliage of peach, apricot and plum trees at American Falls. (Bishop). Common on leaves on unsprayed apple trees in Moscow area. (Manis). NEW MEXICO - Heavy infestations on unsprayed apple trees in Lincoln, Bernalillo, Sandoval and De Baca Counties. (N. Mex. Coop. Rpt.).

CATFACING INSECTS - OHIO - Populations of Euschistus tristigmus, E. variolarius and E. servus much lower than in 1957. Neolygus omnivagus, N. quercalbae and N. caryae still late nymphal stages on natural hosts. (Rings).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Active in Sullivan area. (Cleveland).

CALIFORNIA PEAR-SLUG (Pristiphora californica) - CALIFORNIA - Light on pears at Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

APHIDS - UTAH - Severely infesting pecan foliage in Washington County. (Knowlton).

BAGWORM (Thyridopteryx ephemeraeformis) - TEXAS - Feeding on pecans in Brazos County. (Turney).

UGLY NEST CATERPILLAR (Archips cerasivorana) - LOUISIANA - Infestations heavy on pecan trees at Mellville. (Spink).

A NOTODONTID (Datana sp.) - TEXAS - Larvae feeding on pecan in Dewitt and Gonzales Counties. (Garner).

PECAN LEAF CASEBEARER (Acrobasis juglandis) - ALABAMA - Increasing in Escambia County; 20-30 percent pupated. (Grimes).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Eggs hatched and first generation entering pecans in Dewitt and Gonzales Counties. (Garner). OKLAHOMA - Examination of 200 tips of native pecans in Garvin County and 200 tips of improved pecan varieties in Carter County for damage by overwintering generation was negative. (Coppock).

A CURCULIO (Conotrachelus aratus) - MISSISSIPPI - Larvae infesting pecan twigs in Lauderdale County. (Hutchins).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Seven very light infestations, totaling 19 trees, found during April. Three at Palo Alto, Tampulipas; 1 at Haulahuises, 1 at Linares, 1 at Paso Hondo and 1 at Buena Vista, Nuevo Leon. Spraying underway in States of Nuevo Leon and Sonora after being suspended during bloom period. (PPC, Mex. Reg., Apr. Rpt.). TEXAS - Inspections conducted in Hidalgo and Webb Counties during April including areas where infestations were found in 1955-1956. No citrus blackfly found. (PPC. Sou. Reg.).

MEXICAN FRUIT FLY (Anastrepha ludens) - Trap inspections in Yuma area of ARIZONA and in CALIFORNIA were negative in April. Trapping in Yuma area was terminated at end of April; will be resumed again in fall of 1958. (PPC. West. Reg.). In western area of MEXICO, 4,726 trap inspections were made on 569 properties; results negative. First and second spray applications completed in Tecate area, and second spray application completed in Tijuana with third application started. (PPC. Mex. Reg., Apr. Rpt.). Trapping and visual inspections conducted in Brooks, Dimmit, Duval, Jim Hogg, Jim Wells and Webb Counties, TEXAS during April. First adults of season for Brooks, Webb and Dimmit Counties trapped April 4, April 11, and April 23 respectively. All specimens trapped in orange groves. (PPC. Sou. Reg.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - Trap density increased by over 7,000 during April to total of 31,100 for State of FLORIDA. Traps also in operation in ALABAMA, LOUISIANA and MISSISSIPPI. All collections during April negative. (PPC. Sou. Reg.).

BURROWING NEMATODE (Radopholus similis) - FLORIDA - During April 8 new groves, 2 citrus nurseries and 3 ornamental nurseries found infested. (PPC. Sou. Reg.).

A CUTWORM (Xylomyges curialis) - CALIFORNIA - Heavy infestation on young orange trees in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

CITRUS THRIPS (Scirtothrips citri) - CALIFORNIA - Light infestations on citrus in Oroville area of Butte County. (Cal. Coop. Rpt.).

Citrus Insect Situation, Third Week of May, Lake Alfred, Florida - PURPLE MITE activity declined this week and may decline further next week, but there will be an increasing trend through June. FLORIDA RED SCALE activity increased further this week. There may be a reduction next week, but there will be an increasing trend in June. CITRUS RED MITE activity increased sharply this week and further increase is expected, with the peak being reached in June. CITRUS RUST MITE activity was reduced this week with some further reduction expected next week, but an increasing trend is expected in June. SIX-SPOTTED MITE infestations increased this week and a peak will be reached in about a week. (Pratt, Thompson, Johnson, May 21).

IMPORTED CURRANTWORM (*Nematus ribesii*) - NEBRASKA - Very numerous and stripping foliage from currants in Lincoln area. (Andersen, May 19).

TRUCK CROP INSECTS

CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Medium infestation on beans in National City area of San Diego County. (Cal. Coop. Rpt.). LOUISIANA - Heavy infestation on cabbage in St. Landry Parish. (Spink). NEW MEXICO - Continues serious on lettuce which has not headed in Bernalillo, Valencia and Socorro Counties. Larvae in uncut fields in Dona Ana County confined mostly to outer leaves. (N. Mex. Coop. Rpt.).

IMPORTED CABBAGEWORM (*Pieris rapae*) - NORTH DAKOTA - Oviposition noted in Fargo area. (Noetzel). NORTH CAROLINA - Increasing on cabbage in Robeson County. (PPC). ALABAMA - Severe infestation on cabbage in Autauga County. (Grimes). VIRGINIA - Larvae of *P. rapae* and *Pletella maculipennis* generally distributed in cabbage fields in Norfolk area; treatments needed. (Hofmaster). DELAWARE - Causing very light damage to cabbage in southern Sussex County. (MacCreary, Conrad).

DIAMOND BACK MOTH (*Plutella maculipennis*) - NORTH CAROLINA - Principal pest of untreated cabbage in Duplin County. (Farrier, Rabb, May 8). DELAWARE - Small larvae causing minor damage to cabbage in southern Sussex County. (MacCreary, Conrad).

CABBAGE MAGGOT (*Hylemya brassicae*) - MASSACHUSETTS - Egg laying very heavy in earliest areas. (Wheeler).

CABBAGE CURCULIO (*Ceutorhynchus rapae*) - VIRGINIA - Survey in lower Northampton County showed 2-100 percent of plants infested in all cabbage fields examined. Damage is confined to main stalk and first 6 leaves. (Hofmaster).

CUCUMBER BEETLES - CALIFORNIA - *Diabrotica* sp. heavy locally on tomatoes in Lodi area, San Joaquin County. (Cal. Coop. Rpt.). MARYLAND - *Acalymma vittata* heavy on squash at Brookeville. (U. Md., Ent. Dept.). IOWA - Destroyed some stands of melon and squash seedlings. (Iowa Ins. Inf.).

PEA APHID (*Macrosiphum pisi*) - WASHINGTON - Several times more abundant than usual for time of year in Walla Walla area on peas. (Cook). Abundant on early spring peas in Yakima Valley, requiring control. First time control needed on early peas in area. (Shipman). WISCONSIN - First adults trapped on May 16; found on peas few days later. (Wis. Coop. Sur.).

PEA WEEVIL (*Bruchus pisorum*) - WASHINGTON - Unusually abundant on peas near Snake River, Whitman County; requiring control. (Dennis). Heaviest population in Yakima Valley since pre-DDT days. (Shipman).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NORTH CAROLINA - Light in Granville County May 12 (Chamberlin) and about 0.5 percent leaf loss in home gardens in Brunswick, Currituck and New Hanover Counties (Scott). VIRGINIA - Light in beans in Princess Anne and Norfolk Counties (Greenwood); present in eastern Nansemond County (Boush); and first adults seen in Chesterfield County on May 17 (Matheny).

WHITE GRUBS (*Phyllophaga* spp.) - WASHINGTON - Larvae in soil of cultivated fields planted to beets in 1957 and beans in 1958, at Moses Lake. Potential damage to bean fields involving approximately 150 acres. (Landis, Cox, May 16).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - First adults taken on matrimonyvine at Las Animas, Bent County. Populations high, 500 per 100 sweeps. Numbers low on bindweed. First adults taken May 12 on matrimonyvine at Fort Collins, Larimer County. (Exp. Sta., May 13). None collected in Saguache, Rio Grande and Alamosa Counties. (Exp. Sta., May 20). UTAH - Five per 100 sweeps on matrimonyvine at Green River. (Knowlton). Potato Psyllid Survey - A

Potato Psyllid Survey - A second survey, made during week of May 19-23, revealed areas east of the mountain range in Wyoming and Nebraska with heavier populations than earlier survey although still not comparable with a year ago. Populations on the eastern slope of the mountains in Colorado increased with average of 34 per 100 sweeps in Greeley district in northern Colorado and 147 in Arkansas Valley in southern Colorado. Indications are that infestation may not be as heavy as a year ago, however, continued favorable weather coupled with drying of host plants in southern States may bring on later, heavier, movements of potato psyllid into north and central plains States. Populations in area west of mountain range in Grand Junction and northern Utah area remains low. (PPC, ENT. States Coop.).

POTATO TUBERWORM (Gnorimoschema operculella) - CALIFORNIA - Heavy infestation of eggplant in Imperial, Imperial County. (Cal. Coop. Rpt.).

POTATO APHID (Macrosiphum solanifolii) - MARYLAND - Numbers light on tomatoes locally on Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Fairly common on potatoes in western Kent County. (MacCreary, Conrad).

Abundance of eggs of potato-infesting aphids in northeastern Maine - A survey was made April 22-25 to determine abundance of eggs of three species of potato-infesting aphids in northeastern Maine on their more important primary hosts and a similar survey in the same area was made May 1-2 on hawkweed, primary host of a fourth species. Fully distended (i.e. presumably viable) eggs of the buckthorn aphid (Aphis abbreviata) were found on alder buckthorn at 7 of the 8 sampling stations. The viable eggs were only about 17 percent as abundant as at the same stations a year ago, or one-half that of the 10-year spring average. In the past, this aphid has reached moderate to high levels on untreated potatoes when counts were smaller than those now present. Aphid eggs (fully distended and shriveled) on Canada plum - a primary host of the green peach aphid (Myzus persicae) - were found at 19 of 26 sampling stations. Overall egg abundance was the same as the 10-year spring average, which was over three times the 1957 spring abundance. Available evidence indicates a larger than usual percentage of the eggs present may have been deposited by the green peach aphid. Present outlook is for trace numbers to small populations to occur more generally in potato fields this summer than in recent years, but that large populations may develop in only a few scattered northeastern localities. Aphid eggs on swamp rose - the most important primary host of the potato aphid (Macrosiphum solanifolii) - were found at all 12 sampling stations. Total egg abundance was 82 percent of the 10-year spring average. With favorable conditions, appreciable numbers could develop on swamp rose and small numbers on Canada plum, and damaging populations could develop later in the season on potatoes. Distribution and abundance of aphid eggs on hawkweed were about the same as in late fall of 1957, but early-season abundance of the foxglove aphid might be somewhat larger than at same time in 1957, if conditions are favorable. Hatching of aphids on swamp rose began April 15-20 in central and southern Aroostook County. Aphids on hawkweed began hatching about May 5. (Shands, Simpson, Wave).

BEAN APHID (Aphis fabae) - CALIFORNIA - Heavy populations attacking tomato plants from The Woodland area of Yolo County. (Cal. Coop. Rpt.).

GOLDEN NEMATODE (Heterodera rostochiensis) - Survey completed in Siskiyou, Modoc and Fresno Counties, CALIFORNIA. Sampling in OREGON has been completed except for scattered collections in Baker and Umatilla Counties. (PPC, West. Reg., Apr. Rpt.).

COLORADO POTATO BEETLE (Leptinotarsa decimlineata) - NORTH CAROLINA - First appearance of season in Granville County, May 13. (Chamberlin). WASHINGTON - Adults unusually abundant in potato fields in Columbia Basin and at Toppenish. Eggs unusually abundant at Othello, Warden, Moses Lake and Quincy. Hatching underway at Othello and Toppenish. (Landis). LOUISIANA - Light to medium on tomatoes in West Carrol Parish and heavy on potatoes in Tangipahoa Parish. (Spink). MARYLAND - Adult populations moderate and eggs noted on untreated potatoes and tomatoes on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Light on potatoes in Nansemond County. (Boush). DELAWARE - Adults common on potatoes throughout State. Young larvae on potatoes in Sussex County. (MacCreary, Conrad).

A SPITTLEBUG - DELAWARE - Rather numerous on potatoes in southern New Castle County. (MacCreary, Conrad).

TOMATO FRUITWORM (Heliothis zea) - ALABAMA - Light to moderate infestations on tomatoes in several areas of Houston County. (Grimes). GEORGIA - Light infestations on tomatoes in Colquitt, Mitchell and Thomas Counties. (Johnson).

TOMATO HORNWORM (Protoparce quinquemaculata) - NORTH CAROLINA - First adults of season taken in light trap in Granville County, May 19. Only species of Protoparce collected to May 19. (Chamberlin).

VEGETABLE WEEVIL (Listroderes costirostiris obliquus) - GEORGIA - Heavy infestations of adults on foliage of tomatoes in Barrow County. (Johnson).

WHITEFLIES - LOUISIANA - Heavy on potatoes in Baton Rouge. (Spink).

WIREWORMS - NORTH DAKOTA - Several reports of attacks on potato seed pieces in Fargo area. (N. D. Ins. Rpt.). IDAHO - Adults of Ctenicera glauca abundant in Moscow area. (Homan).

A WEEVIL (Trichobaris compacta) - CALIFORNIA - Heavy infestation on eggplant in Chula Vista area of San Diego County. (Cal. Coop. Rpt.).

FLEA BEETLES - NORTH CAROLINA - Injuring newly set tomato plants in Granville County. (Chamberlin, May 14). NEW JERSEY - Heavy on potatoes in central area. (Ins. Dis. Newsl.). LOUISIANA - Light to medium on sweetpotatoes in St. Landry Parish. (Spink). MARYLAND - Epitrix cucumeris light to moderate on potatoes and tomatoes on Eastern Shore. E. hirtipennis moderate to heavy on tomatoes on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Medium to heavy on cucumber plants in Princess Anne and Norfolk Counties. (Greenwood). UTAH - Damaging tomato plants in Uintah Basin. (Knowlton). SOUTH CAROLINA - Damaging sweetpotato foliage in Orangeburg and Barnwell Counties. (Nettles et al.). NEW MEXICO - Light infestations on chili in Dona Ana County. (N. Mex. Coop. Rpt.).

ONION MAGGOT (Hylemya antiqua) - MASSACHUSETTS - Adults emerging, heavy infestation in chives. (Wheeler). IDAHO - Populations considerably reduced in southwestern area from general infestation which occurred during 1957. Some fields now showing 1 percent loss had up to 50 percent loss at same time in 1957. An extremely high population of adults observed in field of leek in same area. (Scott). WASHINGTON - Populations much lower than usual in Walla Walla area; passed peak April 22. (Woodworth).

ROOT MAGGOTS - CALIFORNIA - Heavy infestations in corn, potatoes, onions and beans at Camino, El Dorado County. (Cal. Coop. Rpt.).

MELON APHID (Aphis gossypii) - NEW MEXICO - Light and spotty infestations on chili in Dona Ana County. (N. Mex. Coop. Rpt.).

GRASSHOPPERS - NEW MEXICO - Severely damaged bell peppers in gardens near Las Cruces, Dona Ana County. Heavy infestations damaged untreated tomato fields near Deming, Luna County, to extent that replanting necessary. (N. Mex. Coop. Rpt.)

A FALSE CHINCH BUG (Nysius sp.) - NEW MEXICO - Heavy infestations in gardens at Carlsbad, Eddy County. (N. Mex. Coop. Rpt.).

LEAFHOPPERS - NEW MEXICO - Moderate infestations in carrots near Deming, Luna County, and heavy in carrots near Grants, Valencia County. (N. Mex. Coop. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - VIRGINIA - Adults numerous on beans some home gardens in Nansemond County. (Boush).

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) - CALIFORNIA - Locally heavy in artichokes in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

CUTWORMS - MASSACHUSETTS - Damaging asparagus. (Wheeler). NORTH DAKOTA - Numerous reports of damage to vegetable transplants. (N. D. Ins. Rpt.). CALIFORNIA - Medium infestation of Agrotis ypsilon on field peas from Long Beach area of Los Angeles County. (Cal. Coop. Rpt.). OKLAHOMA - Peridroma margaritosa damaging tomatoes in Stillwater area; all instars present. (Fenton). DELAWARE - Heavy infestation of P. margaritosa in tomato field in southern Sussex County. More than one-third of field destroyed. (MacCreary, Conrad).

ASPARAGUS BEETLES (Crioceris spp.) - IDAHO - Adults of C. asparagi appearing in large numbers in commercial asparagus plantings in Owyhee County; egg laying not begun. (Waters). C. duodecimpunctata adults abundant causing considerable injury to asparagus shoots in small planting at Moscow. (Gittins). VIRGINIA - Adults of C. asparagi present and damaging asparagus in Norfolk area. (Greenwood). WISCONSIN - C. asparagi adults continue active. (Wis. Coop. Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - ALABAMA - All properties in Coffee, Covington and Marengo Counties released from quarantine during April. Five new properties in LOUISIANA found infested. No new infestations found in GEORGIA and MISSISSIPPI. One adult trapped at St. Helena Island which is one of several locations in SOUTH CAROLINA where heavy infestations found in 1957. No other weevils found. (PPC, Sou. Reg., Apr. Rpt.).

A TENEBRIONID (Blapstinus sp., probably gregalis) - IDAHO - Adults abundant on 30 acres of safflower near Preston, with damage so severe that entire 30 acres will have to be replanted. (Johnson, May 16).

THRIPS - UTAH - Extremely numerous on blossoming sugar beet seed stocks in Washington County. (Knowlton). NEW MEXICO - Heavy infestations on onions in Dona Ana and Luna Counties. Seed onions in Dona Ana County also heavily infested. (N. Mex. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - NEVADA - Increasing populations on seed sugar beets in Moapa Valley, Clark County. (Gallaway, May 16).

BEEET WEBWORM (Loxostege sticticalis) - UTAH - Very heavy flight of adults in town of Price, also abundant at Moab and Green River. Common locally in northern and central areas. (Knowlton).

STRAWBERRY WEEVIL (Anthonomus signatus) - NORTH CAROLINA - Up to 40 percent loss of buds in one acre planting of dewberries in Johnston County May 9; also infesting smaller plantings. (Scott).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - IDAHO - Exceedingly abundant in four acre field of strawberries near Parma, where approximately 80 percent of plants completely or partly destroyed. (Scott).

STRAWBERRY LEAF ROLLER (*Ancyliis comptana fragariae*) - MASSACHUSETTS - Adults active and lying eggs. (Wheeler). IDAHO - Adults becoming common though not yet abundant in commercial strawberry fields in Canyon County. (Waters). ILLINOIS - Adults active and numerous in Anna area. (Meyer). UTAH - Some damage noticed at Orem and near Ogden. (Knowlton). WISCONSIN - Populations range from light to medium in Door County. (Wis. Coop. Sur.).

OBLIQUE-BANDED LEAF ROLLER (*Archips rosaceana*) - ILLINOIS - Adults active and numerous in strawberry fields in Centralia area. (Meyer).

SPIDER MITES - UTAH - *Tetranychus* spp. unusually abundant on some Utah County strawberries. (Knowlton).

TOBACCO INSECTS

BUDWORMS (*Heliothis* spp.) - NORTH CAROLINA - First appearance of season in Columbus County (Strickland) and general infestation of 25 to 50 percent of plants in Columbus County (Guthrie). GEORGIA - Light to heavy infestations of *H. virescens* on tobacco in Cook, Colquitt, Mitchell, Thomas and Grady Counties. (Johnson). FLORIDA - First *H. virescens* eggs and larvae of season observed on shade tobacco at Quincy, Gadsden County. Sixty-four eggs and two first-instar larvae found on 1,050 plants inspected. (Tappan, May 16).

GREEN PEACH APHID (*Myzus persicae*) - GEORGIA - Light infestations on tobacco in Cook, Colquitt, Mitchell, Thomas and Grady Counties. (Johnson).

TOBACCO HORNWORM (*Protoparce sexta*) - FLORIDA - First eggs of season observed, averaging 3-4 per plant on 1,000 plants inspected on shade tobacco at Quincy, Gadsden County. (Tappan, May 16).

VEGETABLE WEEVIL (*Listroderes costirostus obliquus*) - MARYLAND - Damaging tobacco in beds in St. Marys and Calvert Counties. Controls being applied. (U. Md., Ent. Dept.). SOUTH CAROLINA - Infesting tobacco plant beds in Florence County. (Nettles et al.).

A MIDGE (*Hydrobaenus* sp.) - NORTH CAROLINA - Damaging a tobacco plant bed in Rockingham County on May 14. (Farrier, Rabb).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Found 0-2 per thousand plants in 14 experimental fields, Florence and Darlington Counties, May 21-22. Sixteen taken on trap plot flight screens and 16 on basic acre screen. (Cott. Lett.) NORTH CAROLINA - None found in 3 of 7 fields examined, Scotland County, and about one per 500 plants in other 4 fields. (Jones). ALABAMA - Five collected on tanglefoot screens in cotton fields, Autauga County. Survey of 125 acres revealed 20 per acre. (Rawson, Grimes, Lester). LOUISIANA - Averaged 23 per acre in 33 fields examined in Madison Parish, May 15-21. Found in only 9 of the fields. Survival in hibernation cages was 2.48, May 21, as compared with 0.33 for same date in 1957. (Smith et al.). Light to heavy in St. Landry Parish (Smith) and light in Tensas Parish (Oliver). GEORGIA - Averaged 200 per acre in 21 fields of cotton in 9 south central and southwestern counties. Much of cotton just beginning to square. (Johnson). MISSISSIPPI - Most cotton in Stoneville area too small to attract weevils. In Madison County, 300 were collected from one field of older cotton. Populations extremely light in delta fields examined to date. (Merkl et al.). TEXAS - Winter survival in hibernation cages was 4.8 percent, compared with 5.22 in 1957 to May 23. Averaged 138 per acre in 30 fields inspected, McLennan and Falls Counties. (Parenica et al.).

BOLLWORMS (*Heliothis* spp. et al.) - ALABAMA - Moderate damage to cotton by *H. virescens*, Autauga and Lee Counties. (Rawson, Grimes, Guyton). GEORGIA - *H. zea* averaged 1 egg and 2.5 larvae per 100 terminal buds in 21 fields in 9 south central and southwestern counties. (Johnson). NEW MEXICO - *H. zea* very light in cotton fields in Dona Ana County. (N. Mex. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - MEXICO - Inspections were conducted on 640,845 blooms in Municipios of Culliacan, Guasava, Sinaloa, DeLeyva, Angostura, Ahome and El Fuerte, Sinaloa. No pink bollworm found. (PPC, Mex. Reg., Apr. Rpt.).

APHIDS - LOUISIANA - Very light, averaged 0.20 per plant in one field, Madison Parish. (Smith et al.). Five per seedling, Tensas Parish. (Oliver). MISSISSIPPI - Generally light over delta counties. (Merkl et al.). TEXAS - *Aphis gossypii* medium in 2 and light in 28 fields, McLennan and Falls Counties. (Parenacia et al.). NEW MEXICO - *A. gossypii* generally light throughout Mesilla and Pecos Valleys. Some heavy but spotty infestations of *A. medicaginis* in Dona Ana and Eddy Counties. (N. Mex. Coop. Rpt.).

BEE T ARMYWORM (*Laphygma exigua*) - ARIZONA - Light in some areas, no serious damage. (Ariz. Coop. Rpt., May 18). CALIFORNIA - Heavy infestations damaging cotton in Pixley area, Tulare County. (Cal. Coop. Rpt.). NEVADA - Larvae, possibly this species, heavy on cotton in Moapa Valley, Clark County, and Pahrum Valley, Nye County. (Bechtel, Zoller, May 16).

BROWN COTTON LEAFWORM (*Acontia dacia*) - TEXAS - Occasional in a few fields, along with yellow-striped armyworm, cabbage looper and garden webworm, McLennan and Falls Counties. (Parenacia et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEW MEXICO - Generally light in Dona Ana County. (N. Mex. Coop. Rpt.).

COTTON FLEAHOPPER (*Psallus seriatus*) - TEXAS - Adults present in about one-half of fields inspected, McLennan and Falls Counties, occasional nymphs in a few fields. (Parenacia et al.).

A BLACK COTTON FLEAHOPPER - NEW MEXICO - Adults and nymphs light on cotton, Dona Ana County. (N. Mex. Coop. Rpt.).

CUTWORMS - LOUISIANA - Light to heavy in St. Landry Parish. (Smith). MISSISSIPPI - Populations spotted, some heavy damage to cotton adjoining ditch banks and turn rows when these have been moved. No general damage in open fields in delta counties. (Merkl et al.).

LEAFHOPPERS - NEW MEXICO - Nymphs very abundant on cotton in Dona Ana and Eddy Counties. Building up rapidly in most fields. (N. Mex. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Appearing in Yuma County stub cotton and numbering as high as 20 per 100 sweeps in Maricopa County. (Ariz. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - TEXAS - Attacking cotton, Wharton County. (Smith).

THRIPS - ALABAMA - Moderate damage to cotton in central areas. (Rawson, Grimes, Lester). LOUISIANA - Appear to be very light, with none found in one field examined, Madison Parish. (Smith et al.). Light in East Carroll and Tensas Parishes. (Hankins, Oliver). MISSISSIPPI - Extremely light in cotton fields of delta counties. (Merkl et al.). TEXAS - Heavy in one field, medium in 8 and light in 21, McLennan and Falls Counties. (Parenacia et al.). NEW MEXICO - Severe damage to many fields near Hatch and Las Cruces, Dona Ana County, and moderate damage in Luna County. Light in Chaves and Eddy Counties. (N. Mex. Coop. Rpt.). ARIZONA - Causing some injury in Pinal County and still present in unsprayed fields, Cochise County. Very few appearing in Graham County. (Ariz. Coop. Rpt.).

A WEBWORM - ALABAMA - Causing moderate damage in buds of young cotton. (Rawson, Grimes, Lester). NEW MEXICO - Occasionally spotty and light on cotton, Dona Ana County. (N. Mex. Coop. Rpt.).

Cotton Insects in Lower Rio Grande Valley, Texas - FLEAHOPPERS still present over most of the Valley but not increasing in general. Heavier infestations of PINK BOLLWORMS in several fields south of San Benito and some in one field of early blooming cotton near Monte Alto. Few BOLL WEEVILS in other fields near Los Fresnos, Brownsville, Mission and along some brush lines in Willacy County. Only light infestations of SPIDER MITES present and BOLLWORMS causing minor damage to terminals and squares in scattered fields. LYGUS BUGS also in damaging numbers where fleahoppers are causing damage. (Deer).

INSECTS AFFECTING MAN AND ANIMALS

BLACK FLIES (Simuliidae) - SOUTH DAKOTA - Adults of Simulium spp. annoying in vicinities of Brookings, Flandreau and Canton. (Hantsbarger). RHODE ISLAND - Complaints general over State. (Mathewson). WISCONSIN - Numerous and attacking people in Florence County. (Wis. Coop. Sur.).

CATTLE GRUBS (Hypoderma spp.) - IOWA - Seriously annoying cattle. (Iowa Ins. Inf.).

DEER FLIES - NEVADA - Heavy populations of Silvius sp. in Moapa and Virgin Valleys, Clark County. (Bechtel, Gallaway, Lauderdale, May 16). VIRGINIA - Chrysops sp. very heavy in Nansemond County. (Boush, Bush).

EYE GNATS (Hippelates sp.) - NEVADA - Unusually high population at this time in Moapa and Virgin Valleys, Clark County, compared with previous years. (Bechtel, Gallaway, May 16).

HORN FLY (Siphona irritans) - OKLAHOMA - Mature cows in Marshall County averaged 500-900 flies each. (Coppock). LOUISIANA - Medium infestation in West Carroll Parish. (Spink). WISCONSIN - Building up in southern counties. (Wis. Coop. Sur.). MISSOURI - Continuing to increase on untreated herds. (Kyd, Thomas).

HOUSE FLY (Musca domestica) - NEVADA - Heavy increase in southern counties, especially in and around dairies. (Lauderdale, May 16).

MOSQUITOES - DELAWARE - Adults of Aedes cantator and A. sollicitans collected May 12, and fourth-instar larvae of Culex piniens, C. restuans and C. territans collected May 14, all in New Castle County. (Darsie, May 16). NEBRASKA - Large larval populations of Aedes dorsalis and A. vexans occurring in Knox, Cedar, Lancaster and Lincoln Counties. (Rapp). NEVADA - Aedes sp. an extreme nuisance in areas of Clark, Churchill and Washoe Counties. (Bechtel, Gallaway, May 16). NORTH DAKOTA - Aedes fitchii, A. spencerii and A. excrucians emerged. Populations of A. spencerii are lower than normal this spring. A. flavescens and A. dorsalis are emerging but only slightly bothersome. A dry winter and spring appear to have reduced populations of most early species. (N. Dak. Ins. Rpt.). NORTH CAROLINA - Adults of Aedes sollicitans declining in coastal areas, but still abundant. (Ashton). IOWA - Larvae abundant in northern half of State. One pool in Goldfield County with estimated 2,240,000 larvae, May 20. (Iowa Ins. Inf.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Building up in southern counties. (Wis. Coop. Sur.).

TABANIDS - LOUISIANA - Horse flies numerous in St. Bernard, Acadia and Terrebonne Parishes. (Spink). NORTH CAROLINA - Becoming abundant on the coast. (Ashton).

TICKS - MASSACHUSETTS - Wood ticks more numerous than usual in central area, Worcester County. (Wheeler). VIRGINIA - Unusually abundant in Nansemond County. (Boush). RHODE ISLAND - Dermacentor variabilis active statewide in known range. (Caroselli, Hyland, Stoner). NORTH CAROLINA - Numerous reports of D. variabilis from Wake County. (Ashton). SOUTH CAROLINA - Rhipicephalus sanguineus infestation general in dog kennels, Colleton County. (Nettles et al.). WISCONSIN - D. variabilis numerous in several localities but appear less general than in 1957. (Wis. Coop. Sur.). NORTH DAKOTA - Engorged D. variabilis from horses, McHenry County. Appear less abundant along Red River than in past years. (N. D. Ins. Rpt.). NEBRASKA - D. variabilis very active in northern Knox County. (Rapp).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEVADA - Generally distributed throughout Las Vegas, Clark County. About 25 of the 50 dead or injured elms checked had been or were infested by this beetle. Available evidence indicates that beetle was in area at least as early as last summer. (Bechtel, May 16). Identification confirmed by W. H. Anderson. According to ARS record, this is the first report for the State. OKLAHOMA - Adults still emerging in Stillwater area. (Price). KANSAS - Feeding in twig notches and causing sap flow in localized areas in east central Kansas. First seasonal report of active feeding damage this spring. (Matthew).

BARK BEETLES - ALABAMA - Pityophthorus annectans in greater abundance in Chewacla State Park than observed near Auburn in several years. Infesting slash from pulp wood and timber cutting. (Pearson, May 17). WEST VIRGINIA - Severe, killing red pines in Hampshire County. (W. Va. Ins. Sur.).

WHITE-PINE WEEVIL (Pissodes strobi) - WISCONSIN - In east central area extended oviposition has occurred and species has been moderate to heavy in Scotch and white pine plantings, May 16. (Wis. Coop. Sur.).

SOUTHERN PINE SAWYER (Monochamus titillator) - ALABAMA - Adults more abundant than usual in Auburn and vicinity. (Pearson).

PALES WEEVIL (Hylobius pales) - PENNSYLVANIA - Several more pine plantations showing injury in southwest. (Udine).

BLACK HILLS BEETLE (Dendroctonus ponderosae) - COLORADO - Control projects have been started in Pike and Roosevelt National Forest. (For. Ent., ARS).

PINE SAWFLIES - NEW JERSEY - Active. (Ins. Dis. Nesl.). WISCONSIN - Neodiprion nanulus larvae mostly hatched in Poynette area. (Wis. Coop. Sur.). MARYLAND - Extensive defoliation by N. pratti on Virginia pines in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). INDIANA - Neodiprion sertifer infesting Virginia pine in Lawrence County. This is first record of the species occurring in southern Indiana. (Osmun).

FOREST TENT CATERPILLAR (Malacosoma disstria) - WASHINGTON - Late second to third-instar larvae on willow and neglected apple. Light defoliation. About 5 times more abundant than in 1957 in Renton-Bothell area, King County, but centers of infestation scattered. (Dailey, May 16). CALIFORNIA - Medium on cherry trees at Freshwater, Humboldt County. (Cal. Coop. Rpt.). WISCONSIN - Hatching complete in northeastern counties. Several patches of heavy defoliation in Langlade and Oneida Counties. Hatching retarded by cold periods. (Wis. Coop. Sur.). PENNSYLVANIA - Larvae in fourth instar on red oak, Perry County. (Drooz).

EASTERN TENT CATERPILLAR (*Malacosoma americanum*) - WISCONSIN - Appears less numerous than last year. (Wis. Coop. Sur.). RHODE ISLAND - Early instar larvae on a variety of hosts, wild cherry in particular, statewide. Apparently heavier than usual in Providence-Johnston area. (Mathewson, Stoner). MASSACHUSETTS - Abundant in Cape Cod area and locally elsewhere in eastern and western areas. (Wheeler). NEW JERSEY - Migrating in large numbers from wild cherry trees. (Ins. Dis. Newsl.). PENNSYLVANIA - Great numbers still migrating with some feeding on ornamentals; general in State. (Udine). MARYLAND - Particularly heavy this spring on wild cherry and neglected fruit trees in most sections. (U. Md., Ent. Dept.).

TENT CATERPILLARS (*Malacosoma* spp.) - WASHINGTON - Third to fourth-instar larvae of *M. pluviale* on alder and neglected apple in Renton-Bothell area, King County and about 10 times more abundant than in 1957. Abundant in scattered centers causing light defoliation. (Dailey, May 16). COLORADO - Control programs for *M. fragilis* will be carried out near La Veta, Huerfano County. (For. Ent., ARS).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Reported from Lee County area for first time in 1958. (Pearson).

SPRING CANKERWORM (*Palecitra vernata*) - NEBRASKA - Larval population high in Lincoln area. High damaging populations also occur in wind breaks and in towns and along rivers in northwest and Loup Valley area. (Andersen). KANSAS - Most damage over but infestations in Norton and Rawlins Counties. (Matthew).

GYPSY MOTH (*Porthetria dispar*) - MICHIGAN - Plans underway to trap area involving 1,500 square miles during 1958 season. No moths found since 1956; infested acreage treated under cooperatively conducted program in May 1957. (PPC, Cent. Reg., Apr. Rpt.). Egg hatch observed in Pownal, VERMONT, April 23 and in Waterbury, CONNECTICUT, on April 24. In NEW YORK, first hatch observed April 24 at Salem, Washington County. First hatch in PENNSYLVANIA infested area, April 28. First application of insecticide under State of Pennsylvania contract made April 24 when about 13,000 of 100,000 acres to be treated under that contract were sprayed. Massachusetts Department of Natural Resources started spraying operations on Cape Cod, MASSACHUSETTS at Brewster infestation, April 11, and one of two live infestations on Long Island, NEW YORK, was sprayed with a mist blower on April 24. Spraying on Long Island was done in Huntington Township, involving total of 30 acres, including 15 acres of nursery property; the second known infestation on Long Island is in Rockville Centre, and will be treated later. In NEW YORK, trapping plans will include a strip of territory abutting quarantined area to west and north in Broome, Chenango, Madison, Oneida and Herkimer Counties in addition to the suppressive area. Total of 13,000 traps will be used to survey some 5.5 million acres. In NEW JERSEY, total of 3,155 acres of open land and 3,933 acres of woodland have been intensively scouted in Morris and Hunterdon Counties since October, 1957. The area of scouting follows valley extending from southern Morris County through Somerset and Warren Counties to Delaware River. (PPC, East. Reg., Apr. Rpt.). Through May 21, 166,320 acres had been sprayed in PENNSYLVANIA under Federal contract calling for approximately 400,000 acres. The Pennsylvania State contract has been completed with 103,300 acres being sprayed. (PPCD).

LARCH SAWFLY (*Pristiphora erichsonii*) - WISCONSIN - Adults emerged in Madison area and laying eggs. (Wis. Coop. Sur.).

A DOUGLAS-FIR CONE MOTH (*Barbara colfaxiana*) - IDAHO - Eggs hatching on Douglas-fir trees in open stand near Moscow. (Clark).

EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) - INDIANA - Infesting Scotch and Virginia pines in Lawrence County. First record of the species occurring in southern half of State. Heavy infestation near Bristol, May 16. (Schuder).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - ALABAMA - Heavy on young pine in Wilcox County, with 40-70 percent in pupal stage. (Grimes, May 17). Abundant and widely distributed in central area. (Pearson, Grimes).

SPITTLEBUGS - DELAWARE - Common on pines in southern Sussex County. (MacCreary, Conrad). MARYLAND - Moderate numbers of *Aphrophora parallela* on pines on upper Eastern Shore. (U. Md., Ent. Dept.). WEST VIRGINIA - *A. parallela* light on pines, Hampshire County. (W. Va. Ins. Sur.)

LARCH CASEBEARER (*Coleophora laricella*) - IDAHO - An outbreak first reported near St. Maries in 1957, is now found in larch stands between St. Maries and Sandpoint, a distance of about 70 miles. Further surveys underway. (Missoula For. Ins. Lab., May 16).

APHIDS - UTAH - Common on roses and generally severe in southern area. Snowball aphids general and seriously curling foliage. (Knowlton). NEW JERSEY - Very numerous in some places. (Ins. Dis. Newsl.). IDAHO - Infestations developing on a wide variety of ornamentals, shrubs and shade trees throughout many areas of State. One severe infestation on willows at Twin Falls but this species unidentified. (Gittins, T.F.F.S.). *Mascrosiphum rosae* infestations developed early on roses in Twin Falls and leaves and buds heavily colonized in many cases. (T.F.F.S.). INDIANA - Unusually abundant on roses, spirea, honeysuckle pine and maple throughout State. (Osmun). PENNSYLVANIA - *Pineus strobi* fairly abundant on pines in south central (Pepper) and in southwest (Udine).

SCALE INSECTS - MARYLAND - *Chrysomphalus obscurus* heavy on oak at Odenton. (U. Md., Ent. Dept.). INDIANA - *Chionaspis furfura* heavily infesting birches near Milford, May 16. (Osmun). KANSAS - *Cryptaspidiotus shastae* damage continues throughout many localized areas of central and east central sections. (Matthew). CALIFORNIA - Heavy infestation of *Stomacoccus platani* on oriental plane trees in Concord, Contra Costa County. (Cal. Coop. Rpt.). ALABAMA - Severe damage to young oaks by *Lecanium quercifex* in Talladega County. (Ruffin). NEW JERSEY - *Lepidosaphes ulmi* abundant on lilac. (Ins. Dis. Newsl.) IDAHO - Several severe infestations of *L. ulmi* on green ash trees in Twin Falls. (T.F.F.S.).

MITES - NEW JERSEY - Eriophyid mites causing some concern. (Ins. Dis. Newsl.). MARYLAND - Spider mites damaging hemlock at Brookville. (U. Md., Ent. Dept.). WISCONSIN - *Tetranychus telarius* numerous on many ornamental evergreens. (Wis. Coop. Sur.). NORTH DAKOTA - Populations high on spruce and juniper in Fargo area. (N. Dak. Ins. Rpt.).

JAPANESE BEETLE (*Popillia japonica*) - INDIANA - Treatment completed on 32 acres at Wanatah, and 40 acres at Argos. (PPC, Cent. Reg., Apr. Rpt.).

BAGWORM (*Thyridopteryx ephemeraeformis*) - INDIANA - Larvae found locally in Woodson County; elsewhere no larvae but eggs in pre-hatch condition. General hatch expected about first week of June. (Matthew).

DOGWOOD BORER (*Thamnosphacia scitula*) - MARYLAND - Damaging dogwood at Cantonsville. (U. Md., Ent. Dept.).

BOXWOOD LEAF MINER (*Monarthralpus buxi*) - NEW JERSEY - Adults 60 percent emerged in New Brunswick area. (Ins. Dis. Newsl.). DELAWARE - Large numbers of adults in New Castle County May 17-18. (MacCreary Conrad).

A BRUSH-FOOTED BUTTERFLY (*Limenitis* sp.) - NEVADA - Defoliating hawthorn in Reno, Washoe County. (Gallaway, May 16).

WHITE-LINED SPHINX (*Celerio lineata*) - NEW MEXICO - Larvae abundant around Las Cruces and Albuquerque. Causing some damage to flowers. (N. Mex. Coop. Rpt.).

PAINTED-LADY (*Vanessa cardui*) - IDAHO - Adults exceedingly abundant in most south central and southwestern areas. If present trends continue, heavy defoliation of Canada thistle will occur with possible feeding injury on a number of flowering plants in home gardens, particularly hollyhocks. (Gittins, May 16). Adults locally abundant throughout northern area with the first large-scale spring flight observed in Moscow, May 18. Adult populations generally much below those in southern area. (Portman, Gittins).

BIRCH LEAF MINER (*Fenusa pusilla*) - MASSACHUSETTS - Larvae in eastern area, May 15. (Wheeler). DELAWARE - Larvae on leaves in New Castle County. (MacCreary, Conrad).

BROWN-HEADED ASH SAWFLY (*Tomostethus multincinctus*) - KANSAS - Local defoliation of ash trees in Woodson County and several east central and southeast areas. (Mathew).

DUSKY BIRCH SAWFLY (*Croesus latitarsus*) - WISCONSIN - Adults emerged in Dane County. Larvae have begun defoliation. (Wis. Coop. Sur.).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - ILLINOIS - Active in southern third of State. (Ill. Ins. Rpt.). ALABAMA - Reported for first time this year in Lee County, May 23. (Pearson).

MAPLE BLADDER-GALL MITE (*Vasates quadripes*) - NORTH DAKOTA - Several heavy infestations on silver maple in Fargo area. (N. Dak. Ins. Rpt.). INDIANA - Common silver maples throughout State, May 16. (Schuder). PENNSYLVANIA - Several instances on maple in York County (Pepper) and in southwest (Udine).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (*Trogoderma granarium*) - During April, 7 new and 1 reinfestations were found in CALIFORNIA. They were as follows: One in Fresno, 4 new and one reinfestation in Kern County, and 2 new in Imperial County. (PPC, West. Reg.). Two new infestations found in Baja California, MEXICO, during April. Both in Mexicali area. (PPC, Mex. Reg., Apr. Rpt.). Total of 40 inspections were made in Yellowstone, Carbon, Stillwater and Big Horn Counties, MONTANA. (PPC, West. Reg., Apr. Rpt.). One inspection made at Faribault, MINNESOTA, during April was negative. (PPC, Cent. Reg.). One inspection in ALABAMA, 2 in GEORGIA, 3 in MISSISSIPPI, 42 in TEXAS reported negative during April. All inspections conducted in OKLAHOMA also negative. (PPC, Sou. Reg., Apr. Rpt.). Surveys continued in NEW JERSEY, PENNSYLVANIA, WEST VIRGINIA and VIRGINIA. All determinations received to April 1 on specimens submitted for identification have been negative. (PPC, East. Reg., Apr. Rpt.).

BENEFICIAL INSECTS

AN ALFALFA WEEVIL PARASITE (*Bathyplectes curculionis*) - IDAHO - Adults ranging 20-35 per sweep in alfalfa fields in Arena Valley, Canyon County. (Waters).

A SPOTTED ALFALFA APHID PARASITE (*Praon palitans*) - NEVADA - Generally distributed throughout alfalfa fields in Pahrump Valley, Nye County and Moapa Valley, Clark County. The species has spread from Moapa Valley to Virgin Valley and the Warm Spring area, Clark County. (Bechtel, Gallaway, Zoller, May 16).

HONEY BEE (*Apis mellifera*) - CALIFORNIA - Favorable weather conditions have produced the best orange flow of honey in several years in southern area. In Riverside County swarming has not been a serious problem. (Cal. Coop. Rpt.).

PARASITES - COLORADO - Alfalfa weevil 50-60 percent parasitized in unsprayed fields, Mesa County. (Exp. Sta., May 13).

PREDATORS - COLORADO - Lady beetles building up where pea aphid populations are high in Mesa County. (Exp. Sta., May 13). NEVADA - *Nabis* sp., *Orius* sp., *Geocoris* sp., lady beetles and syrphid larvae heavy in alfalfa fields in southern counties. (Bechtel et al., May 16). NORTH DAKOTA - Counts of 1 adult lady beetle per 5 sweeps in legumes in southeast area. (N. Dak. Ins. Rpt.). IDAHO - Adults average 1 per 2 sweeps in red clover and alfalfa in southwestern area. No larvae observed. (Waters). Adults averaged 1 plus per sweep, in most alfalfa fields in Nez Perce and Latah Counties. Hatching on shade trees, Moscow area. (Gittins). OKLAHOMA - Lady beetles and lacewing fly larvae abundant in alfalfa and small grains throughout State. (Coppock).

MISCELLANEOUS INSECTS

COCKROACHES - NORTH CAROLINA - *Periplaneta americana*, *Supella supellectilium* and *Blattella germanica* infesting stores and homes in Brunswick and New Hanover Counties. (Scott).

CLOVER MITES - NORTH DAKOTA - Numerous very heavy home infestations in many sections. (N. Dak. Ins. Rpt.). MASSACHUSETTS - A nuisance in many homes. (Wheeler).

EUROPEAN EARWIG (*Forficula auricularia*) - IDAHO - Infestations developing in and around homes in Moscow area. (Gittins).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - Found for the first time in Morehouse Parish, LOUISIANA, during April. In Hillsborough County, FLORIDA, 15,000 additional acres found infested, and in LOUISIANA, 7,714 additional acres found infested, bringing total known infested acres in State to about 4,000,000. An additional 1,070 acres found infested in Onslow County, NORTH CAROLINA. In TEXAS, surveys in Harris County found the main infestation to extend through heart of Houston and in Bexar County, the main body of infestation is in southeastern part of San Antonio. Surveys in Bryan, Choctaw, Pushmataha and McCurtain Counties, OKLAHOMA, and 6 TENNESSEE counties were negative. Treatments were completed during April in the following counties: Harrison, Henderson, Gregg, Smith and Victoria, TEXAS; Bienville, East Feliciana, Rapides, Terrebonne and West Feliciana Parishes, LOUISIANA; and all infestations in NORTH CAROLINA and SOUTH CAROLINA with the exception of those in Onslow County, North Carolina and Charleston and Orangeburg Counties, South Carolina. Other important treatments completed during April include 7,222 acres in Union County, ARKANSAS; 46,020 acres near Fitzgerald, 11,000 acres in Fort Benning reservation near Columbus, and 1,800 acres in Pike County, GEORGIA. (PPC, Sou. Reg., Apr. Rpt.).

POWDER POST BEETLES (*Lyctus* spp.) - WASHINGTON - Severely damaged implement handles in wood manufacturing plant at Hoquiam. (Telford).

TERMITES - MASSACHUSETTS - Subterranean termites more noticeable this year. (Wheeler). RHODE ISLAND - *Reticulitermes flavipes* winged forms at Woonsocket, Sauerstown and Warwick. (Caroselli). Reports from several locations all week. (Mathewson).

VARIED CARPET BEETLE (*Anthrenus verbasci*) - MISSISSIPPI - Adults and larvae infesting brushes made of horse hair in a store in Lowndes County. (Hutchins).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Laph. frug.	Perid. marg.	Protoparce sexta quinq.	Heliothis zea vires.
ALABAMA (County)						
Lee 5/17-23		32				78
FLORIDA						
Gainesville 5/13					1	
ILLINOIS						
Urbana 5/16-22	549	21		19		
KANSAS						
Garden City 5/17-20	42	32			14	
Hays 5/16, 18-19, 21	364	2				
Manhattan 5/17-23	1,150	24				4
Wathena 5/14-19	425	4				
LOUISIANA						
Baton Rouge 5/16-23	68	44	39	44		41
Franklin 5/15-21		1		44		3
MARYLAND						
Fairland	18					
MISSISSIPPI						
Grenada 5/14	11	9				
State College 5/17-23	16	8		1		1
*Stoneville 5/17-23	56	64		27	5	34
MISSOURI						
Columbia 5/21-23	28	3				
Sikeston 5/2-22	310	35		33		2
NORTH CAROLINA						
Clayton 5/22					3	5
Faison 5/22		2			6	8
						6
						1
NORTH DAKOTA						
Fargo 5/17-23	394			41		
SOUTH CAROLINA						
Clemson 5/17-23	41	7			5	17
Florence 5/18-24	3	6		2	4	10
						38
						193
SOUTH DAKOTA						
Brookings 5/21, 23	812	40				
TENNESSEE (Counties)						
Blount 5/13-19	306	15		66		
Cumberland	10			4		1
Greene	228	4		5		
Johnson	418	13		65		
Madison	236	7		47		8
Maury	145	8		9		6
Robertson	68	9		5		3

*Four traps Stoneville

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. yps	Laph. frug.	Perid. marg.	Protoparce sexta quinq.	Heliothis zea vires.
TEXAS						
Brownsville 5/12-17		8	95	12		39
Waco 5/17-23	51			120		16
Weslaco 5/1-15	72	80	19	236		80
Winter Haven 5/19	31	81		97		18
VIRGINIA						
Holland 5/22					2	

Additional Collections:

COLORADO - Rocky Ford - Loxostege sticticalis, 323; Chorizagrotis auxiliaris, 14; Autographa californica, 13; Celerio lineata, 54.

CORRECTIONS

CEIR 8(20):381 - APHIDS, Nevada change to read A JUMPING PLANT LOUSE.

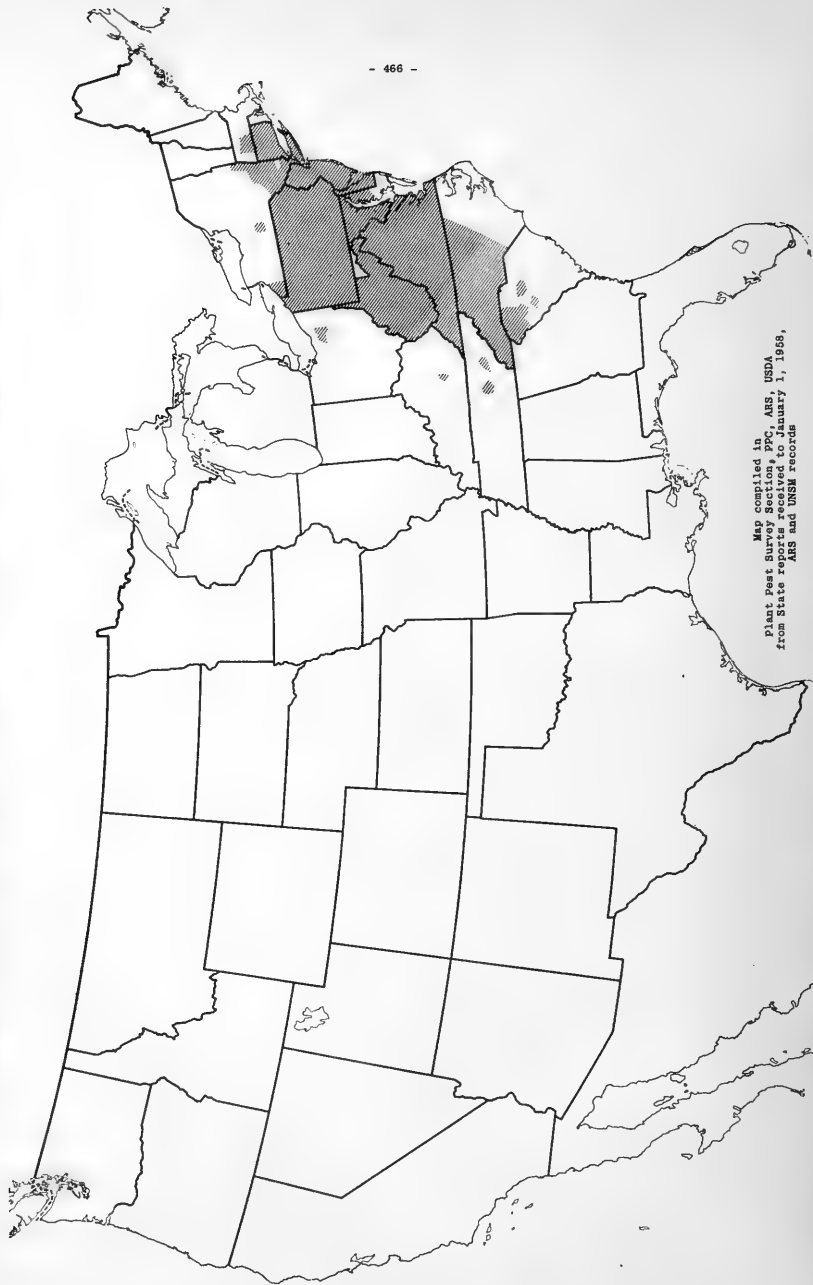
ADDITIONAL NOTES

NEW YORK - RED-BANDED LEAF ROLLER egg deposition apparently lighter than usual in western area. Very scarce in Rockland County. First larvae found May 22 in Wayne and Monroe Counties. ROSY APPLE APHID a real problem in few orchards in Monroe County. Heavy population of APPLE APHID on some prune blocks and TENT CATERPILLARS very abundant in all areas of Niagara County. PEAR PSYLLA hatch moving rapidly in Niagara County and hatch nearly complete May 23 in Wayne County. First CODLING MOTH in emergence cages on May 22 in Wayne County and May 26 at Geneva. PLUM CURCULIO egg laying first observed at Geneva May 24. Light to moderate infestations of PEAR LEAF BLISTER MITE in some pear orchards in Niagara County where dormant sprays omitted; moderate to heavy infestations where sprays not applied for two years or more. CORN FLEA BEETLES scarce on commercial plantings at Wawarsing, Ulster County, May 20. APHIDS very thick some coldframe lettuce on Staten Island. COLORADO POTATO BEETLES feeding on young plants in Nassau County. CABBAGE MAGGOT found in small field on May 21 in Rockland County. POTATO BEETLES and FLEA BEETLES thick on potatoes in Orange County. ALFALFA WEEVIL larvae about half grown in Ulster County; infestation noticeable but damage quite light. SPITTLEBUGS light in most alfalfa fields in Ulster County. (N. Y. Wkly. Rpt.).

WEST VIRGINIA - ALFALFA WEEVIL light to medium on alfalfa, eastern panhandle counties. Additional counties found to be infested to date are Roane, Lewis, Preston, Harrison and Tucker. (W. Va. Ins. Sur.).

PENNSYLVANIA - Sweepings in alfalfa in Fayette County revealed no SPOTTED ALFALFA APHID. PEA APHID very abundant in alfalfa in same county, but no injury evident as yet. Parasitism beginning to show. Very few TARNISHED PLANT BUGS found in Fayette County alfalfa and no ALFALFA WEEVIL collected. (Udine). CUCUMBER BEETLES on cantaloup in several places in York County. (Pepper). Heavy emergence of CODLING MOTH in emergence cages, Adams County. (Asquith).

DISTRIBUTION OF GIANT HORNET (*VESPA CRABRO GERMANA*)



Map compiled in Plant Pest Survey Section, ARS, USDA from State records, ARS, USDA records, ARS and USNM records, January 1, 1968.

SOME OF THE MORE IMPORTANT PESTS FOR 1957

Due to suggestions of cooperators, two categories of the more important pests of 1957 were requested last fall. These were "Crop and Forest Pests" and "Man and Animal and Household Pests". The majority of the States employed the two lists while some chose to use a single listing. In the table below where a State shows two lists, the first is for crop and forest pests and the second is for man and animal and household pests unless designated otherwise.

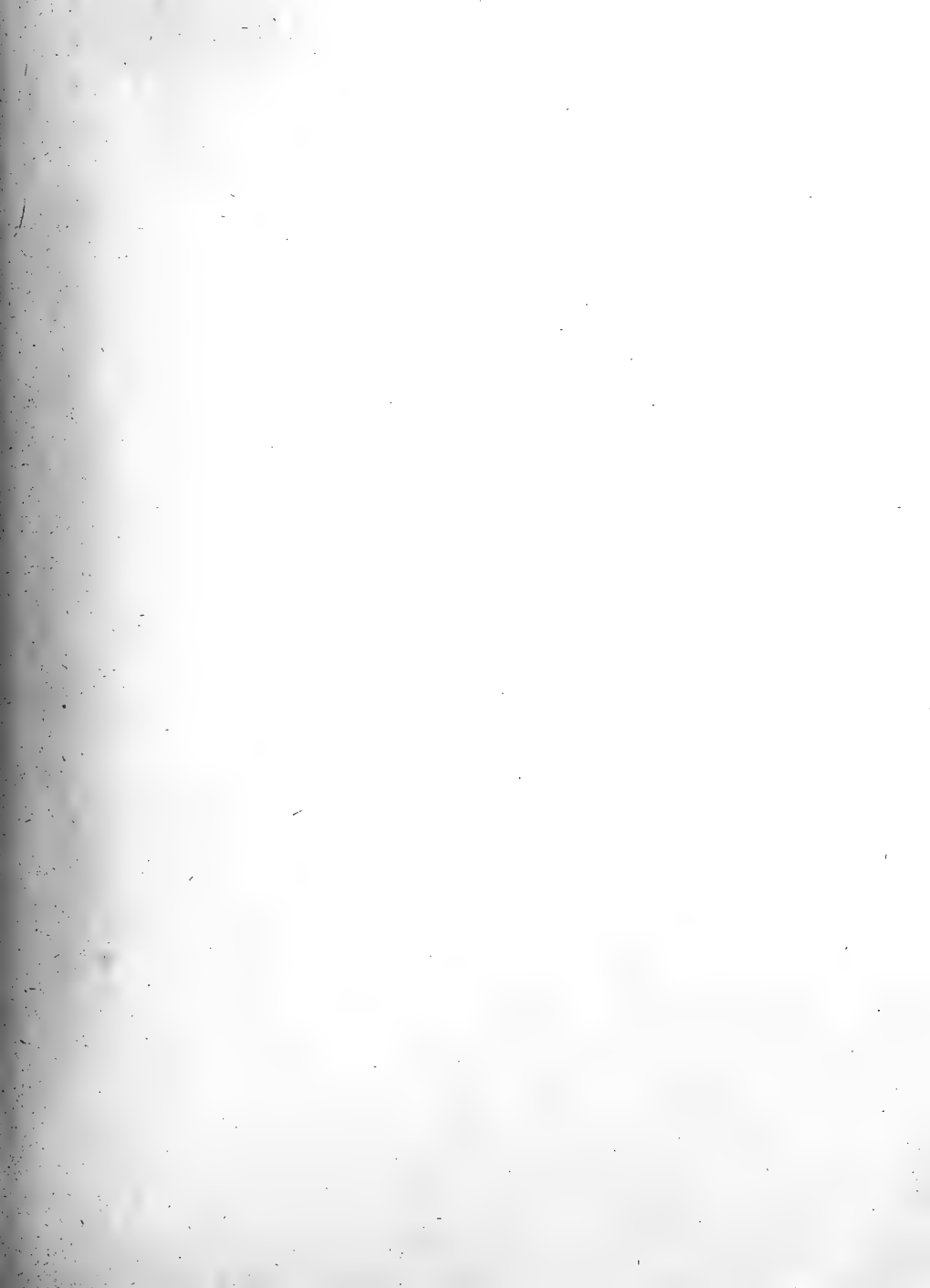
ALA.	Horn fly	Subterranean termite	Rice weevil	Corn earworm	Screw-worm	House fly	Angoumois grain moth	Mexican bean beetle	Fall House fly	Horn fly
ARIZ.	Lycophotus hesperus	Bollworms	Spotted alfalfa aphid	Cotton leaf perforator	Western flowerthrips	Cabbage looper	Cabbage looper	Beet armyworm	House fly	Knappa beetle
ARK.	Horn fly	Termites	Boll weevil	Bollworm	Aphids	Fall armyworm	Mosquitoes	Stored-grain insects	Spider mites	Cutworms
CALIF.	Corn earworm	Spotted alfalfa aphid	Lycus bugs	Peach twig borer	California red scale	Loopers	Grass-hoppers	Codling moth	San Jose scale	Citrus red mite
COLO.	Potato psyllid	Cutworms	Grass-hoppers	Loopers	Six-spotted leafhopper	Aphids	Corn earworm	Fall armyworm	Mexican bean beetle	Root maggots
CONN.	Termites	Aphids (green others)	Gypsy moth	Mites	Ants	Mosquitoes	Files	Japanese beetle	Smaller European elm bark beetle	Apple maggot
DEL.	Corn earworm	Spider mites	Colorado potato beetle	Cabbage looper	European borer	Japanese beetle	Smaller European elm bark beetle	Alfalfa weevil	Imported bagworm	Cab-Bagworm
FLA.	Chinch bug	House fly	Cockroaches	American dog tick	Pavement ant	Mosquitoes	Boxelder bug	Clover mite	Millipedes	Black widow spider
GA.	Boll weevil	Hollworm	Black turpentine beetle	Rice weevil	Peach borer	Green peach aphids	Spider mites	Tobacco budworm	Fall armyworm	Cabbage looper
IDAHO	Alfalfa weevil	Onion maggot	Pea aphid	Two-spotted spider mite	Beet leafhopper	European Mosquitoes	Grasshoppers	Clover weevils	Poultry Lygus bugs	Fleas and ticks
ILL.	European corn borer	Wireworms	Potato leafhopper	Black cutworm	Meadow spittlebug	Black flies	Termites	House flies	Grasshoppers	Cattle grubs
IND.	Meadow spittlebug	House fly	Potato leafhopper	Stable flies	Termites	European Mosquitoes	Corn borer	German cockroaches	European Horn fly	Cutworms
KAN.	Grasshoppers	Fall armyworm	Termites	Biting flies	Garden weevil	European Horn fly	Chinch bug	Stored-grain insects	Spotted alfalfa aphid	False fireworms
LA.	Bollworm	Boll weevil	Sugarcane borer	Rice weevil	Armyworm	Sweetpotato weevil	House fly	Southern & fall armyworms	Three-cornered alfalfa hopper	Green stink aphid
	Salt-marsh mosquito	Horn fly	Horse flies	Imported fire ant	Cockroach	German fire ant	Cockroach	Two-spotted spider mite	Codling moth	Webbing Branch beetle

Some of the More Important Pests for 1957 (Continued)

OKLA.	Corn earworm Cattle grubs Aphids	Grasshoppers armyworm Termites Garden symplyrids	Fall Termites Earwigs	Variegated cutworm House fly W. cherry fruit fly House flies	Harvester ant Dermeitids Coding moth Termites	Webworms Horse flies Pear psylla Carpet beetles	Armyworm Screw-worm Onion maggot Cockroaches	Leathoppers Cockroaches Hessian fly Sheep ked	Red-necked ticks Balsam woolly aphid Northern Cattle lice	Pecan nut casebearer Mosquitoes Spruce
ORE.	Cattle grubs	Mosquitoes	Earwigs	House flies	Termites	House flies	Cockroaches	Sheep ked	Cattle lice	
PA.	Meadow spittlebug House fly	Potato leathopper Horn fly	Alfalfa weevil Carpet beetle	Seed-corn maggot Powder post beetle	European corn borer Termites	Two-spotted spider mite Cockroaches	Potato flea beetle Cattle lice	Japanese miner Tabanids	Periodical cicada Broad XIV Mosquitoes	
R. I.	Stalk borer	Striped cu- cumber beetle House fly	European corn borer Mosquitoes	Potato flea beetle Old house borer	Apple maggot E. subter vermite	Spinach leaf miner Black car- penter ant	Pine leaf miner Grain beetle Stored-grain pests	Birch leaf miner Black car- pet beetle Spider mites	Cooley spruce Oak leaf miners European Cockroaches	
S. C.	Boll weevil	Larger corn- stalk borer Grasshoppers	Corn earworm Six-spotted leafhopper	Soybean caterpillar Caterpillars	Velvetbean caterp. et al.	Velvetbean termites	Velvetbean caterpillar pests	Borer Cattle lice	Screw-worm	
S. D.	European Mosquitoes	Grasshoppers House flies	Grasshoppers Horn fly	Stable flies	Potato leathoppers Cattle grubs	Stored-grain insects Cattle lice	Wireworms & Lygus bugs Stored-food pests	Corn earworm Structural Cockroaches	Sweetclover weevil Cockroaches	
TENN.	Boll weevil	Fall armyworm	Corn earworm	Tobacco worm	Stored-grains insects	Stored-grains insects	Sorghum webworm	House fly	Meadow spittlebug Stored-grain insects	
TEXAS	Cabbage loopers	Cotton leafworms	Cotton earworm flea-hoppers	Bollworm Caterpillars	Cutworms	Corn earworm	Corn earworm	Armyworm	Leafworm lice	
/	Screw-worm	Cockroaches	House flies	Cattle grubs	Termites	Termites	Termites	House fly	stink bug	
UTAH	Grasshoppers Cattle lice	Lygus bugs Mosquitoes	Pea aphid House fly	Spider mites Cattle lice	Alfalfa weevil Cattle grubs	Alfalfa weevil Cattle grubs	Triophyid Stored-food pests	Corn earworm Sheep ked Cockroaches	Spotted al- pha aphid Stored-grain European Horn fly	Army worm Horn fly
VT.	Grasshoppers Mosquitoes	Sweetclover Red mite	European Red mite	Apple maggot Sawfly	Cyclamen scale lice	Grubs	Two-spotted spider mite Curculio Subterranean termites	Gypsy moth Pine leaf aphid Red-banded caterpillar leaf roller Mites and ticks	Maple leaf cater Gast weevils Clothes moth	Red terpen- tine beetle European borer powder post beetles
VA.	Corn earworm	Alfalfa weevil	Fall armyworm	House flies	Scale lice	Scale lice	Subterranean termites	Velvetbean caterpillar Mites	European Horn fly	
WASH.	Onion maggot	Pear psylla	Beet leafhopper	Lygus bugs	Carrot rust fly	Carrot rust fly	Green peach aphid	2-spotted Carson Flycatcher Red mite	Balsam weevil European Aphid	
W. VA.	Alfalfa weevil	European corn borer	Corn earworm	Japanese beetle	Potato leathopper	Potato leathopper	Red-banded leaf roller	Green mite symphylid Caterpillar	pea aphid European shoot moth	Alfalfa Aphid Cockroaches
House fly	Cattle grub	Horn fly	Horn fly	Sheep ked	Dog tick	Dog tick	Leaf	Termites	ant-grain weevils	Cockroaches
WIS.	Potato leathopper Mosquitoes	Jack-pine House fly	Sm. Kur- elm Cattle lice	European corn borer Stable fly	White-pine weevil	White-pine weevil	Codling moth	Six-spotted White fly	Plant bugs	Onion Lake maggot mites
WYO.	Grasshoppers Cattle grubs	Alfalfa weevil Cattle lice	Alfalfa psyllid Horn fly	Pea aphid Mosquitoes	Alfalfa se- ed chalcid Sheep ked	Alfalfa se- ed chalcid Sheep ked	Beet House fly	Army cutworm Rocky Mt. wood tick	Lygus bugs Tuber flea beetle Horse bots	Wireworms Chicken lice

Some of the More Important Pests for 1957 (Continued)

ME.	Spruce budworm E. subter. termites weevil American dog tick leaf rollers Carpet beetles	Birch leaf miner Black flies Armyworm grain moth Pavement ant European spruce sawfly Box-elder	Potato leaf aphid Clover Armyworm moth Biting ant Wireworms fruit moth Powder-post	Buckthorn European earwig Corn earworm Cattle lice Codling moth House flies	Codling moth Black car-pet beetle Flea aphid Cockroaches Mites Cockroaches Ants	Apple Webbing clothes moth Green peach bug Cockroaches Seed-corn maggot Ants	European red mites Biting beetles potato spider mites Salt-marsh Termites Wife grubs Mosquitoes	Cutworms Larder Cereal pests	European corn borer
MD.	Alfalfa weevil American dog tick leaf rollers Carpet beetles	Armyworm Biting ant Wireworms Clover beetles	Codling moth Carpet beetle lice Codling moth House flies	Corn earworm Cattle lice lice Codling moth House flies	Codling moth Black car-pet beetle Flea aphid Cockroaches Mites Cockroaches Ants	House fly Wife grubs Mosquitoes	European corn borer	Cereal pests	
MICH.	Leaf rollers Carpet beetles	European spruce sawfly Box-elder	fruit moth Powder-post	House flies	Cockroaches	Ants	European corn borer	Cereal pests	
MINN.	Six-spotted leafhopper Mosquitoes	European spruce sawfly Clover beetles	Green cloverworm Clover mites	Grasshoppers Wood ticks	Jack-pine budworm Box-elder bug Mexican termite potato weevil leafhopper Mosquitoes	Introduced pine sawfly Black flies powder-post Vegetable fire ant Chinch bug	Soil insects Sawfly Wood roach So. green stink bug shuckworm	SweetGlover weevil Bird mites pecan shuckworm	
MISS.	Bollworm European corn borer Termites	Armyworm Fall armyworm Cockroaches	Southern armyworm Cutworms Ticks	House flies	Imported bean beetle potato weevil leafhopper Mosquitoes	Carpet beetles Lygus bugs	powder-post beetles Mites	Clothes moths Blister beetles Wood ticks Termites	
MO.	European corn borer Termites	Armyworm Cockroaches	Corn earworm Horn flies	House flies	leafhopper Mosquitoes	Carpet beetles Lygus bugs	powder-post beetles Mites	Clothes moths Blister beetles Wood ticks Termites	
MONT.	Grasshoppers Mosquitoes	Alfalfa Cattle grubs	Wireworms Horn flies	Aphids Dermestids	Spruce budworm Stored-grain insects	House flies	Cloves beetles	Silverfish Cherry fruit fly Termites	
NEB.	Grasshoppers Mosquitoes	Corn borers Stable fly Horse fly alfalfa weevil	Corn earworm Termites Lygus bugs	Corn rootworm Cattle grubs Spider mites	potato leafhopper Cattle lice Harvester ant	Webworms Horn fly Cockroaches Elm leaf & cotton bollworm	Green cloverworm Cockroaches Grasshoppers Clover mite beetle	Stored-grain alfalfa pests weevil Cattle mange Mormon cricket	
NEW.	Alfalfa weevil	Spotted alfalfa	Lygus bugs	Spider mites	Harvester ant	Corn earworm	Elm leaf Mormon beetle	Termites	
N. H.	Two-spotted spider mite weevil	Cattle grubs Apple curculio Two-spotted spider mite No. house mosquito	Horn fly Red-banded leaf roller earworm termite	Cattle lice Elm leaf beetle European corn borer German cockroach Southwestern aphids pine beetle House flies	Stable fly Cutworms Plum curculio pavement pet beetle Aphids	Ticks European corn borer Cabbage looper Black car-pet beetle Cotton leafworms	Sheep ked House fly Meadow E. field spittlebug Saw-toothed Chigger Cattle mite borer lopper	Gnats Mosquitoes	
N. J.	Alfalfa weevil	Two-spotted spider mite No. house mosquito	Corn earworm termite	European corn borer German cockroach Southwestern aphids pine beetle House flies	Plum curculio pavement pet beetle Aphids	Corn borer Cabbage looper Black car-pet beetle Cotton leafworms	Elm bark beetle Stable fly Grasshoppers Stored-grain pests	Meadow E. field spittlebug Saw-toothed Chigger Cattle mite borer lopper	
N. M.	Heliothis zea Horn fly	Spider mites Screw-worm	Lygus bugs House flies	Southwestern aphids pine beetle House flies	Codling moth Aphids Cattle lice	leafworms	Grasshoppers Stored-grain pests	Corn lopper	
N. Y.	Spinach leaf miner Cluster fly	Six-spotted leafhopper European earwig S. corn rootworm E. subter. termite	Red-banded leaf roller leaf roller Ants Cattle lice	Fruit tree beetle E. subter. termite Mexican bean beetle Stable fly	Mexican bean beetle aphid Cattle grub Rice Southern pine beetle Stable fly	Cabbage aphid Cattle grub Southern pine beetle Horn fly	Meadow spittlebug Clover mite Tobacco budworm Dog flea Gnats	Plum curculio Flour beetles Two-spotted spider mite Screw-worm	
N. C.	Bollworm House fly	S. corn rootworm E. subter. termite	Tohacco hornworm German cockroach	Mexican termite Chiggers	Rice Southern pine beetle Stable fly	Horn fly	Cigarette beetle Dog flea Gnats	Two-spotted spider mite Screw-worm	
N. D.	Grasshoppers Horn fly	Six-spotted leafhopper House fly	Wheat stem termite Mosquitoes	European wireworms Cattle lice	Potato leafhopper Stable fly	Potato flea beetle Northern fowl mite	Sugar-beet root maggot Sheep ked Hog mange	SweetClover weevil Dermestids	
OHIO	Potato leafhopper Termites	Meadow spittlebug Carpet beetles	Lesser clover leaf weevil House flies	European corn borer Cattle grubs	Corn earworm Cockroaches	Codling moth Stable and horse files	Plum curculio Chiggers	Apple maggot Fleas	





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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS heavy in east central Colorado and several areas of north central and western Kansas. (p. 473). EUROPEAN CORN BORER moth flight increasing in Iowa. (p. 474). Initial egg count of CORN EARWORM highest in three years in North Carolina. (p. 474). ARMYWORM outbreaks expected in some areas of Virginia. (p. 474).

CHINCH BUG causing some damage in Nebraska areas and may be threat to row-crops in Kansas. (p. 475). SAY STINK BUG outbreak in Utah worst since 1952. (p. 476). ALFALFA WEEVIL causing moderate to heavy damage in several States, and control begun in some areas. (p. 477).

MEADOW SPITTLEBUG building up statewide in West Virginia. (p. 478). POTATO LEAFHOPPER on alfalfa in several mid-western States. (p. 478). SPOTTED ALFALFA APHID building up in northern New Mexico. (p. 493). VARIEGATED CUTWORM adult numbers larger than normal in light traps in Oregon, numerous in southern Illinois and central Kansas. (p. 479).

A LOOPER causing defoliation to several species of trees on 2,300 acres in West Virginia. (p. 487).

Distribution of BAGWORM. (p. 489).

ADDITIONAL NOTES. (p. 493).

CORRECTIONS. (p. 495).

INSECTS not known to occur in the United States. (p. 497).

WEATHER BUREAU 30-DAY OUTLOOK

JUNE 1958

The Weather Bureau's 30-day outlook for June calls for temperatures to average below seasonal normals over the eastern quarter of the nation and in the Plateau States. Above normal averages are expected in the central portion from the Rockies to the Mississippi and also along the west coast. In regions not specified near normal temperatures are in prospect. Rainfall is expected to exceed or equal normal over the northern half of the nation. Subnormal amounts are indicated in the southern third of the country.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING JUNE 2

Below normal temperatures for the second consecutive week and recurring light to heavy showers with severe local storms was the weather pattern in the north-eastern quarter of the Nation as three cool Canadian air masses crossed the area in the course of the week. Freezing in many sections from the upper Mississippi Valley eastward caused some crop damage in northern Wisconsin. International Falls, Minnesota, recorded 29° on May 28, Greenville, Maine, 28° on May 27, and Grand Marais, Michigan, 25° on June 2. Weekend showers of 1 to over 2 inches fell in most of Iowa, the northern half of Illinois, the southern two-thirds of Michigan, central and southern Wisconsin, much of Missouri, and southeastern Minnesota. Prolonged dry conditions which had prevailed in most of these sections were relieved. The showers were too light for adequate relief in much of the Dakotas, eastern Montana, and parts of Minnesota. In Minnesota, two tornadoes caused minor damage in the Duluth area on May 26, and hail damage in the Eveleth-Virginia area on the same date was estimated at \$120,000. On May 31, a tornado and other storms were responsible for damage in south central and southwestern Wisconsin, and scattered wind damage occurred in central and northern Illinois and many parts of Iowa, with a tornado reported near Freeport, Illinois. On May 30, a tornado damaged a factory at Michigan City, Indiana. Except in the northeast quarter and east coast, the week was unseasonably warm. In most extreme southern areas daily maxima reached 90° or above, exceeding 100° on several days in the Far Southwest and at scattered stations on a day or two in the lower Great Plains. In the western Great Plains and Rocky Mountain States the week was 6° to over 10° warmer than normal, and although rainfall was mostly light, many rivers in the central Rockies continued high due to rapid snowmelt. The week was virtually rainless in southern California, and much of Arizona, Utah, and Nevada, and rain is needed for crops in the latter two states. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - WISCONSIN - Small numbers of Melanoplus bivittatus, M. bilituratus and M. viridipes nymphs on light soils, Adams County. Hatching of these species will be accelerated with warm weather, but M. femur-rubrum will lag. Egg development beginning in several counties. Heaviest nymphal counts in Taylor County with 2-5 first to fourth instars per sweep compared with one per 10 sweeps in Adams County. (Wis. Coop. Sur.). MINNESOTA - No hatching of economic species observed in 6 east central counties. (Minn. Ins. Rpt.). ILLINOIS - Nymphs averaged 4 per 100 sweeps in grass in eastern areas, zero in northeast. (Ill. Ins. Rpt.). NORTH DAKOTA - Generally very spotty. Threatening to severe, Stark, Golden Valley, Billings and McKenzie Counties. Some damage to small grain, spraying underway. Light in other western counties. (USDA, Burge, King). Nymphal survey in 6 eastern counties showed general non-economic level. Light to threatening in shelterbelts of a few locations with light soils, but spotted. Most populations first and second-instar nymphs of M. bivittatus and M. bilituratus in approximately equal numbers. Eggs in southwest mostly eye-spot and segmented stage. (N. D. Ins. Rpt.). SOUTH DAKOTA - M. bivittatus and M. differentialis nymphs range 1-3 per sweep in east central and central area alfalfa fields. (Hantsbarger). KANSAS - Nymphs becoming heavy in several areas. Survey in 7 north central counties showed highs of 400 per square yard, in scattered localized areas. M. bivittatus most abundant species with M. differentialis second. Counts of 100-200 per square yard quite common in scattered localized areas. (Bell). Highs of 200 per square yard in 9 central counties. Generally counts were 50 or less. Dominant species are M. bivittatus through fourth instar and M. differentialis, largely second instar with occasional third instar nymph. Range species not economic in this area. Reports from western areas indicate continued high marginal populations and considerable interest in control. (Matthew, Bell). OKLAHOMA - Nymphs generally 12-25 per square yard along roadsides, north central and northwestern areas. Abundant in alfalfa, some feeding in wheat in northwest. M. differentialis, M. bivittatus, M. bilituratus and Chortophaga sp. most abundant species. Range species average 4-12 per square yard, Woods, Harper, Ellis and Woodward Counties. (Coppock). TEXAS - Feeding on pastures, Robertson and Gonzales Counties. (Turney). UTAH - Hatches threatening crops in several counties. M. bivittatus is heaviest at Moab. (Knowlton). COLORADO - As high as 300 per square yard in eastern three-fourths of Cheyenne and northern half of Kiowa Counties. (ARS, Ext. Serv.). NEVADA - Trimerotropis pallidipennis moderate in Fallon area, Churchill County, with oviposition in many fields. (York, May 23). Heavy oviposition on dirt roads, barley fields and rangeland, Fish Lake Valley, Esmeralda County. (Bechtel, May 23). IDAHO - Hatching well advanced in many areas of Kootenai and Bonner Counties. First and second-instar nymphs locally abundant, particularly in grassland areas, upper Kootenai County. (Gittins). CALIFORNIA - Oedaleonotus enigma and Trimerotropis sp. heavy on rangeland in Cuyama Valley, Santa Barbara County. (Cal. Coop. Rpt.).

MORMON CRICKET (Anabrus simplex) - OREGON - Nymphs averaged 25 per square yard on 3,400 acres of rangeland near Blalock, Gilliam County. (Chinn, May 8).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Egg masses fairly common on small sweet corn plants, southern Sussex County. (MacCreary, Conrad). MINNESOTA - Pupation continuing in southern areas, with 40 percent in south central and southwestern districts. (Minn. Ins. Rpt.). WISCONSIN - Pupation 80 percent in one Sauk County light soil location, will begin soon on heavier southern county soils. It appears that first-brood borers may not be well synchronized with corn growth. (Wis. Coop. Sur.). ILLINOIS - Pupation in southern area 84 percent, south central 54, central 10-25, north central 10, and 3 in north. Emergence is 0.5 percent in south central area. (Ill. Ins. Rpt.).

IOWA - Pupation 90-100 percent in central third of State. Emergence determined by corn stalk dissection is 2-8 percent. Moth flight increasing. (Iowa Ins. Inf.). MISSOURI - Pupation complete in southern and central areas, approximately 85-90 in northern area. Emergence approximately 75 percent in extreme southeast area, 35 in central and 15 in northwest areas. Egg laying begun with 12-16 masses per 100 plants in southeast area and 5 in central area. Very few corn fields advanced enough to offer good laying conditions. (Peters, Munson, Jackson). SOUTH DAKOTA - Approximately 62 percent pupation in east central area. (Hantsbarger).

CORN EARWORM (*Heliothis zea*) - ARKANSAS - Four third-instar larvae taken in 30 sweeps in ladino clover, Poinsett County. (Boyer, May 24). GEORGIA - Light on corn, Tattnall County. (Johnson). ALABAMA - Increasing in unsprayed sweet corn, Baldwin County. Damage light, Washington and Choctaw Counties. (Grimes). NORTH CAROLINA - Up to one percent whorl infestation in field corn, Camden County. (Scott). Eggs average 9.7 per silk on sweet corn, Duplin County, which is highest initial count during past 3 years. (Farrier). LOUISIANA - Heavy on corn, St. Bernard, Caddo and Beauregard Parishes, up to 60 percent of stalks infested, some Caddo Parish fields. (Spink). TEXAS - This and other species damaging corn in Brazos River bottom (Randolph) and in Harding County (Rea).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MASSACHUSETTS - Not expected to be important this season. (Wheeler, May 24). MARYLAND - Adults light to moderate on field and sweet corn, Wicomico and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Light damage to sweet corn, southern Sussex County. (MacCreary, Conrad). OHIO - Unusually abundant on early sweet corn at Toledo. (Neiswander). ILLINOIS - Generally abundant on corn, western and southwestern areas, 2-4 per plant common in many fields. Plants growing away from damage. (Ill. Ins. Rpt.). MISSOURI - Counts of 1-8 per plant still common in most corn fields throughout State, but damage considerably decreased and most fields growing away from earlier injury. (Kyd, Thomas).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Adults increasing at Fairland light trap. No larvae seen or reported to May 28. (U. Md., Ent. Dept.). VIRGINIA - Medium in small grain, Accomack County. Some fields show good deal of damage. (Rogers). Few larvae in lodged spot of barley, Culpeper County. (Heltzel). Outbreaks expected in some areas. (Morris). NORTH CAROLINA - Fifty to 100 dead larvae per square foot in wheat field after insecticide applications, Perquimans County. (Jones). Few in Bertie County, spotted and loss of 4.5 acres of corn, Camden County, and 10 percent loss to 10-acre oat field and destruction of 1.5 acres of corn, Pasquotank County. (Scott). ILLINOIS - In west southwest wheat and barley, averaged 6-30 per linear foot in luxuriant growth, 0-6 in thin stands. (Ill. Ins. Rpt.). IOWA - Few in oats, Adair, Dallas and Madison Counties. (Iowa Ins. Inf.). MISSOURI - Problem in extreme southeast area largely over with occasional field of wheat or rank pasture grasses averaging 1-4 nearly full-grown larvae per square foot. Scattered fields of barley, wheat and fescue with 2-12 small larvae per square foot in central area. Parasitism becoming heavy in all areas. (Kyd, Thomas). ARKANSAS - Larvae 15 per square foot in well fertilized oats, 4 in fertilized wheat, about one-third nearing pupation. Small amount of grain being cut off in oats. Larvae one per square foot in short, apparently unfertilized oats, western Poinsett County. None found in oats, Van Buren and Searcy Counties, averaged one larva per square foot in an oats-red clover mixture, Boone County. (Boyer, Dowell, May 24). NEBRASKA - Larvae appearing in southeast wheat fields, averaging 4 per 10 sweeps in rank growth areas. (Andersen). KANSAS - Moderate, up to 6 per square foot in barley and wheat where lodged plants occur. Moderate to heavy moth flights continue. (Matthew). OKLAHOMA - Mid to late-instar larvae light in small grains, north central and northwestern counties. Light to very light feeding in heads, Alfalfa and Woods Counties,

restricted largely to stems and leaves in other areas. Populations being reduced, crops about ready for harvest. (Coppock).

A BILLBUG (Calendra sp.) - NORTH CAROLINA - Some damage in all untreated corn fields examined, with up to 10 percent of plants infested in northeastern counties. Very light in treated fields, if present. (Scott).

BROWN WHEAT MITE (Petrobia latens) - UTAH - Threatening several hundred acres of dryland fall wheat, Juab County. (Knowlton).

CHINCH BUG (Blissus leucopterus) - NEBRASKA - Adults causing yellowing to spring barley in southwest Gage and southeast Jefferson Counties. Some control applied. Averaged 12 per square foot of ground. (Andersen). KANSAS - Adults in some corn and sorghum fields in localized central areas. Numbers in some thin stands of barley and wheat indicate threat to row-crops planted in adjacent fields. Up to 12 adults per linear foot in some small grain fields. (Matthew, Bell). MISSOURI - Nymphs heavy in late-planted small grain, southwest and west central areas. Damage to small corn and grain sorghums in fields adjacent to small grains. Controls applied in these areas. (Kyd, Thomas).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Heavy on grain sorghum, Burtleson, Brazos and Robertson Counties. (Randolph, Turney).

CORN ROOT WEBWORM (Crambus caliginosellus) - VIRGINIA - Damage to corn very light, Pittsylvania County. (Dominick).

CUTWORMS - Illinois - Percent damage to corn ranges 0-18 in northeast, 0-20 in central, 0-10 in west southwest and 0-1 in southeast areas. (Ill. Ins. Rpt.). WISCONSIN - Damaging sprouting corn kernels and small plants. (Wis. Coop. Sur.). MISSOURI - Few widely scattered fields of small corn in extreme southeast area showing light damage, with dingy cutworm and yellow-striped army worm main species. Some armyworm and variegated cutworm injury. No damage reported from other corn growing areas of State. (Kyd, Thomas).

A CUTWORM (Heliothis phloxiphaga) - OREGON - None found in survey of Sherman County wheat fields May 17. Fields checked were in general area of heavy infestation during 1957. (Every).

ENGLISH GRAIN APHID (Macrosiphum granarium) - WISCONSIN - Heavy spring migration at Madison. Averaged one winged form per 3 feet of row in small grains. (Wis. Coop. Rpt.). MISSOURI - Averaged 4-15 per head in wheat in many areas. Wheat too advanced in southern areas to be damaged but damage could occur in other areas if populations increase to any extent. ARKANSAS - About 150 per 10 sweeps in 2 northeast and 3 northwest counties. Number appeared rather high compared with other parts of State recently. Lady beetles very active, averaging 12 adults and 16 larvae per 10 sweeps. (Boyer, Dowell, May 24). ILLINOIS - Average per 100 sweeps on oats is 20-400 in northeast and 30-170 in east, and on barley, wheat and rye, 60-260. (Ill. Ins. Rpt.). SOUTH DAKOTA - Up to 40 per 10 sweeps noted in winter wheat in central region. (Hantsbarger). NEBRASKA - Moderate in winter wheat, oats and in spring and winter barley in southeast. Averaged 7 per head in a 20-head sample count. (Andersen). OKLAHOMA - Light, 1-13 per head, in wheat with 8-50 percent of heads infested, north central and northwestern counties. Lighter generally, extreme northwest counties. (Coppock). OREGON - Light to moderate in wheat near Milton-Freewater, with 5-10 percent of plants in some fields infested, May 15. Many winged forms, few stem mothers, nymphs rare. (Brown). Light in 15-acre wheat planting near Pratum. (Crowell, May 25). Increasing in Umatilla County wheat fields. Not heavy in wheat, Gilliam and Sherman Counties. (Every, May 17).

FALSE CHINCH BUG (*Nysius ericae*) - IDAHO - Heavy in weed patches at Kimberly, with greatest abundance on cheatgrass and flixweed. If increase continues, infestations may develop on crops such as beans as present weed hosts dry up. (T.F.F.S.).

GREENBUG (*Toxoptera graminum*) - NEBRASKA - Light in southeast winter wheat and oats, with average of 30 per 10 sweeps. (Andersen).

HESSIAN FLY (*Phytophaga destructor*) - OREGON - Flaxseed stage on winter wheat May 21. Apparently not heavy in fields checked, Polk, Yamhill and Marion Counties. No infestation in spring barley or wheat in these counties as of May 21. (Every, Dickason).

A LEAFHOPPER (*Dikraneura carneola*) - UTAH - Damagingly abundant in wheat, Nephi-Levan area, Juab County. (Knowlton).

OMNIVOROUS LEAF TIER (*Cnephasia longana*) - OREGON - Caused light injury to 15-acre wheat planting near Pratum, Marion County. (Crowell, May 25).

RICE STINK BUG (*Oebalus pugnax*) - ARKANSAS - Averaged 2-3 per 10 sweeps in oats, Craighead and Poinsett Counties. (Boyer, Dowell, May 24).

SAY STINK BUG (*Chlorochroa sayi*) - UTAH - Large numbers in several hundred acres of fall wheat, Juab County, severe on 1,000 acres of wheat and barley in Davis-Weber area and extremely numerous on weedy margins of wheat in Diamond Mountain area, Uintah County. Serious in Millard, Washington, Iron and Garfield Counties. Spray applied to 1,000 acres of grain in Hurricane area, Washington County, and 450 acres sprayed in western Millard County. This is worst outbreak since 1952. (Knowlton). ARIZONA - Heavy in barley and oat fields, Graham and Pinal Counties. (Bottger, Kauffman).

SEED-CORN MAGGOT (*Hylemya cilicrura*) - MICHIGAN - Adults numerous at Mason and Charlotte. (Hutson, May 22). COLORADO - Bait trap collections indicate high adult populations in Weld, Montrose and Delta Counties. (Exp. Sta.).

A SOD WEBWORM - OREGON - Adults emerged from chewings fescue May 23 and observed in all 5 fields checked, Clackamas County. (Dickason). IOWA - In first-year corn, Story and Union Counties. Warranted spraying. Averaged one per 10 hills in early planted corn, Dallas County. (Iowa Ins. Inf.).

SOUTHWESTERN CORN BORER (*Zea diatraea grandiosella*) - LOUISIANA - Light in some corn fields, Caddo Parish. (Spink).

SUGARCANE BEETLE (*Euetheola rugiceps*) - ALABAMA - Completely destroyed several acres of young corn. (Lemons, May 24).

SUGARCANE BORER (*Diatraea saccharalis*) - LOUISIANA - In 1-25 percent of corn plants in many fields, Avoyelles Parish. Infestations in sugarcane averaged 11 percent in 10 fields in 9 parishes. Pupae found in Lafourche, St. Charles and Terrebonne Parishes. (Spink).

WIREWORMS - IDAHO - Attacking alfalfa crown buds in a Canyon County field. Earlier injured wheat fields outgrowing spring attack, same county. In Homedale area 18 acres of corn required replanting following injury. (Portman). ILLINOIS - Damage to corn ranges 0-1.5 percent in northeast, 0-1 in east and 0-20 in central areas. (Ill. Ins. Rpt.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - DELAWARE - Small larvae in sweet corn, southern Sussex County. (MacCreary, Conrad).

ALFALFA CATERPILLAR (*Colias philodice eurytheme*) - NEBRASKA - In all southeast alfalfa fields surveyed, averaging 10 per 10 sweeps. (Andersen). IOWA - Small numbers in southern area legumes. (Iowa Ins. Inf.).

ALFALFA WEEVIL (*Hypera postica*) - DELAWARE - Heavy pupation, Kent County. Damage to new shoots of second cutting where first crop was removed to avoid injury, Sussex County. (MacCreary, Conrad). MARYLAND - Larvae on alfalfa averaged over 100 per sweep at Waterloo. Damage moderate to heavy to unsprayed alfalfa. First-generation adults numerous on second-growth alfalfa at Snow Hill. Larvae moderate on vetch at Upper Marlboro. (U. Md., Ent. Dept.). PENNSYLVANIA - Eggs and pupae in alfalfa in south central area. (Pepper). VIRGINIA - Medium on stubble of second-cutting alfalfa, 75 percent of tops cut in some fields and young shoots being cut by larvae, Culpeper County. (Heltzel). Larval reinfestation medium on second-growth alfalfa, King George County, with some fields sprayed and others will need spraying. (Hall). SOUTH CAROLINA - Larvae on alfalfa, Lexington County. New county record. Determined by W. H. Anderson. (Nettles et al., April 15). GEORGIA - On second-growth alfalfa at 75 per 100 sweeps in Oglethorpe County, 15 in Wilkes County and 10 in McDuffie County. (Johnson). Light on Spalding County alfalfa. (Tippins, May 12). IDAHO - Mature larvae attacking second-crop alfalfa, Ada County. (Portman). Larvae occasioning considerable damage to untreated and late-treated fields, Twin Falls area. (T.F.F.S.). Up to one adult per sweep and 15-20 larvae per sweep, many untreated alfalfa fields, Canyon County. (Waters). NEVADA - Moderate to heavy damage in untreated fields or where treatment was delayed. Averaged 30 larvae per sweep in untreated fields in Reno area, Washoe County. (Gardella, Lauderdale, May 23). Moderate damage where early spraying was omitted, Mason and Smith Valleys, Lyon County. (Batchelder, May 23). Damage moderate in Lovelock area, Pershing County, (Lauderdale, May 23), and moderate to heavy in Schurz area, Mineral County (Bechtel, May 23). UTAH - Damage appearing in many counties. Larval control begun in early areas. (Knowlton). COLORADO - Averaged 15 adults and 100 larvae per 100 sweeps, Montezuma and La Plata Counties. Serious problem in Otero, Crowley and Pueblo Counties. (Exp. Sta.). As high as 400 adults and 200 larvae per 100 sweeps in Boulder County. (Ext. Serv.).

ASH-GRAY BLISTER BEETLE (*Epicauta fabricii*) - SOUTH DAKOTA - Averaged one per 50 sweeps in central and east central alfalfa fields. (Hantsbarger).

BEET ARMYWORM (*Laphygma exigua*) - NEVADA - Damaging seedling alfalfa in Pahrump Valley, Nye County. (Zoller, May 23).

A CLOVER BUD CATERPILLAR (*Grapholitha conversana*) - IDAHO - Reported in a small seeded clover field north of Grangeville, Idaho County. Survey underway to determine degree and extent of infestation. (Cook).

CLOVER LEAF WEEVIL (*Hypera punctata*) - ILLINOIS - Averaged 4.7 larvae and 5.7 cocoons per square foot in northeastern alfalfa and clover. (Ill. Ins. Rpt.).

CLOVER SEED CHALCID (*Bruchophagus gibbus*) - IDAHO - Averaging 5-15 per sweep in red clover, northern Canyon County. Less than one percent bloom. (Waters).

FALL ARMYWORM (*Laphygma frugiperda*) - OKLAHOMA - Early instar larvae appearing in northwestern area alfalfa. (Coppock).

GREEN CLOVERWORM (*Plathypena scabra*) - ALABAMA - Moderate to heavy in white clover, Autauga County. (Grimes). OKLAHOMA - Three to eight larvae per 10 sweeps in north central alfalfa. (Coppock). IOWA - Small numbers in legumes in southern areas. (Iowa Ins. Inf.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Increasing rapidly in alfalfa, Graham and Pinal Counties, 10-12 per sweep with 200 acres treated in Pinal County. (Mendenhall, May 21). NEBRASKA - *L. lineolaris* adults and nymphs in most southeast fields, averaging 68 per 100 sweeps. (Andersen). UTAH - Nymphs appearing in alfalfa, some early bud injury. (Knowlton). MINNESOTA - *L. lineolaris* ranged 0-8 per 10 sweeps in south central and southwestern districts. (Minn. Ins. Rpt.). OKLAHOMA - Abundant some north central and northwest alfalfa fields. Counts of 30-40 per 10 sweeps made in Garfield, Harper and Alfalfa Counties. (Coppock). SOUTH DAKOTA - Nymphs and adults averaged approximately one per sweep in alfalfa throughout central and east central regions. (Hantsbarger). IDAHO - *L. elisus* and *L. hesperus* nymphs in alfalfa and red clover, Canyon County. (Gittins).

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - WEST VIRGINIA - Building up noticeably in red clover and alfalfa statewide. (W. Va. Ins. Sur.). MARYLAND - Adults common in hay fields on Eastern Shore. Damage to clover and alfalfa in central and southern sections about over. (U. Md., Ent. Dept.). DELAWARE - Late-instar nymphs and adults on red clover, northern Kent County. (MacCreary, Conrad). VIRGINIA - Nymphs and adults, probably this species, heavy on alfalfa and grass which normally would have been cut. (Price).

PEA APHID (*Macrosiphum pisi*) - RHODE ISLAND - Beginning to build up on alfalfa. (Kerr). MARYLAND - Heavy on vetch at Upper Marlboro. (U. Md., Ent. Dept.). WISCONSIN - Ranged 0-25 per sweep in alfalfa in 18 counties. Apparently cool weather has kept populations at a standstill. (Wis. Coop. Sur.). ILLINOIS - Average per 100 sweeps in legumes was 1,182 in northeast and 1,364 in eastern areas. (Ill. Ins. Rpt.). IOWA - Averaged 10-20 per sweep in legumes in southern areas. (Iowa Ins. Inf.). MINNESOTA - Counts on south central and southwestern alfalfa were 20-150 per 10 sweeps. (Minn. Ins. Rpt.). NORTH DAKOTA - Average 30 per 5 sweeps in southeastern alfalfa. (N.D. Ins. Rpt.). SOUTH DAKOTA - Have built up to 200 per 10 sweeps in east central and 80 per 10 sweeps in central areas. (Hantsbarger). NEBRASKA - Moderate in southeast portion of State, averaging 88 per sweep. Fungus in most fields surveyed. (Andersen). KANSAS - Moderate to heavy in 6 central counties, up to 200 per sweep. (Matthew, Bell). OKLAHOMA - Common in north central and northwestern areas, reduced in harvested fields. (Coppock). TEXAS - In alfalfa, Burleson and Brazos Counties. (Burke). UTAH - Moderately numerous in some Utah, Davis and Salt Lake County alfalfa fields. (Knowlton). IDAHO - In Canyon County alfalfa fields, 10-50 per sweep. (Waters). OREGON - Continues to increase in vetch, Polk County. Rapidly decreased at this period in 1957. (Dickason). Generally increasing in Willamette Valley, (Capizzi). Building up at Ontario and Milton-Freewater. (Stephen).

PLANT BUGS - MINNESOTA - *Adelphocoris lineolatus* and *A. rapidus* hatching in large numbers in alfalfa and red clover, averaging 10-40 per 10 sweeps in south central and southwestern districts. (Minn. Ins. Rpt.). IDAHO - *Chlorochroa* sp. adults common on roadside weeds (5-6 per sweep) and desert annuals, Owyhee County. (Barr). Above normal in Twin Falls area, adults appearing earlier than usual, probably due to warm weather. Reported in wheat, sugarbeet and safflower near Twin Falls, with some damage to wheat fields. (T.F.F.S.). ILLINOIS - Averaged 520 nymphs per 100 sweeps in eastern legumes and 78 in northeast. (Ill. Ins. Rpt.). WISCONSIN - Nymphs of *A. lineolatus* and *A. rapidus* in alfalfa. (Wis. Coop. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - MINNESOTA - Averaged 1-3.5 per hundred sweeps on alfalfa, clover and caragana. (Minn. Ins. Rpt.). ILLINOIS - Averaged 0-50 per 100 sweeps in alfalfa and clover in northern areas and 50-200 in central areas. (Ill. Ins. Rpt.). WISCONSIN - Averaged 1-4 per 100 sweeps in southern area alfalfa. (Wis. Coop. Sur.). MISSOURI - Averaged 0.5-1 per sweep in alfalfa, extreme southeast area. (Kyd, Thomas).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - NORTH DAKOTA - One adult per 100 sweeps from sweetclover, May 13. Subsequent surveys on legumes and cereal grasses show 6 per 100 sweeps. (N. D. Ins. Rpt.). MINNESOTA - Continues much less abundant than in 1957, heavy migrations from the south not having occurred. Adults averaged 0-2 per 10 sweeps in south central and southwestern alfalfa and have increased up to 34 per 100 sweeps in St. Paul area. Nymphs nearing maturity, increases expected during coming week, but not expected to reach high level of 1957. (Minn. Ins. Rpt.). WISCONSIN - Averaged 1 per 150 sweeps in alfalfa and oats, Fond du Lac and Winnebago Counties, May 22-23. Numbers low in most southern counties. (Wis. Coop. Sur.).

A SPIDER MITE (Tetranychus sp.) - NEVADA - Averaged 10-15 per leaf on 7 acres of alfalfa in Yerington area, Lyon County. Treatment applied. (Batchelder, May 23).

SPITTLEBUGS - MASSACHUSETTS - Appearing in clover and alfalfa. (Wheeler, May 24). ILLINOIS - Nymphs per 100 stems averaged 139 in Boone, 85 in Kane and 211 in Jo Davies Counties. (Ill. Ins. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - COLORADO - None taken in recent surveys in La Plata and Montezuma Counties. (Exp. Sta.). MINNESOTA - None found in alfalfa fields examined in south central and southwestern districts. (Minn. Ins. Rpt.). NEVADA - Averaged 4-5 winged and wingless forms per sweep in Swingle Bench area west of Fallon, Churchill County. First infestations of 1958. (York, May 23). OKLAHOMA - Counts higher in northwest than elsewhere. Up to 100 per 10 sweeps in scattered alfalfa fields, Garfield, Alfalfa and Harper Counties, with up to 600 per 10 sweeps in one Harper County field. (Coppock). KANSAS - Remains low throughout State, with non-economic levels found as far north as Rice and Barton Counties. (Matthew).

SWEETCLOVER APHID (Therioaphis riehmii) - MINNESOTA - ¹ Only stem mothers and nymphs on sweetclover examined, Crookston County. Stem mothers still hatching. No winged females observed. (Minn. Ins. Rpt.).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - IDAHO - On all plants examined in Murphy Flat area, Owyhee County, with heavy mortality of plants along irrigation canals due to feeding injury. (Portman).

VARIEGATED CUTWORM (Peridroma margaritosa) - OREGON - Appearing in larger than normal numbers in light trap collections at Walla Walla and Salem from mid-May to date. (Cook, Goeden, May 26). OKLAHOMA - Present in alfalfa and other legumes throughout State. Run 10-15 mid and late-instar larvae per square foot in scattered fields, northwest and north central counties. Most fields lower. Damage light. (Coppock). ILLINOIS - Numerous in legume fields, southern half of State. (Ill. Ins. Rpt.). KANSAS - Heavy along central area field margins and in alfalfa. Up to 12 larvae per square foot in alfalfa fields and roadside embankments planted to alfalfa. Heaviest in Rice and Barton Counties. (Matthew, Bell). MISSOURI - Averaged 1-4 larvae per square foot in alfalfa and red clover in southeast area. Following first cutting, new-growth alfalfa being entirely destroyed in some fields. (Kyd, Thomas).

VETCH BRUCHID (Bruchus brachialis) - ARKANSAS - Averaged 6 per 10 sweeps in vetch field in Full bloom, Poinsett County. (Boyer, May 24). TEXAS - Still very active, with large numbers feeding in vetch, Kaufman County. (Randolph). OKLAHOMA - Average 6-10 per 10 sweeps from vetch and rye mixtures, Major County. (Coppock).

A WEBWORM (Loxostege sp.) - TEXAS - Feeding on alfalfa in Burleson County. (Randolph).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSOURI - Averaged 0.5-1 per linear foot of row of soybeans in extreme southeast area. (Kyd, Thomas).

MEXICAN BEAN BEETLE (Epilachna varivestris) - ALABAMA - Causing light to moderate damage to young soybeans, Baldwin County. Eggs and adults present. (Grimes).

RED-NECKED PEANUTWORM (Stegasta basqueella) - GEORGIA - Light to moderate on peanuts in several counties. (Johnson).

THRIPS - GEORGIA - Moderate to heavy on peanuts in several counties. (Johnson). ALABAMA - Light on peanuts in Coffee County. (Grimes). NORTH CAROLINA - Light on Bertie County peanuts. (Scott). MISSOURI - A species, probably Aeolothrips fasciatus, causing considerable silvering of leaves of small soybeans in extreme southeast area and averaging 1-7 per leaf. (Kyd, Thomas).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - UTAH - Control planned on 200 acres of cropland at Newton, Cache County. (Knowlton).

WHITE GRUBS (Phyllophaga spp.) - MICHIGAN - Adults becoming scarce. (Hutson, May 23).

YELLOW SUGARCANE APHID (Sipha flava) - LOUISIANA - Infestations ranged 0-12 percent in Lafourche, St. Charles and Terrebonne Parishes, with average of 2 percent of plants infested. (Spink).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - PENNSYLVANIA - Emerging rapidly on apple in south central area. (Pepper). NEW JERSEY - Emergence 80 percent in Burlington County, May 26. (Ins. Dis. Newsl.). DELAWARE - Approximately one-third of caged material in Kent County emerged by May 27. (MacCreary, Conrad). OHIO - Cold weather delaying emergence and activity. (Cutright). INDIANA - Eggs laid May 16 at Vincennes hatched May 25. Entries likely to increase about May 30. (Hamilton). Larvae entering apples at Orleans. (Marshall). OREGON - First emergence May 14. (Ellertson, Jones).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - PENNSYLVANIA - Some pupation, some newly hatched on apple in south central area. (Pepper). MASSACHUSETTS - Eggs difficult to find. (Wheeler, May 24). MICHIGAN - Eggs 50 to 75 percent hatched at Ionia and Grand Rapids. Egg masses common some orchards and scarce in others nearby. Hatching has been extremely drawn out. (Hutson, May 23). WISCONSIN - Most eggs hatched and larvae present in southern orchards. (Wis. Coop. Sur.).

OBLIQUE-BANDED LEAF ROLLER (*Archips rosaceana*) - OREGON - More abundant than usual in unsprayed or poorly sprayed apple trees in Corvallis. (Ritcher, May 26).

A LEAF ROLLER - MASSACHUSETTS - An apple leaf roller, perhaps *Anchylopera nubeculana*, more abundant than usual in some orchards. (Wheeler, May 24).

UNSPOTTED TENTIFORM LEAF MINER (*Callisto geminatella*) - IOWA - Appearing at Woodbine. (Iowa Ins. Inf.).

ROSY APPLE APHID (*Anuraphis roseus*) - MASSACHUSETTS - More abundant than in 1957. (Wheeler, May 24). DELAWARE - Winged migrants present on apple foliage in Kent and Sussex Counties. (MacCreary, Conrad). OHIO - Increasing rapidly, may be severe problem some orchards. (Cutright). INDIANA - Continue a problem several places at Vincennes. (Hamilton). Reproducing rapidly and causing considerable damage to apple trees at Orleans where not controlled. (Marshall). MICHIGAN - Generally scarce from Indiana State line to Muskegon-Bay City area. One orchard near Sodus with heavy infestation. (Hutson, May 23).

EUROPEAN FRUIT LECANIUM (*Lecanium corni*) - OHIO - Ninety-four percent of females mature and depositing eggs in Clyde area. No egg hatch to May 29. (Rings).

EUROPEAN RED MITE (*Panonychus ulmi*) - INDIANA - Populations most orchards at Vincennes very light; well controlled. (Hamilton). Developing slow at Orleans, though species of *Tetranychus* multiplying rapidly. (Marshall). OHIO - First hatching of summer eggs noted May 29 at Wooster. (Cutright).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - MISSOURI - Injuring pears in stock of one nursery. (Millikan). RHODE ISLAND - Heavy infestation on pear foliage at Exeter. (Howard, May 21).

PLUM CURCULIO (*Conotrachelus nenuphar*) - GEORGIA - Larval emergence from bushel of peach drops in commercial orchard at Fort Valley now totals 5,945. This is 99.1 percent infestation. New adults not yet begun to emerge from soil at Fort Valley, first expected first week of June. (Snapp, May 26). SOUTH CAROLINA - Light infestation on peaches in Edgefield County. (Moore). May be slight buildup in State. (Nettles). NORTH CAROLINA - Home orchards heavily infested in northeastern counties. (Scott). DELAWARE - First larvae found in peaches May 23 in Kent County. (MacCreary, Conrad). PENNSYLVANIA - Activity slow in south central area. (Pepper). OHIO - Populations increasing on peaches and plums in Wooster area. Oviposition activity increasing. (Rings). INDIANA - Populations in abandoned orchard at Vincennes about same as previous week; 109 adults jarred from 5 trees compared with 119 for previous week. (Hamilton, May 26). Probably past peak of activity at Orleans. (Marshall).

LOUISIANA - Infestations on plums heavy in Livingston and East Baton Rouge Parishes. (Spink).

WESTERN CHERRY FRUIT FLY (*Rhagoletis cingulata indifferens*) - OREGON - First emergence May 20 at Hood River and May 26 at Corvallis. (Eilertson, Jones).

BLACK CHERRY APHID (*Myzus cerasi*) - RHODE ISLAND - Infesting cherry at Smithfield. (Mathewson, May 24).

CATFACING INSECTS - UTAH - Moderately numerous in Utah and Davis County orchards. (Knowlton). OHIO - Plant bugs, *Neolygus* spp., still in fourth and fifth instars on natural hosts. Populations generally lower than in 1957. (Rings).

GREEN PEACH APHID (*Myzus persicae*) - IDAHO - Infesting 15-40 percent of leaves on several trees in Idaho Falls. Populations apparently far above those at same time in 1957 in area. (Bishop).

PEACH TREE BORER (*Anarsia lineatella*) - CALIFORNIA - Medium infestation of prune trees in Colusa area, Colusa County. (Cal. Coop. Rpt.).

LEAF-FOOTED BUGS (*Leptoglossus* spp.) - LOUISIANA - Heavily infesting plum orchards in Livingston and East Baton Rouge Parishes. (Spink).

A SHOT HOLE BORER (*Xyleborus saxeseni*) - CALIFORNIA - Medium infestation of pear trees at Walnut Grove, Sacramento County. (Cal. Coop. Rpt.).

A SAWFLY (*Megaxyela langstoni*) - GEORGIA - Moderate infestation of larvae on leaves of young pecan trees in Jasper and Spalding Counties. (Beckham, Apr. 30).

A PHYLLOXERA (*Phylloxera* sp.) - MISSISSIPPI - Damaging pecan leaves in Lauderdale County. (Hutchins).

A PECAN LEAF CURL MITE - MISSOURI - Causing considerable injury to foliage, especially terminal, of pecans in scattered groves over Dunklin and Pemiscot Counties. (Kyd, Thomas).

BLACK-MARGINED APHID (*Monellia costalis*) - OKLAHOMA - Heavy on pecans in Stillwater area, honeydew heavy. (Bieberdorf).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Light to heavy infestations on persimmons and pecan trees in Baldwin County. (Bolton, Berry, Seibels). LOUISIANA - Heavy emergence occurred in St. Mary Parish. (Spink).

FULLER ROSE BEETLE (*Pantomorus godmani*) - CALIFORNIA - Light infestation on orange trees at Escondido, San Diego County. (Cal. Coop. Rpt.).

GRAPE FLEA BEETLE (*Altica chalybea*) - NORTH CAROLINA - Light to moderate infestations in Richmond, Nash, Brunswick and Duplin Counties. Most varieties being attacked. (Scott, Farrier, Reid).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - MARYLAND - All stages moderate to heavy on untreated potatoes and tomatoes in Calvert, Talbot and Wicomico Counties. (U. Md., Ent. Dept.). VIRGINIA - Many egg masses and numerous newly hatched larvae present in Northampton and lower Accomack Counties. (Hofmaster). Adults medium on potatoes in Fluvanna County. (Smith). LOUISIANA - Moderate on potatoes in Grant Parish. (Spink). COLORADO - Twenty per 100 sweeps on matrimony vine in Larimer County. (Exp. Sta.). IDAHO - First infestations on potatoes in Paul area of Minidoka County on May 21. (Priest).

First noted in Burley area May 23. (Bodily). Adults present all fields in Canyon County and some egg laying occurred. (Portman).

FLEA BEETLES - RHODE ISLAND - Heavy infestation of *Epitrix cucumeris* on potatoes at Kingston. (Gardner). Infesting tomato foliage in field and in flats at Kingston. (Stoner). NEW JERSEY - Damaging tomatoes and feeding heavily on potatoes in central area. (Ins. Dis. Newsl.). DELAWARE - *E. cucumeris* common on potatoes in Kent and Sussex Counties. *Phyllotreta cruciferae* common on cabbage in western Kent County. (MacCreary, Conrad). VIRGINIA - Medium on potatoes and corn in Fluvanna County gardens. (Smith). MARYLAND - *E. cucumeris* light to moderate on potatoes on lower Eastern Shore. *E. hirtipennis* heavy on potatoes in Calvert County, light to moderate on tomatoes in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). WEST VIRGINIA - *E. cucumeris* heavy on potatoes in Randolph County. (W. Va. Ins. Sur.). UTAH - Damaging crops in northern areas. (Knowlton).

POTATO APHID (*Macrosiphum solanifolii*) - MARYLAND - Generally light to moderate on tomatoes on lower Eastern Shore. Few fields heavily infested. (U. Md., Ent. Dept.). DELAWARE - Generally present but not abundant on potatoes and tomatoes throughout State. (MacCreary, Conrad).

GREEN PEACH APHID (*Myzus persicae*) - FLORIDA - Ranging from 1-12 per leaf on 20 acres of peppers at LaCrosse, Alachua County, and 350 and up on 300 acres of potatoes at Hastings, St. Johns County. (Fla. Coop. Sur.).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - DELAWARE - Egg masses fairly common on potatoes in Sussex County. (MacCreary, Conrad). VIRGINIA - Moths common in potato fields around Exmore and Eastville, Northampton County. Egg masses observed but only few hatched. (Hofmaster). NORTH CAROLINA - Ten percent of potato plants infested in Tyrell County, with 1-3 second to fourth-instar larvae in midribs of lower leaves. (Jones). Also infesting potatoes in Perquimans, Camden, Pasquotank, Pamlico and Carteret Counties. (Jones, Scott, Nielson).

POTATO LEAFHOPPER (*Empoasca fabae*) - DELAWARE - Few adults noted on potatoes in southern Sussex County. (MacCreary, Conrad). MINNESOTA - Counts have averaged only 1 to 3.5 per 100 sweeps on alfalfa, clover and caragana to May 27. Damaging populations of nymphs can probably be expected to begin appearing on potatoes, beans and caragana about June 15 to 20. (Minn. Ins. Rpt.).

POTATO PSYLLID (*Paratrioza cockerelli*) - COLORADO - Adults averaged 150 per 100 sweeps on matrimony vine at Fort Collins, Larimer County, and 10 per 100 sweeps in La Plata County. First collected May 21 in Delta County. (Exp. Sta.). Very limited number at Grand Junction, Mesa County. (ARS).

BEE T ARMYWORM (*Laphygma exigua*) - CALIFORNIA - Heavy infestation on potatoes in Blythe area, Riverside County. (Cal. Coop. Rpt.).

TOMATO FRUITWORM (*Heliothis zea*) - GEORGIA - Light infestations in 6 counties. (Johnson). LOUISIANA - *H. zea* and *Protoparce* spp. infesting about 5 percent of tomato plants and fruits in several fields in St. Bernard Parish. (Spink).

HORNWORMS (*Protoparce* spp.) - GEORGIA - Light infestations on tomatoes in Tattnall and Coffee Counties. (Johnson). LOUISIANA - Infesting about 5 percent tomato plants in conjunction with *Heliothis zea* in several fields in St. Bernard Parish. (Spink).

TOMATO PINWORM (*Keiferia lycopersicella*) - TEXAS - Feeding on tomatoes in Brazos County. (Turney).

- STRIPED CUCUMBER BEETLE (*Acalymma vittata*) - MARYLAND - Abundant on newly emerged cucumbers at various localities in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Common on cucumber, prevalent and causing moderate to heavy damage to squash in Sussex County. (MacCreary, Conrad). MISSOURI - Average 2-3 adults per hill on watermelons and cantaloups, causing heavy damage, especially to seedlings, in southeast melon growing area. (Kyd, Thomas).
- SPOTTED CUCUMBER BEETLES (*Diabrotica undecimpunctata howardi*) - LOUISIANA - Heavily infesting squash and watermelons in West Carroll and Grant Parishes. (Spink).
- SOUTHERN GREEN STINK BUG (*Nezara viridula*) - LOUISIANA - Infestations moderate on watermelons and vegetables in Union Parish. (Spink).
- CABBAGEWORMS - NEW JERSEY - *Plutella maculipennis* fairly numerous on various crucifers; few *Pieris rapae* present. (Ins. Dis. Newsl.). ARKANSAS - *Pieris rapae* infesting cabbage in Poinsett County. (Boyer, May 24). DELAWARE - *P. rapae* common on cabbage in western Kent County. (MacCreary, Conrad).
- SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) - MASSACHUSETTS - Active in lettuce fields. (Crop Pest Cont. Mess.).
- BEET LEAFHOPPER (*Circulifer tenellus*) - UTAH - Very abundant on weed hosts in Delta and Nephi areas of Millard and Juab Counties. (Knowlton). IDAHO - Large migrations of adults appearing in south central area, apparently born by southerly winds. Populations average slightly over 13 per square foot in western end of Twin Falls irrigated tract. (T.F.F.S.).
- BEET WEBWORM (*Loxostege sticticalis*) - COLORADO - Numerous moths observed in all of western area and into Montezuma and La Plata Counties. (Exp. Sta., Ext. Serv.). UTAH - Moths common over State. (Knowlton).
- MEXICAN BEAN BEETLE (*Epilachna varivestis*) - MARYLAND - Adults light and larvae observed on beans in western Wicomico County. Little damage to May 29. (U. Md., Ent. Dept.). MISSISSIPPI - Adults on lima beans in Lauderdale County. (Hutchins, May 23). ALABAMA - Heavy infestations on beans in Baldwin County. Completely destroyed foliage of plants some areas. (Grimes).
- BEAN LEAF BEETLES (*Cerotoma trifurcata*) - MARYLAND - Light to moderate on beans in western Wicomico County. (U. Md., Ent. Dept.). NORTH CAROLINA - Worse than past 5 years at this time of year in northeastern counties. (Scott).
- PEA APHID (*Macrosiphum pisi*) - OREGON - Populations continue to increase in field peas and hairy vetch in Polk County, they decreased rapidly same period in 1957. Generally increasing in Willamette Valley. (Dickason, May 26).
- WISCONSIN - Found May 27 on early Sauk County peas. (Wis. Coop. Sur.).
- PEA WEEVIL (*Bruchus pisorum*) - OREGON - Requiring control in several pea fields in Willamette Valley, May 23. (Capizzi).
- ASPARAGUS BEETLES (*Crioceris* spp.) - MASSACHUSETTS - Very abundant. (Wheeler, May 24). MICHIGAN - *C. asparagi* and *C. duodecimpunctata* numerous wherever asparagus grown. (Hutson, May 23). MARYLAND - Adults of *C. asparagi* moderate on ferns at Broome Island. (U. Md., Ent. Dept.).
- SPINACH LEAF MINER (*Pegomya hyoscyami*) - COLORADO - Adults began appearing first week of May in Montrose and Delta Counties. (Exp. Sta.). MASSACHUSETTS - Eggs being laid, some hatching. (Crop Pest Control Mess.).
- CARROT WEEVIL (*Listronotus oregonensis*) - MASSACHUSETTS - Adults first found May 19, many by May 21. (Wheeler).

CUTWORMS - MASSACHUSETTS - More destructive than usual. (Wheeler, May 24).
 ARKANSAS - *Peridroma margaritosa* infesting cabbage in Poinsett County. (Boyer, May 24). NORTH DAKOTA - Damage continued to vegetable transplants in south-eastern section. (N. D. Ins. Rpt.).

A CURCULIONID (*Pantomorus tessellatus*) - OKLAHOMA - Heavy damage to onions, okra, tomatoes and corn in Ames vicinity, northwest area. (Howell).

ONION MAGGOT (*Hylemya antiqua*) - MICHIGAN - Numerous at Bath, Stockbridge and Munith. Few larvae found at Bath. (Hutson, May 22). IDAHO - Larval feeding reduced 4-acre stand in Homedale area approximately 20 percent. Populations presently mostly in mature larval or pupal stage. (Portman). UTAH - Infesting older sets in northern area. (Knowlton). OREGON - Appearing in earliest plantings at Lake Labish; losses already estimated at 5 percent. (Crowell, May 26)

BROWN WHEAT MITE (*Petrobia latens*) - IDAHO - Infesting field of onions in Canyon County which was previously infested badly during 1957. (Scott).

CURRENT BORER (*Ramosia tipuliformis*) - OREGON - Peak adult emergence reached May 23 in infested currant planting at Salem, also reported in Sherman County. (Every).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - GEORGIA - Light infestation on tomatoes in Thomas County. (Johnson). MASSACHUSETTS - Many strawberry beds infested. (Crop Pest Cont. Mess.). WISCONSIN - *T. telarius* very numerous in Door County on strawberries. (Wis. Coop. Sur.).

CYCLAMEN MITE (*Steneotarsonemus pallidus*) - WISCONSIN - Distorted strawberry plants running as high as 10 percent in some Door County plantings. (Wis. Coop. Sur.).

SPITTLEBUGS - MASSACHUSETTS - Abundant some strawberry plantings. (Wheeler, May 24).

A NITIDULID (*Lobiopa insularis*) - LOUISIANA - Populations in strawberries unusually light compared with 1956 and 1957. (Spink).

RASPBERRY CANE MAGGOT (*Pegomya rubivora*) - OREGON - Apparently much less abundant than in 1957; few reports of damage to rose plantings in western area. (Every, May 26).

TOBACCO INSECTS

TOBACCO BUDWORM (*Heliothis virescens*) - GEORGIA - Light infestations on tobacco in Tattnall and Cook Counties; moderate in Emanuel, Bulloch, Candler, Bacon, Coffee, Irwin and Tift Counties; heavy in Appling, Colquitt and Worth Counties. (Johnson). NORTH CAROLINA - Averaging 7.5 larvae per 50 tobacco plants in southern Columbus County, May 21. (Strickland). Many small instars in Pitt County, injury easily noticed. (Green).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Generally light on tobacco in plant beds in Calvert County. (U. Md., Ent. Dept.). NORTH CAROLINA - Very abundant and causing injury to newly-set tobacco in Granville County. Relatively few growers treated plants in beds. (Chamberlin).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - MARYLAND - Moderate to heavy larval populations on tobacco in beds in Calvert County. (U. Md., Ent. Dept.).

WIREWORMS - NORTH CAROLINA - Up to 70 percent of tobacco plants infested in some fields in Wake County by larvae of Conoderus sp., probably C. vespertinus. (Guthrie).

GREEN PEACH APHID (Myzus persicae) - GEORGIA - Light infestations on tobacco in 9 counties and moderate in Coffee County. (Johnson).

STINK BUGS - GEORGIA - Light infestations of Nezara viridula and Euschistus servus on tobacco in Tattall and Coffee Counties. (Johnson).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Populations increasing throughout lower Rio Grande Valley. Continues to feed on terminals and young squares in Coastal Bend, southwest, upper coastal and south central areas. (Gaines). Weevils found at average of 143 per acre in 33 fields inspected in McLennan and Falls Counties. (Parenica et al.). SOUTH CAROLINA - Weevils range 0-94 per acre in fields checked in Florence and Darlington Counties. Averaged 116 per acre on experimental basic acre at Florence. (Fye, et al.). LOUISIANA - Weevils averaged 81 per acre in 29 fields examined in Madison Parish and infestation ranged from 50 to 350 per acre in fields infested. Percentage survival in hibernation cages to May 28 at Tallulah was 3.24 compared with .55 in 1957, 1.16 in 1956, .88 in 1955, and 1.12 in 1954. (Smith et al.). Averaging 3 per 100 feet of row in Pointe Coupee Parish and 1 per 100 feet of row in one field in Tensas Parish. (Oliver). GEORGIA - Thirty-six of 40 southeastern and south central cotton fields examined infested with range of 125 to 375 weevils per acre; averaging 245 weevils per acre. (Johnson). ALABAMA - Beginning to puncture squares in cotton. (Grimes).

BOLLWORM (Heliothis spp. et al.) - TEXAS - Increasing in lower Rio Grande Valley. (Deer). SOUTH CAROLINA - Some damage on terminal buds at Florence. Readily found most fields. (Fye, et al.). GEORGIA - Forty southeast and south central area cotton fields inspected, 38 found infested with 1-8 larvae per 100 perennials; average 3.4 larvae per 100 terminals. Eggs found most fields. (Johnson).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Alarming increase in infestations in lower Rio Grande Valley. Heavy infestations from south of San Benito up river as far as Santa Maria. Other infestations near Progreso, Santa Rosa, Mercedes, La Feria, North of Weslaco and east of Sebastian. (Deer, May 26).

THRIPS - TEXAS - Light to heavy in eastern, central, northeast, north central and south plains areas. (Gaines). Adults numerous in most late-planted cotton fields in McLennan and Falls Counties; medium to heavy in 7 of 16 untreated fields. (Parenica et al.). ARIZONA - Light to moderate damage in cotton in Pinal County. (Mendenhall, May 21). Increasing in Maricopa, Pima, Pinal and particularly in Graham County where considerable malformation of plants resulted. (Bottger, Kauffman). LOUISIANA - Counts averaged .16 per plant in 34 fields examined at Tallulah. (Smith, et al.). Remain light in Pointe Coupee, Tensas and Franklin Parishes. (Oliver). MISSOURI - Cotton along margins of few fields averaged 0.33 to 0.5 thrips, probably Aeolothrips fasciatus. (Kyd, Thomas). GEORGIA - Light to moderate infestations on cotton in 16 counties. (Johnson). Moderate infestations in Spalding County. (Beckham).

APHIDS - SOUTH CAROLINA - Populations in Florence and Marlboro Counties. Most damage done. Many lady beetle larvae and high parasite populations apparently have aphids under control. (Fye, et al.). LOUISIANA - Continue very light at Tallulah. (Smith et al.). Declined considerably in Tensas Parish. (Oliver). GEORGIA - Light infestations of Aphis gossypii on cotton in 13

counties. (Johnson). Light in Spalding County. (Beckham). TEXAS - Infestations of A. gossypii light in 30 and medium in 1 of 33 fields inspected in McLennan and Falls Counties. (Parencia et al.). NORTH CAROLINA - Heavy infestation of Aphis gossypii in Scotland County, 15-25 per leaf on 2 to 4-leaf stage cotton. Parasites very active. (Jones, Mistic). ALABAMA - Light infestations in Coffee County. (Grimes)

FLEAHOPPERS - ARIZONA - Populations of black fleahopper building up in Graham, Maricopa, Pima and Pinal Counties. (Bottger, Kauffman). TEXAS - Infestations heavy in coastal bend and southwest areas. Light to medium infestations occurred in upper coastal, south central and east areas. (Gaines). Averaged 2.2 per 100 terminals in 33 fields inspected in McLennan and Falls Counties, maximum of 16 in one untreated field. (Parencia et al.). ALABAMA - Psallus seriatus collected on cotton in Autauga County. (Rawson).

CUTWORMS - ALABAMA - Causing moderate damage to young cotton in northern area. (Ruffin).

BEE T ARMYWORM (Laphygma exigua) - NEVADA - Damage to cotton in Pahrump Valley, Nye County increased. Control measures being applied. (Zoller, May 23). Note in CEIR 8(22):457 on this species on cotton in Nevada verified by G. T. Okumura. (Bechtel, May 23).

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Ragging cotton in scattered fields in lower Rio Grande Valley. (Deer).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ALABAMA - Several adults collected from cotton in Lee County. (Rawson).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Beginning to damage cotton in Pinal County. First report of season. (Mendenhall, May 21). CALIFORNIA - Light infestation on cotton in Borrego area of San Diego County. (Cal. Coop. Rpt.).

SPIDER MITES - ALABAMA - Heavy infestation defoliating young cotton. Dominate species Tetranychus telarius; T. atlanticus of lesser importance. (Rawson).

LYGUS BUGS - TEXAS - Damaging numbers present across north Hidalgo County and in Willacy County. (Deer). ARIZONA - Appearing in practically all fields in Salt River, Santa Cruz and Safford Valleys. (Bottger, Kauffman).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Medium to heavy damage to roots of young cotton plants by larvae in Monroe County. (Lemons).

PALE-STRIPED FLEA BEETLE (Systema blanda) - GEORGIA - Moderate infestations of adults on cotton in Spalding County. (Beckham).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - ALABAMA - Serious damage in area of Elmore County. (Spink). LOUISIANA - Larvae heavily infesting pine seedlings in West Carroll Parish. (Spink). ARKANSAS - Infesting loblolly pine in Craighead County. (Boyer, Dowell).

A LOOPER (Phigalia titea) - WEST VIRGINIA - Complete defoliation of 2,000 acres of maple, oak, cherry, sassafras and dogwood, South Branch Mountain and 75 percent defoliation in 300 acres of same hosts, Sandy Ridge Mountain. Both areas in Hardy County. (W. Va. Ins. Surv.).

FALL CANKERWORM (Alphitoba pomatoria) - PENNSYLVANIA - Heavy defoliation on 100 acres of forest in York County, May 24. (Pepper).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MICHIGAN - Some larvae survived in areas of northern Lower Peninsula where temperatures reached at least 28° below zero. (Hutson). PENNSYLVANIA - Heavy infestation on Scotch pine and nearly all pupated in Indiana County (Udine), 10 percent pupated in Crawford County (Adams).

A TWIG BORER (Gypsonoma hainbachiana) - ARKANSAS - Infesting cottonwood in White, Woodruff, Craighead and Pulaski Counties. (Boyer, Dowell).

A CATOCALA MOTH (Catocala sp. prob. aholibah) - CALIFORNIA - Heavy on oaks, St. Helena, Napa County. (Cal. Coop. Rpt.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MARYLAND - Feeding on deciduous trees on Town Hill Mountain. (U. Md., Ent. Dept.). MINNESOTA - Third and fourth instars north of Cloquet. Defoliation light, occasional trees 50 percent defoliated. (Minn. Ins. Rpt.). WISCONSIN - Numerous on aspen in areas of Price County. Lowest populations in years for southeastern Sawyer County. (Wis. Coop. Sur.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - MARYLAND - Severe on wild cherry and neglected fruit trees in all sections. (U. Md., Ent. Dept.). WISCONSIN - Second and third-instar larvae in Bayfield County, May 22. Considerably advanced in southern area. Tents appear less numerous than in 1957. (Wis. Coop. Sur.). RHODE ISLAND - Heavy on wild cherry and other hosts in several areas. (Mathewson, Stoner).

SATIN MOTH (Stilpnotia salicis) - OREGON - Overwintering larvae leaving hibernation site and feeding on silver poplar, Sherman County, May 15. (Every).

MOUNTAIN PINE BEETLE (Dendroctonus monticolae) - UTAH - Infestation extensive in Wasatch National Forest. Widespread control may be necessary. (Knowlton).

A PINE COLASPIS (Colaspis pini) - LOUISIANA - Heavy infestations of pine trees in East Baton Rouge Parish. (Spink).

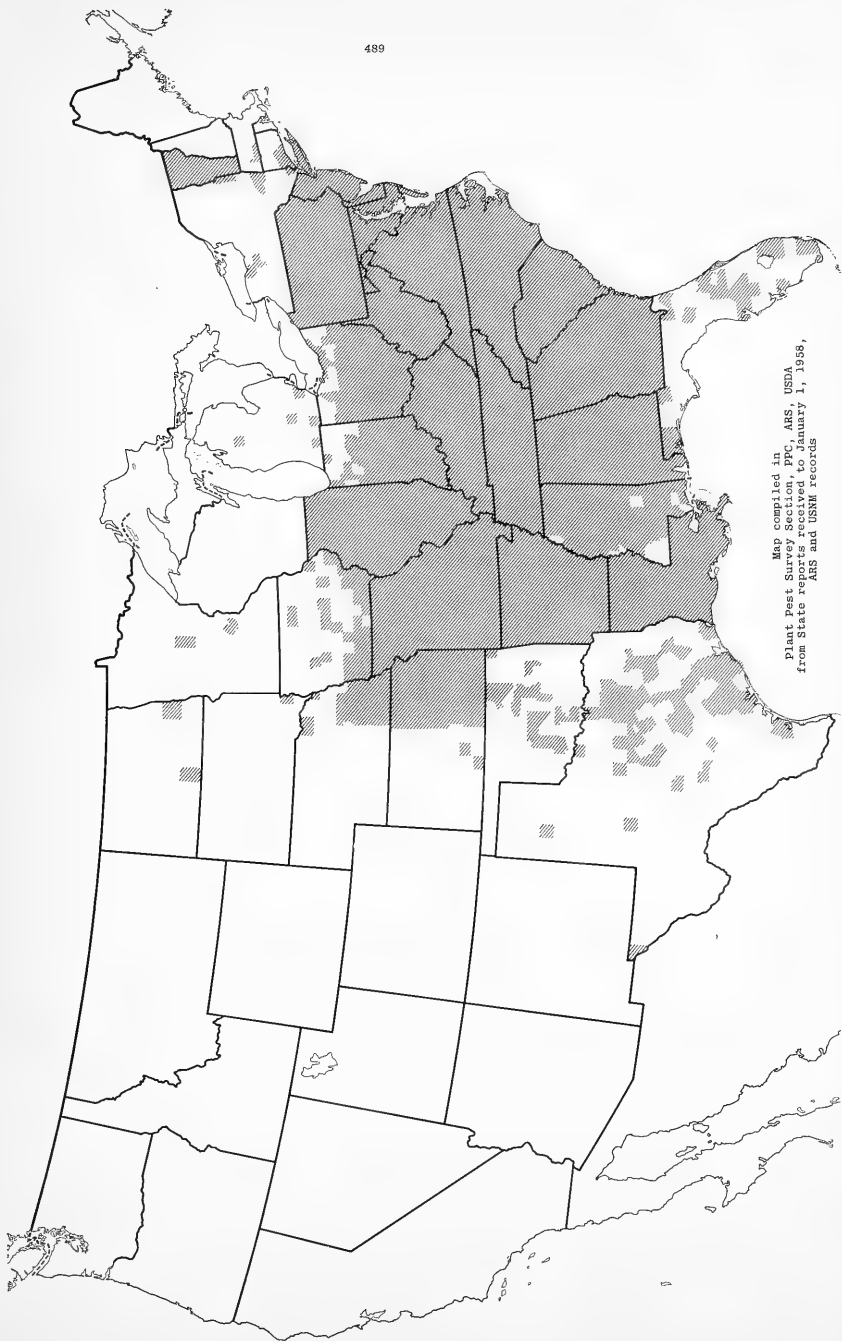
SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - WISCONSIN - Appearing but cool weather apparently slowed peak emergence. Dutch elm disease identified from a third tree in 1958. Tree in Rock County. (Wis. Coop. Sur.).

MAPLE BLADDER-GALL MITE (Vasates quadripes) - MICHIGAN - Numerous in Lansing, Grand Rapids, Detroit and Benton Harbor. (Hutson, May 22). MINNESOTA - Continues to be reported. (Minn. Ins. Rpt.). VIRGINIA - On leaves of maples in Rockbridge and Nelson County. (Ames, Swain). PENNSYLVANIA - Quite numerous, light to heavy on some maples, Indiana County and numerous calls from Allegheny County. (Udine).

SPITTLEBUGS - NORTH CAROLINA - Aphrophora sp. infesting shoots of loblolly pine, Davidson County. (Jones, Young). MICHIGAN - A. parallela formed spittle masses on jack pine about May 19 in Roscommon County. (Hutson). WISCONSIN - A. saratogensis first-instar nymphs in northeastern area. (Wis. Coop. Sur.)

APHIDS - UTAH - Problem on many flowers, trees and fruits. Populations generally above normal. (Knowlton). IDAHO - Building up on pines in some northern areas. Infestations in varying degrees on snowball bushes in many parts of eastern area. (T.F.F.S., Bishop, Gittins). PENNSYLVANIA - Pineus strobi much more abundant than usual on Scotch pine in Crawford and Venango Counties (Adams) and in northeast species was heavy, more inquiries than usual. (Gesell). Heavy population of Chermes abietis rather general on Norway spruce, Wayne

DISTRIBUTION OF BAGWORM (*THYRIDOPTERYX EPHEMERAIFORMIS*)



Map compiled in Plant Pest Survey Section, PPC, ARS, USDA from State reports received to January 1, 1958, ARS and USNM records

County. (Gesell). RHODE ISLAND - Mindarus abietinus heavy on fir at Smithfield. (Mathewson). KANSAS - Myzocallis ulmifolii causing considerable annoyance and discomfort from honeydew dropping from trees throughout eastern area. (Thompson). IDAHO - Winged migrants of Periphyllus lyropicetus becoming general on maples in Boise area. (Portman).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - IDAHO - Crawlers appearing on trees at Boise with hatching about 1 percent complete. (Portman).

PINE SAWFLIES (Neodiprion spp.) - VIRGINIA - Larvae light but scattered over Amelia County on pine trees. Heavy along US 60 and US 522 in Powhatan County. (Wilson). PENNSYLVANIA - Severe defoliation of red pine in Carbon County by N. sertifer. Larvae in final instar. (Drooz).

SCALES - IDAHO - Lepidosaphes ulmi severe on cottonwood and ash, Twin Falls. (T.F.F.S.). NORTH DAKOTA - Egg hatch of Phenacaspis pinifoliae complete May 20, Fargo area. Heavy infestations on spruce. (N. D. Ins. Rpt.). MINNESOTA - Numerous inquiries concerning Lecanium corni. Phenacaspis pinifoliae hatched in central area and further south. L. ulmi hatched. (Minn. Ins. Rpt.). WISCONSIN - An abnormally heavy population of a scale (presumably European fruit lecanium) developed in several localities in Dane, Sauk, Washington and Milwaukee Counties. Numerous trees and shrubs affected. Present control ineffective. (Wis. Coop. Sur.). LOUISIANA - Neolecanium cornuparvum heavily infesting magnolias in St. Tammany Parish. (Spink). NORTH CAROLINA - Unaspis euonymi in crawler stage in Elizabeth City area. (Scott).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MINNESOTA - On evergreens, roses and many other hosts. (Minn. Ins. Rpt.). WISCONSIN - High populations on many ornamental evergreen plantings. (Wis. Coop. Sur.).

VARIEGATED CUTWORM (Peridroma margaritosa) - ALABAMA - Serious on young ornamentals in Mobile County. (Bolton, Berry, Seibels).

PAINTED LADY (Vanessa cardui) - OREGON - Large flights in Yamhill County, and numbers in Marion County, May 24. (Every). CALIFORNIA - Larvae nuisance in several areas. Heavy infestation on thistle, Ione area of Amador County, on malva at Imola in Napa County and medium infestation, San Andres, Calaveras County. In Santa Clara County migrating larvae covered roads in several areas. (Cal. Coop. Rpt.).

A NYMPHALID (Asterocampa celtis) - KANSAS - First-generation larvae causing considerable injury to hackberry leaves in Riley County area. Pupation underway. Second-generation larvae may cause additional injury during late July and August. (Thompson).

A COTONEASTER WEBWORM (Cremona cotoneastri) - OREGON - Very abundant in the Corvallis area. (Ritcher).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - Heavy on acacia in San Diego. (Cal. Coop. Rpt.).

HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma) - KANSAS - Caused curling and dying of foliage in economic proportions in eastern area. (Thompson).

TREEHOPPERS - OKLAHOMA - Common on honeylocust in Harper County, feeding on terminals and axils of leaves. (Coppock).

EUROPEAN ELM SCALE (Gossyparia spuria) - COLORADO - In destructive numbers during past two weeks in Fort Collins, Larimer County and Canon City, Fremont County. (Ext. Serv.).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - NORTH CAROLINA - Two to 10 per leaf on American elm in a Wake County locality. (Scott, Farrier). DELAWARE - Adults and larvae common on elms in Sussex County. (MacCreary, Conrad). NEVADA - First adults of year at Lovelock, Pershing County. (Snyder, May 23).

CICADAS - IDAHO - Exceedingly abundant in shade trees, sagebrush and deciduous shrubs in Michaud Flats of Fort Hall Indian Reservation. (Schow).

Forest Insect Situation in Missouri - In south central Ozark region, considerable defoliation, ranging from 10-80 percent of hard and soft woods, caused by a complex of larvae. At least 2 and probably 3 species of geometrids common on oaks, hickory, redbud and other trees. An undetermined species of *Catocala* and a noctuid very abundant on oaks. Several species of leaf rollers, leaf folders abundant on hickory, oaks and others. A complex of aphids and lace bugs increasing rapidly on oaks, maples, sycamores and other trees and shrubs. (Kyd, Thomas).

INSECTS AFFECTING MAN AND ANIMALS

AMERICAN DOG TICK (*Dermacentor variabilis*) - NORTH DAKOTA - Infestations heavier than normal in Goose River area, Grand Forks County. (Post). NEBRASKA - Heavy in region of Scotts Bluff National Monument and in Mitchell area of Scotts Bluff County. Moderate infestation along Platte River in Keith County. (Rapp). OKLAHOMA - Adults average 3 per 10 sweeps in Stillwater vicinity. (Howell).

MOSQUITOES - NEVADA - *Aedes* spp. very numerous over entire State and extremely annoying in many areas for this time of year. (Bechtel, May 23). UTAH - Annoying in several areas. (Knowlton). NEW MEXICO - Very annoying in Bernalillo and Socorro Counties. (N. Mex. Coop. Rpt.). OKLAHOMA - *Anopheles punctipennis*, *Culex restuans*, *C. salinarius*, *C. tarsalis* and *Aedes vexans* very common in north central area. (Howell). NEBRASKA - First brood of *Aedes vexans* and *A. dorsalis* emerged in Scotts Bluff County. (Rapp). NORTH DAKOTA - *Culex tarsalis*, *C. pipiens* and *C. restuans* present at Fargo May 22-29. (N. D. Ins. Rpt.). MINNESOTA - No general hatch yet of *Aedes vexans*, the most common pest mosquito, but heavy hatch from laboratory mud samples. Larvae of numerous other mosquitoes present. (Minn. Ins. Rpt.). OHIO - Abundant and troublesome in park areas and residential areas of Wayne, Ashland and Richland Counties. *Aedes stimulans* chiefly, with smaller numbers of *A. vexans* and *A. canadensis*. (Rings). NORTH CAROLINA - *Aedes sollicitans* abundant all along coast and particularly in Manteo area. (Ashton).

BLACK FLIES (*Simuliidae*) - IDAHO - Locally abundant in Moscow Mountain area. (Manis). NORTH CAROLINA - Biting residents in Watauga County. (Tuckwiller, Farrier). RHODE ISLAND - Adults biting and present statewide. (Pepper).

FLIES - OKLAHOMA - Populations of stable flies on unsprayed dairy animals in the Stillwater area vary from 5-60 per animal. (Howell). ALABAMA - Heavy infestations of *Musca domestica* in and around dairy barns in Baldwin County. (Grimes). WISCONSIN - Stable flies appear lagging behind horn flies in development. (Wis. Coop. Sur.).

TABANIDS - LOUISIANA - Horse fly and deer fly populations medium to heavy in Richland, Livingston, Tangipahoa, Beauregard and West Carroll Parishes. (Spink). WISCONSIN - Horse flies appearing in a few localities. (Wis. Coop. Sur.).

AN EYE GNAT (*Hippelates collusor*) - NEVADA - Reported as *Hippelates* sp. in CEIR 8(22):458 has been identified as above species by C. W. Sabrosky. (Bechtel).

HORN FLY (*Siphona irritans*) - OREGON - Estimate of 100-200 flies per head on many animals in Umatilla, Gilliam and Sherman Counties week ending May 17. (Every). NEW MEXICO - Infestations building up on cattle in Colfax, Union and Harding Counties. (N. Mex. Coop. Rpt.). OKLAHOMA - Range 200-1,000 on cows and 1,000-3,000 on bulls at Stillwater. (Howell). LOUISIANA - Heavy in Richland, Livingston, Tangipahoa, Beauregard and West Carroll Parishes. (Spink). ALABAMA - Infestations increasing in central and southern areas. (Grimes). FLORIDA - Ranged from 150-200 per head of cattle in 3 herds at Haynesworth, Alachua County. (Fla. Coop. Sur.). WISCONSIN - Annoying herds in most sections. Up to 25 flies per cow as far north as Taylor County. (Wis. Coop. Sur.).

CATTLE GRUBS (*Hypoderma* spp.) - OREGON - *H. bovis* in small numbers in backs of cattle in Gilliam County, week ending May 17. Peak abundance apparently passed. (Every). UTAH - Heel flies annoying cattle in Uintah, Duchesene, and Juab Counties. (Knowlton). NEW MEXICO - *H. lineatum* adults annoying cattle in Colfax, Union and Harding Counties. (N. Mex. Coop. Rpt.).

A BLOODSUCKING CONENOSE (*Triatoma protracta*) - CALIFORNIA - Heavy infestation in house in Elk Creek, Glenn County. (Cal. Coop. Rpt.).

ORIENTAL COCKROACH (*Blatta orientalis*) - NEVADA - Heavy populations in dairies in Clark County. (Lauderdale, May 23).

BENEFICIAL INSECTS

HONEY BEE (*Apis mellifera*) - MASSACHUSETTS - Winter losses less than 5 percent. Swarming started. (Wheeler). RHODE ISLAND - Several swarms in Warwick and Saunderson. (Stoner).

CARPENTER BEE (*Xylocopa virginica*) - PENNSYLVANIA - Quite general over State in buildings. Numerous inquiries. (Pepper).

PARASITES AND PREDATORS - WEST VIRGINIA - *Calosoma* spp. and predaceous bugs numerous, Hardy County. (W. Va. Ins. Sur.). OREGON - First emergence of an alkali bee parasite (*Heterostylum robustum*) at Ontario and Milton-Freewater May 22-23. (Stephen). ARIZONA - *Collops* spp., *Orius* sp., lady beetles and spiders all fairly abundant. (Böttger, Kauffman). NORTH CAROLINA - Very abundant on corn silks, Duplin County. (Farrier). TEXAS - Lady beetles, syrphid larvae and lacewings increasing in numbers. (Randolph). SOUTH DAKOTA - Approximately 1-2 *Chrysopa* sp. adults in central and east central alfalfa fields. *Nabis* sp. and *Hippodamia* sp. average 2 per 10 sweeps in central and east central alfalfa, with few immature forms of latter present. (Hantsbarger). OKLAHOMA - Lady beetles and lacewings (larvae and adults of both) unusually abundant in small grains and alfalfa throughout State. From 30-40 lady beetles and 15-25 lacewings per 10 sweeps from alfalfa very common. (Coppock).

MISCELLANEOUS INSECTS

CLOVER MITE (*Bryobia praetiosa* complex) - MASSACHUSETTS - More in houses than usual and abundant on ground cover of orchards. (Wheeler, May 24). OHIO - Still invading houses in northern area. (Rings). IDAHO - Annoying in houses in Twin Falls area. (T.F.F.S.)

EUROPEAN EARWIG (*Forficula auricularia*) - UTAH - Increasingly abundant and annoying in gardens and about homes. Adults and nymphs numerous some places. (Knowlton).

OLD-HOUSE BORER (*Hylotrupes bajulus*) - ALABAMA - Specimens collected in Lee County May 24 is First in several years. (Pearson).

STINK BUGS - ARIZONA - Heavy infestation on flax growing on experimental farm at Mesa. (Bottger, Kauffman).

TERMITES - MASSACHUSETTS - Abundant. (Wheeler, May 24). OHIO - Reticulitermes flavipes numerous in northern area. (Rings).

ADDITIONAL NOTES

NEW MEXICO - GRASSHOPPERS are light to medium and spotty in alfalfa, Dona Ana, Socorro and Otero Counties, damaging tomatoes in first and last and ornamentals in Alamogordo County. CORN LEAF APHID heavy on wheat and barley, some control applied, Roosevelt, Chaves and Eddy Counties. ENGLISH GRAIN APHID heavy, spotty on barley, Dona Ana County, light to medium in Chaves County. LYGUS BUGS heavy in alfalfa in most areas of State, as high as 4-5 adults and 2-10 nymphs per sweep. THRIPS heavy in most alfalfa fields in southern half of State, medium to heavy on onions, Dona Ana County, with some controls and medium to heavy damage to untreated cotton fields, Dona Ana, Eddy, Chaves, Luna and Hidalgo Counties. SPOTTED ALFALFA APHID light to heavy and spotty throughout State, building up in northern areas. Many growers using control measures in southern half of State. PEACH TWIG BORER damaging peach twigs, Rio Arriba and Dona Ana Counties and GREEN PEACH APHID heavy in northern half of State, light and spotty in southern half. On apples, WOOLLY APPLE APHID spotty, light to medium in most growing areas, ROSY APPLE APHID heavy in San Juan County, light in Rio Arriba and Santa Fe Counties, APPLE LEAFHOPPER medium to heavy in Lincoln County orchards and CODLING MOTH infestations averaged 30-40 percent in unsprayed Sandoval County orchards. Several heavy infestations of SAN JOSE SCALE on fruit and apricots in Rio Arriba and Santa Fe Counties. In unsprayed orchards FRUIT TREE LEAF ROLLER is heavy in Taos and light to medium in Rio Arriba and Santa Fe Counties and ORCHARD MITES are heavy throughout State. CABBAGE LOOPER continues to damage lettuce, Eddy, Valencia, Bernalillo and Chaves Counties and romaine in Eddy County. A LEAFHOPPER caused moderate damage to melons and squash, Eddy and Dona Ana Counties. COTTON APHID and TWO-SPOTTED SPIDER MITE are light and spotty on cotton in Dona Ana, Eddy and Chaves Counties, as is COTTON FLEAHOPPER in Eddy, Chaves and Roosevelt Counties. COTTON BOLLWORM is light, skeletonizing leaves in Eddy and Dona Ana Counties and CABBAGE LOOPER is light in Luna, Dona Ana, Eddy and Chaves Counties. WHITE-LINED SPHINX larvae medium to heavy where cotton fields border rangeland in Eddy County. VARIEGATED CUTWORM damaged garden and lawns in Union and Bernalillo Counties and BILLBUG larvae are damaging Bermuda grass lawns and two-spotted spider mites are heavy on ornamentals at Las Cruces. CALIFORNIA PRIONUS is emerging from Dona Ana County elms, willows and poplars. BEET WEBWORM adults are creating a nuisance in many cities in northern half of State and large numbers of WHITE-LINED SPHINX larvae cause some concern by crossing highways. (N. Mex. Coop. Rpt.).

NEW YORK - Egg laying by EUROPEAN FRUIT LECANIUM first noticed May 27 in western area. Few SPRING CANKERWORMS appearing in Orleans County and heavy populations of APPLE APHID appearing some orchards in Monroe County. PEACH TWIG BORER infesting stanley prunes in orchard in Monroe County. Larvae of ONION MAGGOT easy to find but not damaging and SIX-SPOTTED LEAFHOPPER appearing on lettuce in Orange County. (N. Y. Wkly. Rpt.).

Continued on page 495

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta quinq.	Heliothis zea vires.
ALABAMA						
Auburn 5/24-29	16	51				41
Fairhope 5/6	3					
ARKANSAS						
Fayetteville 5/8-21	42	8		12		1
Kelso 5/8-21	18	10		9		6
Morrilton 5/8-21	182	78				7
Stuttgart 5/8-21	14	5		8		
FLORIDA						
Gainesville 5/22		2			1	
Homestead 5/20-21		19				6
Quincy 5/19-26					10	2
ILLINOIS						
Urbana 5/23-28	74					
INDIANA (Counties)						
Orange 5/11-17	985	32	3	47		
Tippecanoe 5/16-22	448	23	2	19		
KANSAS						
Garden City 5/21-24	24				27	
Hays 5/23-27	60				20	
Manhattan 5/25, 28, 31	35	4				2
Wathena 5/20-25	246	16			3	1
LOUISIANA						
Baton Rouge 5/24-30		1	25	11		90
Franklin 5/23-30			9	8		5
MARYLAND						
Fairland 5/24-28	25					
MISSISSIPPI						
Meridian 5/23					4	
Senatobia 5/16-23	6					
State College 5/24-30	5	6	5	1		2
*Stoneville 5/24-29	269	56	27	111	6	71
MISSOURI						
Columbia 5/25-30	20	4				
Sikeston 5/26-29	8	1		1		
NEBRASKA						
Alliance 5/6-10	11	4		63		
Lincoln 5/6-10	946	145		137		24
North Platte 5/12-16	450	14		346		3
Scotts Bluff 5/13-19	6	1		60		18
NORTH CAROLINA						
Clayton 5/29					7	3
Faison 5/29	2	4	6		7	1
						9

* Four traps Stoneville

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta quinq.	Heliothis zea vires.
NORTH DAKOTA						
Fargo 5/24-28	546			35		
SOUTH CAROLINA						
Charleston 5/19-25	4	7	2	4	6	1
Clemson 5/24-30	32	7	16	2	22	52 45
Florence 5/25-31	1	1			11	13 46
SOUTH DAKOTA						
Brookings 5/29	221	8				
TENNESSEE						
Blount 5/20-26	160	6	2	36		8
Cumberland	25	6		8		2
Greene	48	10	1	8		3
Johnson	850	260	2	26		2
Madison	22	3	1	12		6
Maury	40	4	4	5		15
Robertson	36	7	1	6		4
TEXAS						
Brownsville 5/19-23		16	18			140
Waco 5/23-29	52		31	61		12
Winter Haven 5/26	4		9			5

ADDITIONAL NOTES - Continued from page 493

OREGON - Infestation of MORMON CRICKET at Blalock is now down to one or less per square yard. (Chinn). BEAN APHID appearing in bean fields near Jefferson earlier than in 1957. (Morrison). ORANGE TORTRIX moderate in Marion County blackberry and boysenberry plantings. (Stephenson). Adults of a SOD WEBWORM extremely numerous in Clackamas County legume fields. (Dickason). BLACK CHERRY APHID appearing in several Willamette Valley cherry orchards with several branch terminals observed infested near Stayton. (Stephenson).

CORRECTIONS

CEIR 8(19):372 - LIGHT TRAP COLLECTIONS - MISSISSIPPI - Stoneville 4/26-5/2, omit H. virescens 12 and add Pseudaletia unipuncta 12.

CEIR 8(22):441 - GRASSHOPPERS - NEVADA - Change Fel Curto to read Del Curto.
447 - SPOTTED ALFALFA APHID -Change NEBRASKA to read KANSAS.

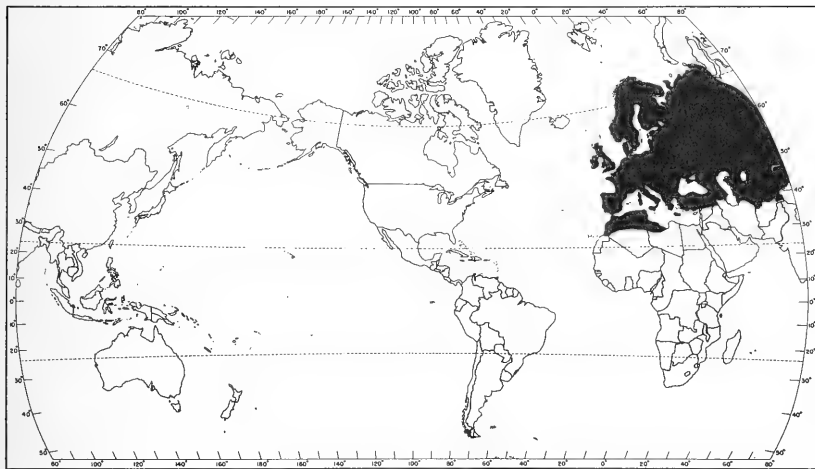


INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

SILVER-Y MOTH* (Autographa gamma (L.))

Economic Importance: Outbreaks of this noctuid occur periodically over wide areas of Europe, Asia and North Africa. Infestations were unusually heavy in flax and truck crops throughout European USSR in 1922. The outbreak of 1928, which occurred in most of central Europe, caused widespread defoliation of peas in Poland. Damage from this insect and *Pieris rapae* in areas of the Netherlands ran as much as 320,000 guilders during some years in the 1800's. It is also very destructive in England and Denmark. Outbreaks are more frequent in North Africa and southern USSR than in central Europe. Between years of high populations, the pest is generally not conspicuous.

Distribution: Widely distributed throughout all of Europe, and eastward through Asia to India and China; also occurs in North Africa.



General Distribution of Silver-Y Moth

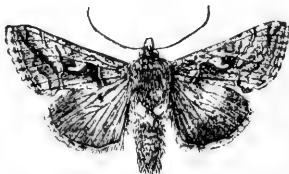
*Also called gamma noctuid. (Noctuidae, Lepidoptera)

Hosts: Attacks many plants. The most important cultivated hosts are potatoes, beets, flax, hemp, crucifers and legumes. Cereals, grasses and even forest trees, are sometimes attacked.

Life History and Habits: The adults appear during June. Females oviposit about 500 whitish eggs, singly or in small batches, on the underside of leaves of low-growing plants. The incubation period lasts for 10-12 days. The young caterpillars web and feed on vegetation of the host plants. At times the larvae may destroy entire crops during outbreaks, then collect in great numbers on the soil and migrate in bands to other fields, devouring susceptible foliage in their path. The larvae readily drop from plants when disturbed. Larval development requires less than a month. By July, most of the feeding is completed and toward the end of the month pupation occurs. Pupation takes place in a cocoon on host plants and lasts from 12 to 15 days. Second-brood adults are in flight from mid-August to mid-September. Second-brood larvae develop to late instars or into pupae before hibernation. There are normally two generations a year.

Description: Adult forewings are marbled in appearance, ground color is silvery-gray to reddish-gray with a velvety sheen. The Y mark is distinct and silvery; hindwings brownish with a darker border. Wing expanse is 36 to 40 mm. Larva is of varying shades of green, with a dark green dorsal line and a paler line of whitish-green on each side. Spiracular line yellowish edged above with green. Some larval forms have a number of white spots. Head with black markings. The larva of this species cannot be separated from larvae of several other species of the group that occur in the United States without a technical description. The cocoon is dirty-white.

(Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.)
CEIR 8(23) 6-6-58



Adult of Autographa gamma



VOL. 8 No. 24

JUNE 13, 1958

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Ent.

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 SECTION

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:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS critical on southeastern Colorado range and croplands and threatening to very severe in western Kansas where nymphs range to 1,000 per square yard. (p. 501). Heavy flights of EUROPEAN CORN BORER in Iowa and egg laying may extend into July in many areas of Illinois. (pp. 501, 502). CORN EARWORM heavy in parts of Georgia and Texas. CHINCH BUG heavy or damaging in Oklahoma, Kansas, Texas and Missouri. SAY STINK BUG control underway in Utah; may move to crops in Idaho. (p. 502).

ARMYWORM damaging in parts of Missouri and Indiana. Situation map for week of June 6. (p. 503). Control of ALFALFA WEEVIL necessary in several areas. Severe infestation of a CLOVER BUD CATERPILLAR in Grangeville area, Idaho. (p. 505). CUTWORMS damaging in several States. (p. 506).

BEEF LEAFHOPPER more numerous in Utah than any time since 1926. (p. 510). Third POTATO PSYLLID survey showed sharp decline in area checked. COLORADO POTATO BEETLE damaging in several States. (p. 511). MEXICAN BEAN BEETLE abundant and damaging on beans in southeastern States. (p. 513).

BOLL WEEVIL infesting squares in southern and central Georgia, light numbers in fields in several other States. (p. 514). BOLLWORMS heavy in Alabama and one Louisiana Parish, widespread in Georgia and South Carolina. (p. 515). COTTON FLEAHOPPERS increasing in Texas, Arizona and New Mexico. (p. 515).

SOUTHERN PINE BEETLE increasing in areas of Hardin County, Texas. (p. 517).

SCREW-WORM infestations in Wapello County, Iowa. (p. 520).

CORRECTIONS. (p. 521). ADDITIONAL NOTES. (p. 522).

INSECTS not known to occur in the United States. (p. 523).

List of COOPERATIVE SURVEY ENTOMOLOGISTS. (p. 525).

SURVEY METHODS (re-issued May 1958) now available upon request. This compilation includes separates that have been issued in the Cooperative Economic Insect Report.

Reports in this issue are for the week ending June 6 unless otherwise designated.

WEATHER OF THE WEEK ENDING JUNE 9

Cool, wet, and stormy in the North, and hot and dry in the central Great Plains and most of the South was last week's general weather pattern. Moderate to heavy, mostly frontal type, rains across the northern portion of the Nation virtually eliminated incipient drought conditions in the North Central Interior. At the end of the week the need for more moisture was limited to a few relatively small areas in this region, mainly west central and southwestern Iowa, and extreme north and northwestern sections of North Dakota. In a few areas crop improvement was limited owing to damage suffered from the dry weather in May. Rain benefits also were marred by local flooding. In the Rochester area of southeastern Minnesota, up to 5.50 inches of rain on the 4th caused minor flooding along the Cannon, Zumbro, and Root Rivers, which damaged crops, roads and bridges; and some flood damage was reported in northwestern and north central Wisconsin where Stanley reported over 4 inches. Numerous severe local storms occurred from the northern Rockies to the Ohio Valley and Great Lakes region, causing many casualties and an enormous amount of damage. Hail was the most common type of storm, although no outstanding single storm was reported.

On the evening of June 4, tornadoes in Saint Croix, Dunn, Chippewa, Clark, and Marathon Counties of Wisconsin left at least 28 persons dead, 350 injured, 105 homes destroyed and over 500 badly damaged; total property losses were estimated in the millions of dollars. Near St. Cloud, Minn., on the same evening, a tornado injured 2 persons, and damaged 25 homes and several lake cottages. Flood producing rains of 1 to 7 inches and damaging storms occurred in north central Indiana on the 8th and 9th. A tornado destroyed 3 business buildings and a farm home at Rensselaer. Another damaged a store at Newcastle. Lightning destroyed a factory valued at \$750,000 at Monon. Winds of over 100 m.p.h. destroyed 5 airplanes at the Richmond Airport. Flash floods were numerous, and 100 persons were evacuated at Kokomo. East of the Rockies frequent cold air invasions kept temperatures below normal most of the week in the Northeast where the last abnormally warm week occurred late in April. During the latter half of the week, freezing occurred locally in northern areas from New Jersey to North Dakota. On the 7th Hartford, Conn., recorded 38°, equaling the June low there. Crop damage was mostly minor. The week was 3° warmer than normal in south central areas and 6° to 9° in the central Great Plains. Daily maxima exceeded 90° and on some days the 100's were reached as far north as Kansas. The hot, dry weather aided by considerable wind in the Great Plains rapidly depleted surface soil moisture and rain is now needed in many local areas. (Summary supplied by U. S. Weather Bureau).

CEAREAL AND FORAGE INSECTS

GRASSHOPPERS - UTAH - Damaging alfalfa in several counties, hatch general. Trimerotropis pallidipennis adults more numerous than in many years. Determined by J. A. G. Rehn. (Knowlton). WASHINGTON - Nymphs causing light damage to pastures, Pend Orielle County. (Rice, May 30). OKLAHOMA - Average 10-100 per square yard, Ellis County roadsides. Marginal damage to wheat, Texas County. Generally light along southwestern roadsides. (Owens, Hudson). Damaging numbers on approximately three-fourths of Cimarron County rangeland. Entire county may be infested upon completion of hatch. (PPC). IDAHO - Appearing in increasing numbers in various areas at lower elevations. Third and fourth-instar Oedaleonotus enigma in desert areas, Jerome, Twin Falls and Gooding Counties. Trimerotropis pallidipennis relatively abundant and earlier than usual in many desert areas. Melanoplus bilituratus hatching well underway in breaks along rim of lower Clearwater River Valley. (Smith, Evans). COLORADO - Situation critical on rangeland and croplands in areas of Cheyenne, Kiowa, Lincoln, Prowers and Kit Carson Counties, with M. bilituratus dominant. Hatching about complete, many in fourth instar. (ARS). KANSAS - Threatening to very severe over western three-fourths of State, heaviest in western half where nymphs range to highs of 1,000 per square yard in many localized areas. Controls needed for protection of crops and pastures. Considerable interest in cooperative control; county meetings scheduled and survey in progress to determine true situation. (Matthew). NEW MEXICO - Numerous in southern alfalfa and grain fields, but causing little damage. (N. Mex. Coop. Rpt.). ILLINOIS - Nymphs of Melanoplus spp. range 0-120 per 100 sweeps in grass, heaviest in west. (Ill. Ins. Rpt.). MINNESOTA - Hatching continues in northwestern areas, with movement into lush grain fields noted. Some second instars. Very light hatches in alfalfa and hay land. (Minn. Ins. Rpt.). WISCONSIN - No nymphs seen in southeastern counties, but some in Manitowoc, Door and Marinette Counties and a few in most counties with light soil. (Wis. Coop. Sur.). SOUTH DAKOTA - M. bivittatus and M. bilituratus nymphs averaged 8 per square yard in alfalfa and 30 in field margins in Perkins, Union and Clay Counties. (Burge, Hantsbarger). NORTH DAKOTA - Scattered light to threatening in Bottineau, Renville, Ward, McHenry and Pierce Counties with little crop damage. Also threatening in Halliday-Dodge area. Not as heavy in roadsides as in 1957, but more common in stubble fields. M. bivittatus dominant species, followed by M. bilituratus. First to third instars. (N. D. Ins. Rpt.). Continue spotty in western counties, heavy in some locations and generally severe in Divide County. Damage to small grains and control underway. M. bivittatus range from first to fourth instar. (Burge, King, PPC). TEXAS - Severe along roadsides, etc., in 14 northern panhandle counties, with treatment in several. (Texas, PPC). MISSOURI - Hatch well underway. Not expecting too much trouble, except in small isolated spots. (Kyd, Thomas).

MORMON CRICKET (Anabrus simplex) - UTAH - Hatched in two areas on Diamond Mountain, Uintah County. (Thornley, Knowlton).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Many adults in central and southern areas. Some fresh egg masses on sweet corn, June 2. (Ins. Dis. Newsl.). KANSAS - Egg laying begun in east central area with 4-68 egg masses per 100 plants. Some fields show up to 16 percent whorl feeding. Controls may be needed in some earlier planted fields. (Matthew). ALABAMA - Moth emergence 90 percent and young larvae heavy on early planted corn. (Eden). DELAWARE - Early instars entering leaves of early sweet corn, southern Sussex County. (MacCreary, Conrad). NEBRASKA - Pupation 74.4 percent in Platte Valley with 21.1 percent emergence, and 72.1 in northeast with 14.2 percent emergence. (Andersen). SOUTH DAKOTA - Pupation near completion in southeastern area, 65 percent in east central and 37 in northeast areas. (Hantsbarger). IOWA - Heavy flights May 29-30, then decreased but adults active again June 6. Egg masses abundant in leaf whorls of sweet corn at Muscatine, June 5. (Iowa Ins. Inf.). VIRGINIA - Averaged 2 per 100 plants in one of two corn fields surveyed, Greensville County. (Morris). OHIO - At Toledo, pupation 80 percent June 5 with no emergence evident. At Columbus 70 percent pupation,

first adult emergence and oviposition on early sweet corn, June 2. (Triplehorn). ILLINOIS - Pupation complete in southern area, emergence underway. Pupation ranges 25-50 percent in north to 50-100 percent in central sections, with trace of emergence in both areas. Moth emergence and egg-laying apparently may cover a long period, extending well into July in many areas. (Ill. Ins. Rpt.). MISSOURI - Egg laying begun in northern half of State, counts running 250-325 egg masses per 100 stalks. Counts indicate only about 60 percent of overwintering borers have emerged, thus egg laying will continue for at least another 10 days. (Kyd, Thomas).

CORN EARWORM (*Heliothis zea*) - OKLAHOMA - About 10 percent of corn shows damage, Bixby area, Tulsa County. (Arbutnot). COLORADO - First adults taken in Baca County, May 18-19. (Exp. Sta.). NEW MEXICO - Eggs light to heavy in whorls of corn, few larvae beginning to feed, Dona Ana County. (N. Mex. Coop. Rpt.). ALABAMA - Moderate on corn, Marshall County. (Grimes). GEORGIA - Heavy in whorls of field corn, Johnson and Terrell Counties. (Garner, Harris). TEXAS - Heavy in whorls of corn, north central area (Chada) and light on grain sorghum, Burleson County (Randolph). NORTH CAROLINA - Up to 5 percent of whorls of field corn infested, Robeson County, infestation general. (Scott). Averaged 1-9 eggs per silk on sweet corn, Duplin County. (Farrier). VIRGINIA - *Heliothis* sp. averaged 2 per 100 plants in one of 3 corn fields surveyed in Greensville County. (Morris).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - NEBRASKA - Approximately 95 percent pupated, heavy flights expected about June 15 from North Platte west. (Pruess).

CHINCH BUG (*Blissus leucopterus*) - OKLAHOMA - Early instar nymphs heavy in corn, most central and east central counties. (Arbutnot). From 10-18 per corn stalk, parts of northeast, and numerous in some wheat fields. (Campbell). ILLINOIS - None in most fields, but 8 per linear foot in one field of thin wheat in central section. (Ill. Ins. Rpt.). KANSAS - Adults causing damage to some east central and southeastern corn and sorghum fields. Nymphs active and found as far north as Wyandotte County. (Matthew). TEXAS - Heavy on corn, Hunt County. (Hawkins). MISSOURI - Heavy numbers continue damaging corn and grain sorghums over west central and southwest areas. Migration from barley and rye fields well underway. Control being applied in infested areas. (Kyd, Thomas).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - ILLINOIS - Average 0-6 per plant in corn, southern half of State. (Ill. Ins. Rpt.). TEXAS - Decreased rapidly but damage was severe on replanted corn in north central area. (Chada). NEW YORK - Counts increased on sweet corn in Hudson Valley. (N. Y. Wkly. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - TEXAS - In practically 100 percent of whorls of corn and grain sorghum, north central area. (Chada).

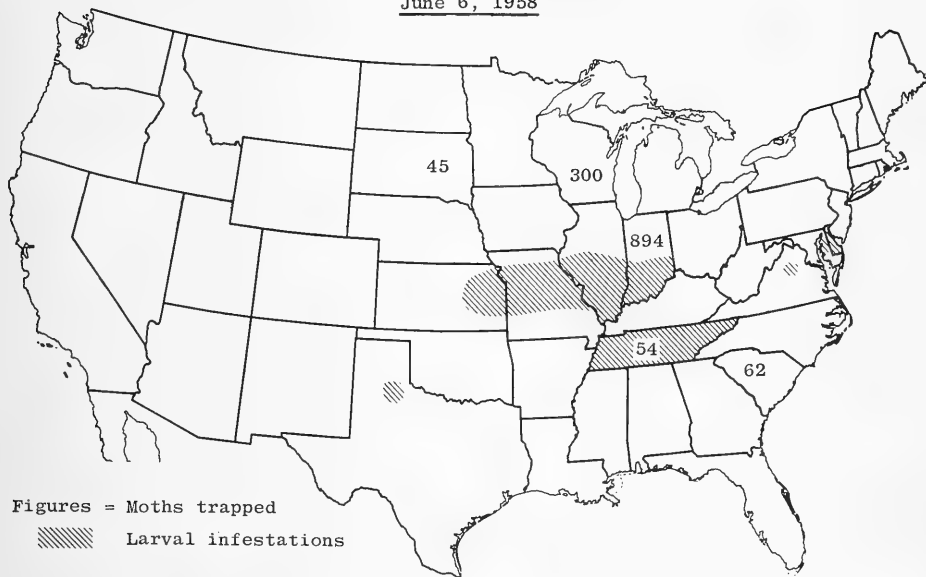
BROWN WHEAT MITE (*Petrobia latens*) - UTAH - Damaging in parts of Sanpète, Juab and San Juan Counties. In combination with Say stink bug and a leafhopper, is creating serious situations in many fields. (Knowlton).

DIAMONDBACK MOTH (*Plutella maculipennis*) - CALIFORNIA - Larvae light on wheat at Bryson, Monterey County. Determined by G. Okumura. (Cal. Coop. Rpt., May 9).

FALL ARMYWORM (*Laphygma frugiperda*) - OKLAHOMA - Larvae appearing in central and east central alfalfa, with up to 4 per 10 sweeps in Tulsa County. (Coppock). LOUISIANA - Heavy on corn in 2 fields, East Carroll Parish. (Spink).

SAY STINK BUG (*Chlorochroa sayi*) - UTAH - Large flights observed in several counties over State. Spraying underway in Davis, Millard, Washington, Juab and Uintah Counties. Several thousand acres of wheat already treated. (Knowlton). Very serious in fields of grain, alfalfa and other crops, Utah County. Spraying begun. (Hutchings). IDAHO - Adults reaching 33 per square yard and feeding on pepperweed in Rift River Valley. As desert hosts dry, pest may move into crop areas. (Barr).

Armyworm Situation as Reported Week Ending
June 6, 1958



Figures = Moths trapped

▨ Larval infestations

ARMYWORM (*Pseudaletia unipuncta*) - KANSAS - Light to heavy in small grains in east central counties, up to 12 per square foot under lodged barley. Small amount of head clipping on barley. About 10 percent of larvae parasitized. (Matthew). **MINNESOTA** - No evidence in northwestern district except considerable numbers of adults in light trap collections at Fergus Falls. (Minn. Ins. Rpt.). **MISSOURI** - Larvae moderate to heavy, with slight to severe damage to small grains and improved pastures over central third of State. Average 2-22 per square foot of barley and wheat. Severe head clipping in some barley fields, just beginning in some wheat fields. Averaged 1-18 per square foot in fescue, brome and orchard grass pastures. Some damage to small corn and other crops adjoining heavily infested small grains or pastures. Parasitism very heavy on larger larvae, diseases reducing numbers in all fields. Much control being applied. (Kyd, Thomas). **IOWA** - Average 20 per night in Kossuth County light trap, lighter catch at Ames. (Iowa Ins. Inf.). **ILLINOIS** - In wheat, rye and barley, 0-3 per linear foot of row in central and western sections, 0-5 in east southeast and southeast. In oats, 0-60 per 100 sweeps in western section. (Ill. Ins. Rpt.). **INDIANA** - In numerous areas throughout southern half of State. Most severe damage has been to young corn in fields that contained rank growth of grass prior to plowing and preparation of seed bed. Barley also extensively damaged in some areas. (Lehker). **TEXAS** - Feeding on small grains in Motley County. (Pallmeyer). **VIRGINIA** - Averaged 8-10 very young larvae per square foot in some small grains, Culpeper County. (Heltzel). **TENNESSEE** - General in small grains over State, but not in sufficient numbers to cause particular damage. (Mullet, May 31). **MARYLAND** - Larvae moderate in small grain fields in Dorchester County, with little damage to June 5. (U. Md., Ent. Dept.). **DELAWARE** - Various sized larvae present statewide. Barley most common host. (MacCreary, Conrad).

ENGLISH GRAIN APHID (Macrosiphum granarium) - WASHINGTON - On wheat at Quincy, Grant County. (Landis, May 30). ILLINOIS - Varied 200-1,840 per 100 sweeps in wheat in central section and 130-350 in western section and 0-22 per head in east southeast. Varied 160-5,600 per 100 sweeps in oats in northwest, west and central sections. (Ill. Ins. Rpt.). MINNESOTA - Averaged 42 per 10 sweeps in Pennington County rye and 5 per 10 sweeps on small grain in Marshall County. (Minn. Ins. Rpt.). WISCONSIN - Small colonies frequently found. Several attacked by hymenopterous parasites. (Wis. Coop. Sur.). SOUTH DAKOTA - Averaged 0-10 per sweep in parts of Cass County. (N. D. Ins. Rpt.).

SEED-CORN MAGGOT (Hylemya cilicrura) - DELAWARE - Damaging corn in Sussex County. (MacCreary, Conrad). WISCONSIN - Moderate numbers in Eau Claire County. (Wis. Coop. Sur.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ILLINOIS - Adults feeding on corn in western areas, with 0-10 percent of plants showing damage. Averaged one adult per damaged plant. (Ill. Ins. Rpt.). SOUTH DAKOTA - Adults appearing on alfalfa bloom averaged 1 per 10 sweeps in southeast areas. (Hantsbarger).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Heavy on corn, St. Martin and East Baton Rouge Parishes. (Spink).

WIREWORMS - WISCONSIN - Damage, some serious, to small grain by heavy but spotty populations reported from Clark, Lincoln and Wood Counties. (Wis. Coop. Sur.).

LEAFHOPPERS - UTAH - Dikraneura carneola well above normal, causing some damage to wheat and barley in Juab, Millard and Salt Lake Counties. (Knowlton). ARIZONA - Several species increasing in numbers in Graham County alfalfa fields. Causing considerable damage to bermuda, dichondra and clover plantings. (Miller). MINNESOTA - Macrosteles fascifrons averaged 0-1 per 50 sweeps in grain and alfalfa and 20 per 10 sweeps in ditch banks in northwestern area. (Minn. Ins. Rpt.). WISCONSIN - M. fascifrons quite general in southern counties. (Wis. Coop. Sur.).

CORN ROOT APHID (Anuraphis maidi-radicis) - MARYLAND - Light to moderate on field corn, Harford County. (U. Md., Ent. Dept.). MISSOURI - A few corn fields over northwest area show spots yellowed and dwarfed. Root examination showed 20-55 per plant. (Kyd, Thomas).

BEEF ARMYWORM (Laphygma exigua) - NEVADA - Damaging corn in Fallon area, Churchill County. Treatment being applied. (Galloway, York, May 30). CALIFORNIA - Medium on corn in Hanford area, Kings County. (Cal. Coop. Rpt.). NEW MEXICO - Adults abundant in Dona Ana County corn fields and eggs numerous. (N. Mex. Coop. Rpt.).

BILLBUGS - GEORGIA - Heavy in corn in Baker County (Beckham, May 31) and in Berrien County (Wood, June 3). IOWA - Destroyed corn on slough ground, Mahaska County. (Iowa Ins. Inf.).

ALFALFA CATERPILLAR (Colias philodice eurythema) - UTAH - General but rarely conspicuous. (Knowlton). ILLINOIS - Averaged 0-20 per 100 sweeps in clover and alfalfa in northern half of State. (Ill. Ins. Rpt.). TEXAS - Averaged 1-3 per 5 sweeps in Burleson County alfalfa. (Randolph).

CLOVER APHID (Anuraphis bakeri) - IDAHO - Appearing in many red clover seed fields sampled in Canyon County. (Waters).

CLOVER HEAD CATERPILLAR (Grapholitha interstinctana) - ILLINOIS - Varies 0-20 per 100 sweeps, northern half of State. (Ill. Ins. Rpt.).

ALFALFA WEEVIL (Hypera postica) - UTAH - Damage spotted, sometimes severe, in several counties. Controls applied in several areas. (Knowlton). NEVADA - Damage moderate to many fields in Douglas County (Bechtel, Roberts, May 30) and severe to untreated fields in Lovelock area, Pershing County. (Bechtel, May 30). NEW JERSEY - Larvae very numerous in central and northern areas. (Ins. Dis. Newsl.). IDAHO - Larvae 10-25 per sweep in some southwestern alfalfa fields. (Waters). Heavy larval damage to some untreated alfalfa fields in Grangeville area. (Cook). COLORADO - Heavy in unsprayed fields with 200-400 larvae per 100 sweeps in Delta, Garfield, Larimer and Boulder Counties. Damage to first-cutting alfalfa. (Exp. Sta.). NEBRASKA - Larvae appearing in pan-handle counties and in Lincoln County averaged 18 per 100 sweeps. (Pruess). GEORGIA - Moderate on alfalfa, Putnam County. (Johnson). NORTH CAROLINA - Found in one of 23 fields examined, Watauga County. (Tuckwiller). VIRGINIA - Damaging alfalfa in some parts of State, primarily in northern areas. (Morris). PENNSYLVANIA - Larval damage to second-crop alfalfa, spraying necessary in south central area (Pepper), severe on second-cutting and spraying necessary on first-cutting stubble, Juniata County (Udine) and damage severe on unsprayed alfalfa in southeastern area (Menusan). NEW YORK - Light to fairly severe injury to 8 alfalfa fields in Dutchess County. Some pupae found. Some fields in Orange County severely injured with most of top leaves badly riddled. (N. Y. Wkly. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Continues light in east central area, not exceeding 100 per 10 sweeps in most fields. (Coppock). CALIFORNIA - More scarce from Kings County southward than since reported on alfalfa in 1954. (Van der Bosch). COLORADO - None reported to date. (Exp. Sta.). ILLINOIS - None found to date. (Ill. Ins. Rpt.). NEW MEXICO - Decreased considerably in southern counties since cutting of first-crop hay. (N. Mex. Coop. Rpt.). TEXAS - Very light in north central alfalfa. (Chada). VIRGINIA - Three per 100 sweeps on alfalfa in one field, Pittsylvania County, one per 100 sweeps in one of two fields, Mecklenburg County. (Morris).

ALFALFA LOOPER (Autographa californica) - CALIFORNIA - Larvae medium on wheat at Ducor, Tulare County. Determined by George Okumura. (Cal. Coop. Rpt., May 9). IDAHO - Generally abundant in clover fields in Latah, Clearwater, Nez Perce, Lewis and Idaho Counties. Larvae often reached 5 or more per sweep. (Cook, Kambitsch, Gittins). SOUTH DAKOTA - As high as one larva per 10 sweeps in alfalfa in east central and southeast areas. (Hantsbarger).

BLISTER BEETLES (Epicauta spp.) - NEW MEXICO - Heavy, spotty and damaging alfalfa at Gila, Grant County. (N. Mex. Coop. Rpt.). SOUTH DAKOTA - E. fabricii averaged up to 7 beetles per 10 sweeps in some alfalfa fields, Grant County. (Hantsbarger). NORTH DAKOTA - Heavy in alfalfa, parts of Morton, Oliver and Mercer Counties. Tip injury light. (N. D. Ins. Rpt.).

A CLOVER BUD CATERPILLAR (Grapholitha conversana) - IDAHO - Infestations have developed in clover seed fields over a wide area from Grangeville north to Deary, west to Lewiston and east to above Stites, being most severe in a 10-mile area north of Grangeville where some 700 acres have been severely damaged. One 70-acre white clover seed field sustained more than a 90 percent loss in yield. Infestations in heads up to 15 percent elsewhere, with alsike more heavily infested than white clover. (Gittins, Cook).

CLOVER HEAD WEEVIL (Tychius stephensi) - ILLINOIS - Taken in Whiteside County June 4, a new county record. (Ill. Ins. Rpt.).

A CLOVER WEEVIL (Hypera meles) - ALABAMA - Causing moderate damage to white clover in Wilcox County. Has caused severe damage to clovers in the State this year. (Grimes).

CLOVER SEED CHALCID (Bruchophagus gibbus) - IDAHO - In Canyon County red clover at 2-10 per sweep. (Waters).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - IDAHO - Generally moderate to abundant, often 5-10 adults per sweep in untreated alsike and white clover fields, Idaho, Clearwater, Lewis, Nez Perce and Latah Counties. (Gittins).

GREEN CLOVERWORM (Plathypena scabra) - NEBRASKA - Averaged 19 per 100 sweeps in alfalfa in southeast area. (Andersen).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - IDAHO - Larvae common, occasionally abundant in heads of alsike and white clover in many areas of Lewis, Clearwater, Nez Perce, Idaho and Latah Counties. (Gittins, Cook, Kambitsch).

ILLINOIS - Adults vary 0-60 per 100 sweeps in northern half of State, nearly all being newly emerged. (Ill. Ins. Rpt.). DELAWARE - Common on red clover, New Castle and Kent Counties. (MacCreary, Conrad).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - ILLINOIS - Adults emerging in northern areas. Averaged 90 nymphs and 10 adults per 100 sweeps in Whiteside County. (Ill. Ins. Rpt.). WISCONSIN - Over one per stem in alfalfa, Racine, Manitowoc, Grant and Lafayette Counties. Higher in some fields and averages almost this high in many counties. (Wis. Coop. Sur.). VIRGINIA - Adults averaged 4 per 100 sweeps in an alfalfa field in Pittsylvania County. (Morris). Adults appearing in large numbers, no damage to second-cutting anticipated. (Woodside). PENNSYLVANIA - Ten to 20 percent adults in legumes, southeastern area. (Menusan). Adults appearing in legumes in south central area. (Pepper). Much heavier in southwest than originally thought. (Udine). OHIO - Adults first taken June 4 at Wooster, 3 per 200 sweeps. Spittle masses on 30 percent of oat stems where oats followed soybeans, Lorain County. (Treece).

SPITTLEBUGS - IDAHO - Nymphs common, approaching abundant in alfalfa and clover fields in many areas. (Cook, Gittins).

CUTWORMS - VIRGINIA - Damaged 100-150 acres of corn in Northumberland county, crop completely destroyed on a few acres. (Saville). Sixty acres of corn replanted in Lancaster County. (McSwain). NORTH CAROLINA - Agrotis ypsilon damaging large corn acreages following sod in Cherokee and Macon Counties. (Nave, Wrinn, Rabb). ILLINOIS - Damaged 0-25 percent of plants in some southeastern corn fields, with as many as 3 per hill. (Ill. Ins. Rpt.). INDIANA - A. ypsilon has damaged corn in Posey County and other river bottom areas. Peridroma margaritosa unusually abundant in pasture and legume fields throughout State. (Lehker). WISCONSIN - Several counties report damage to corn and truck crops and heavy populations. (Wis. Coop. Rpt.). SOUTH DAKOTA - P. margaritosa averaged up to one larva per 50 sweeps in scattered alfalfa fields in southeastern area. (Hantsbarger). NEBRASKA - P. margaritosa moderate to heavy in southeastern alfalfa fields with up to 50 per 100 sweeps. (Andersen). Agrotis orthogonia averaged 1 per 25 feet of drill row, Box Butte and Keith Counties. (Pruess). MISSOURI - P. margaritosa moderate to heavy, damaging alfalfa, red clover, pastures, gardens and flower beds over much of State, with 2-8 larvae per square foot of alfalfa and red clover and 0.5-3 in improved pastures. (Kyd, Thomas). IDAHO - Damage to young corn field in Melba area severe enough to warrant control. (Barr). KANSAS - P. margaritosa very heavy in many central and south central alfalfa fields. Extreme damage in home gardens. Up to 20 larvae per square foot under bales and alfalfa hay in fields. At least half of population shows parasitism. (Matthew). TEXAS - A large flight was observed in Bushland area, Potter County. (Daniels).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - WASHINGTON - Considerable sweet-clover acreage in Palouse area prematurely plowed under due to damage, with acreage being drastically reduced due to weevils. Future of sweetclover as green manure crop in eastern Washington is doubtful. (Telford).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Averaged 5-10 per 5 sweeps on alfalfa, Burleson County. (Randolph).

PEA APHID (Macrosiphum pisi) - OKLAHOMA - Reduced throughout State in harvested alfalfa, with often several thousand per 10 sweeps in unharvested fields. (Coppock). COLORADO - Building up in Montrose, Mesa, Delta and Garfield Counties, and averaged 200 per 100 sweeps in Larimer County. (Exp. Sta.). ILLINOIS - Ranged 90-20,000 per 100 sweeps in clover and alfalfa fields, heaviest west. (Ill. Ins. Rpt.). DELAWARE - Numerous on legumes. (MacCreary, Conrad). NEBRASKA - Heavy in southeast area, up to 4,847 per 100 sweeps. (Andersen). WISCONSIN - Counts in alfalfa ranged 1-28 per sweep in some 20 counties. (Wis. Ins. Sur.). SOUTH DAKOTA - Heavy throughout eastern alfalfa, with hundreds per sweep in some southeastern fields. (Hantsbarger). TEXAS - Averaged 500-1,600 per 5 sweeps on alfalfa, Burleson County. (Randolph). VIRGINIA - Approximately 25 to 75 per sweep in some southern alfalfa. (Morris). PENNSYLVANIA - Building up in southeastern area, may need protective sprays on new alfalfa. (Menusan). Very abundant in Juniata County and southwest areas, cutting in process. (Udine). MISSOURI - Heavy numbers persist on alfalfa over much of northern half of State. Range from 55 to well over 1,000 per sweep on uncut alfalfa as well as on new growth following first cutting in northwest. In some fields, 75-85 percent of aphids show evidence of fungus disease. (Kyd, Thomas).

LYGUS BUGS (Lygus spp.) - MICHIGAN - L. lineolaris very numerous at Kewadin, Atwood and Williamsburg. (Hutson, May 28). UTAH - Injury to alfalfa buds in some fields, Millard, Uintah and Duchesne Counties. (Knowlton). IDAHO - Nymphs common, often exceedingly abundant, in white and alsike clovers in many areas of Idaho, Clearwater, Lewis, Nez Perce and Latah Counties, with 10 per sweep in some fields sampled. (Gittins). ILLINOIS - L. lineolaris adults averaged 93 per 100 sweeps in northwestern clover and alfalfa and 40 in central and western sections. (Ill. Ins. Rpt.). ARIZONA - Building up steadily in Graham County. Populations in Pinal County very large this year compared to past years. (Miller). NEW MEXICO - L. elisus and L. hesperus adults and nymphs abundant in southern county alfalfa fields. Some damage to alfalfa seed, Dona Ana County. (N. Mex. Coop. Rpt.). DELAWARE - L. lineolaris nymphs and adults prevalent. (MacCreary, Conrad). OREGON - L. elisus and L. hesperus required control in Umapine-Milton-Freewater area, June 1. (Stephen). NEBRASKA - Adult L. lineolaris numbers decreasing somewhat, 89 per 100 sweeps. Nymphs heavy, averaged 362 per 100 sweeps in southeast area. (Andersen). WISCONSIN - L. lineolaris early-instar nymphs plentiful. (Wis. Coop. Sur.). SOUTH DAKOTA - Averaged 35 nymphs and adults per 10 sweeps in southeastern alfalfa. (Hantsbarger). TEXAS - In alfalfa at 1-5 per 5 sweeps, Burleson County. (Randolph).

PLANT BUGS - ILLINOIS - Adelphocoris lineolatus adults averaged 15 per 100 sweeps in central area; A. rapidus 52 in northwestern clover and alfalfa, 62 in western and 70 in central sections. Nymphs of several species in clover and alfalfa averaged 483 in northwest, 322 in west and 543 in central sections. (Ill. Ins. Rpt.). KANSAS - A. lineolatus in moderate numbers, 7-85 per 25 sweeps, in alfalfa fields in 7 east central counties. (Matthew). DELAWARE - A. rapidus adults fairly common on legumes in Kent and Sussex Counties. (MacCreary, Conrad). NEBRASKA - A. lineolatus adults and nymphs moderate in southeast area, averaged 53 adults and 121 nymphs per 100 sweeps. (Andersen). WISCONSIN - Nymphs have developed rather rapidly with some fourth and fifth instars seen. (Wis. Coop. Sur.). SOUTH DAKOTA - Nymphs and adults of A. lineolatus averaged 14 per 10 sweeps on alfalfa, eastern areas. (Hantsbarger).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Heavy and damaging clover plantings in Rosedale area, Kern County. (Cal. Coop. Rpt.). IDAHO - Building up rapidly on white clover near Mountain Home. (Edwards).

VETCH BRUCHID (*Bruchus brachialis*) - MICHIGAN - Numerous at Jackson, Centerville, Grand Rapids, St. Joseph and Kalamazoo. (Hutson, May 29). KANSAS - Averaged 7 per 25 sweeps from roadside vetch plants in Franklin County. (Matthew).

POTATO LEAFHOPPER (*Empoasca fabae*) - ILLINOIS - Adults in clover and alfalfa averaged 27 per 100 sweeps in northwestern section, 50 in western and 63 in central sections. (Ill. Ins. Rpt.). WISCONSIN - General in southern counties. Averaged 10-15 per 100 sweeps in Hancock area. (Wis. Coop. Sur.). SOUTH DAKOTA - Light in southeastern alfalfa fields, approximately 1 per 50 sweeps. (Hantsbarger). NORTH DAKOTA - One specimen, believed to be this species, collected on caragana hedge in Fargo area June 6, about two weeks earlier than in 1957. (N. D. Ins. Rpt.). VIRGINIA - On alfalfa averaged 5 per 100 sweeps in 2 Southampton County fields and 15 in one of 2 Mecklenburg County fields. (Morris). PENNSYLVANIA - One adult per 50 sweeps on alfalfa in southeastern area. (Menusan). None found on northeastern alfalfa (Gesell). OHIO - Adults scarce on forage crops. (Treece).

WEBWORMS - KANSAS - High numbers of adult *Loxostege* spp. taken in Finney County light trap. Few *L. similalis* appearing in alfalfa fields in east central counties, averaged about 2 per 25 sweeps. (Matthew). TEXAS - *Loxostege* spp. averaged 4-9 per 5 sweeps on alfalfa, Burleson County. (Randolph). IOWA - *L. similalis* common in southern areas, few in central. (Iowa Ins. Inf.).

YELLOW CLOVER APHID (*Therioaphis trifolii*) - ILLINOIS - Averaged 1,000 per 100 sweeps in red clover in northern half of State. (Ill. Ins. Rpt.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - SOUTH CAROLINA - Developing more slowly on soybeans than on adjacent snap beans. Larvae present in Colleton, Allendale, Berkeley and Orangeburg Counties. (Nettles et al.).

RED-NECKED PEANUTWORM (*Stegasta basqueella*) - OKLAHOMA - On volunteer peanut foliage, one field, Caddo County. (Walton). GEORGIA - Light to moderate on peanuts in several counties. (Johnson).

THRIPS - OKLAHOMA - Moderate, with damage to scattered peanut fields, Caddo, Garvin and Payne Counties. (Walton). NEW MEXICO - *Frankliniella occidentalis* heavy in Dona Ana County alfalfa seed fields. (N. Mex. Coop. Rpt.). GEORGIA - Heavy on peanuts in several counties. (Johnson). MISSISSIPPI - Immature forms on peanut plants from Perry County. Injury evidently by these insects. (Hutchins). TEXAS - Feeding on peanuts in Lavaca County. (Turney).

FALSE CHINCH BUG (*Nysius ericae*) - IDAHO - Large numbers of adults moving from dried weed hosts to crops in areas of Elmore County. (Edwards).

A LEAF-CUTTING ANT - ALABAMA - Caused moderate damage in De Kalb County pastures. (Grimes).

SAGEBRUSH DEFOLIATOR (*Aroga websteri*) - IDAHO - Larvae general on sagebrush in many areas of salt desert shrub type throughout State. (Barr).

A TORTRICID (*Synnoma lynosurana*) - IDAHO - Larvae active on rabbitbrush in Gooding-Shoshone area. (Barr).

GARDEN SLUGS - NORTH DAKOTA - Extremely heavy in some lawns and gardens at Fargo. (N. D. Ins. Rpt.).

FRUIT INSECTS

APHIDS - UTAH - Infestations of Aphis pomi and Anuraphis roseus above normal in several areas. Eriosoma lanigerum sometimes conspicuous on apples. (Knowlton). INDIANA - A. roseus has caused more damage to apples at Vincennes than any other insect. (Hamilton). MICHIGAN - Myzus cerasi appearing at Traverse City. (Hutson, May 27). ARIZONA - Light to heavy E. lanigerum infestations appearing on apple trees in Graham County. (Miller). OHIO - Heavy infestations of A. roseus in some orchards. (Cutright).

PLUM CURCULIO (Conotrachelus nenuphar) - INDIANA - Activity leveled off in Vincennes area. (Hamilton). MINNESOTA - Feeding and punctures found on apples and plums not treated. (Minn. Ins. Rpt.). GEORGIA - New adults began emerging from soil on June 3 at Fort Valley. (Snapp). OHIO - Active in unsprayed apples. Egg punctures numerous. (Cutright). Populations declining on stone fruits. Infested fruit beginning to drop. (Rings).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Potentially a greater threat than last year in Vincennes. (Hamilton). ILLINOIS - Second-generation moths emerging May 31 at Carbondale. Hatching of second brood expected to be prolonged. (Meyer). WISCONSIN - Moderate populations of adults in Door County orchards. Some eggs hatched. (Wis. Coop. Sur., May 24). PENNSYLVANIA - Larvae, all stages, and pupae on apple in south central area. (Pepper).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - OHIO - Populations of first-brood larvae higher than for several years in northern area. (Rings).

PEACH TWIG BORER (Anarsia lineatella) - OREGON - Appearing in larger than usual numbers in bait traps in Willamette Valley, week of June 1. (Larson).

PEAR PSYLLA (Psylla pyricola) - IDAHO - Infestation in pear orchard at Filer, Twin Falls County. First known record of occurrence in area of State. (T.F.F.S.).

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Heavy infestations on apples in Bakersfield, Kern County. (Cal. Coop. Rpt.). WISCONSIN - Light numbers of larvae present in Door County orchards. (Wis. Ins. Sur., May 24). MICHIGAN - Adults emerging June 2 at Grand Rapids, Coloma and Sodus. (Hutson). ILLINOIS - Hatch reached peak about May 30-June 2 at Carbondale. (Meyer). INDIANA - First entries noted May 29 at Vincennes, but scarce. (Hamilton). OHIO - About 70 percent emergence in cages. No entrances to June 6. (Cutright). PENNSYLVANIA - Larval entrances on unsprayed apple trees in south central area. (Pepper). DELAWARE - Nearly 60 percent emergence by June 3 from cage in Kent County. Largest number (30) emerged June 1. (MacCreary, Conrad). NEW JERSEY - Entries in apple plentiful from Burlington County south. Unsprayed apples have 2-3 entries many places. (Ins. Dis. Newsl.).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - MICHIGAN - Pupated in Benton Harbor, Coloma and Grand Rapids. (Hutson, May 27). WISCONSIN - Moderate to heavy numbers of larvae in Door County orchards. (Wis. Coop. Sur., May 24).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - OHIO - Populations increasing rapidly in peach orchards in Wooster area. (Rings).

EUROPEAN RED MITE (Panonychus ulmi) - ILLINOIS - Third generation beginning at Carbondale. Populations generally light where dormant treatments applied. (Meyer). WISCONSIN - Populations moderate in Door County orchards. (Wis. Coop. Sur., May 24). OHIO - Increasing slowly in peach orchards not receiving early season spray. (Rings).

CHERRY FRUITWORM (Grapholitha packardii) - NEW JERSEY - Egg laying heavy. First entries noted. (Ins. Dis. Newsl.).

CHERRY FRUIT FLY (*Rhagoletis cingulata*) - PENNSYLVANIA - Starting to emerge on cherries in Erie County June 4. (Cox).

BLACK CHERRY FRUIT FLY (*Rhagoletis fausta*) - IDAHO - Adult trapped on sticky-board in commercial orchard at Twin Falls. (T.F.F.S.).

CATFACING INSECTS - OHIO - *Neolygus omnivagus* and *N. caryae* maturing and migrating into peach orchards in northern area. First adults on June 2. (Rings).

BLACK-HEADED FIREWORM (*Rhopobota naevana*) - WISCONSIN - Light infestations in 500 acres of cranberry bogs in central and northwestern area. Hatching begun May 23-24. About 10 percent of acreage in central area infested and about 5 percent infested in northwestern area. (Wis. Coop. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - LOUISIANA - Heavy infestations on pecans in East Baton Rouge Parish, medium in greater New Orleans area and light in St. Landry Parish. (Spink). ALABAMA - Increasing in central area. (Grimes) GEORGIA - Light on pecan trees throughout southern area. (Johnson).

A WALNUT CATERPILLAR (*Datana* sp.) - TEXAS - Heavy on pecan in Gonzales, Guadalupe, San Saba and Erath Counties. (Turney).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - OKLAHOMA - Hatching underway. Percent of native and improved pecan varieties having eggs 0 to 26 with highest percentages in Lincoln, Pottawatomie and Okfuskee Counties. (Whitehead, Flora, Hinrichs, Coppock). ALABAMA - Heavy infestations in Dallas County. Two-thirds to three-fourths of crop damaged, many nuts fallen. (Grimes). TEXAS - First-generation larvae nearly full grown in Gonzales and Guadalupe Counties. (Turney).

CIGAR CASEBEARER (*Coleophora occidentis*) - ALABAMA - Moderate to heavy infestations on pecans in Bibb County. (Grimes).

Nut Insect Survey in Oklahoma - Eggs of WALNUT CATERPILLAR hatching in central and east central counties, more abundant than usual on pecan and walnut. A PECAN PHYLLXERA (*Phylloxera notabilis*) is common on pecans and A WALNUT CURCULIO (*Conotrachelus retentus*) is severe in improved walnuts in one grove in Okfuskee County. (Coppock). A PECAN CATOCALA (*Catocala maestosa*) generally light on pecan throughout State. Defoliating persimmon in Stillwater area. (Bieberdorf, Coppock).

TRUCK CROP INSECTS

Beet Leafhopper Situation in Utah, Colorado and Nevada as of June 2, 1958 - The long distance spring movement of beet leafhopper to Utah, Nevada and Colorado cultivated districts of sugar beets and tomatoes started May 6 and reached peak of 1.03 per square foot by May 18. From May 21 to 30 a larger influx occurred to increase the population to 4.7 per square foot of beet row. This is larger than has been recorded since the beginning of Utah studies in 1927. The population has exceeded the 1940 count of 1.7 per square foot of beet row and probably was more similar to that recorded in 1926. In that year the damage to non-resistant sugar beets and tomatoes was serious. The leafhopper population per square foot of sugar beet row recorded this year is as follows: Cache County 1.6; Box Elder County 5.2; Davis and Weber Counties 5.4; Salt Lake and Utah Counties 4.2; Sevier County 4.9; Mesa County, Colorado 5.0; and Churchill County, Nevada 6.5. (Dorst).

BEEF LEAFHOPPER (*Circulifer tenellus*) - NEVADA - Averaged 6.0 per square foot of beet row in Fallon, Churchill County. Most specimens summer form. (Dorst, Gallaway, May 30). ARIZONA - Numbers very apparent with many tomato plants already affected by curly top in Pinal County. (Miller). UTAH - More numerous

in State now than it has been at this time, any year since 1926. (Dorst, Knowlton).

BEEET WEBWORM (Loxostege sticticalis) - COLORADO - Very large numbers of adults continue throughout State. Eggs 3-8 per plant in Montrose, Delta and Mesa Counties. Larvae appearing. (Exp. Sta.).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adult populations decreasing on matrimonyvine. Counts average 70 per 100 sweeps in Larimer County. Eggs deposited and second-instar nymphs observed June 2. Adult reported May 31 from Saguache County. (Exp. Sta., June 3).

Potato Psyllid Survey - Third survey for potato psyllid was made during week ending June 6. Sharp decline in psyllid populations was experienced over entire area checked. Average psyllid per 100 sweeps: NEBRASKA - Scottsbluff area 4.8; WYOMING - Greenriver area 0.2 and Laramie area 1.6; COLORADO - Greeley area decreased to 7 while Pueblo-La Junta area dropped to 18, Salida remained low at 4, west of the mountains at Grand Junction populations averaged 2; UTAH - Provo-Logan area averaged 2.72. (PPC, States Coop.).

TOMATO FRUITWORM (Heliothis zea) - LOUISIANA - Medium infestations on tomatoes in West Carroll, Concordia and Sabine Parishes. (Spink). SOUTH CAROLINA - Small amount of injury appearing in beans and tomatoes in Charleston County. (Reid). GEORGIA - Light to moderate infestations on tomatoes in 5 counties. (Johnson).

STRIPED BLISTER BEETLE (Epicauta spp.) - GEORGIA - Heavy infestations on tomatoes in Berrien County. (Johnson).

SOUTHERN POTATO WIREWORM (Conoderus falli) - SOUTH CAROLINA - Small amount of injury appearing on tubers of potatoes in Charleston County. Present indications are that damage to crop will be relatively light this spring. (Reid).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - WASHINGTON - Larvae defoliating potatoes at Quincy, May 26 and causing noticeable damage at Toppenish, May 27. (Landis). NEW JERSEY - Eggs hatching central area south. (Ins. Dis. News1). IDAHO - Infestations becoming general many potato fields, particularly throughout south central and eastern areas. Adult numbers high in Bonneville County. (Kohl, Edwards, Cross). SOUTH CAROLINA - Especially damaging to tomatoes in Lee County. Damage severe over most of State this season. (Nettles, et al.). UTAH - Outbreak serious in northern Davis County and parts of Weber County. (Knowlton). VIRGINIA - Large numbers hatching on potatoes in Cumberland County. (Seay). NORTH CAROLINA - Untreated planting 30 percent loss in Duplin County; losses also in Robeson County. (Farrier, Scott). NEW MEXICO - Light infestations damaging potatoes at Clovis, Curry County. (N. Mex. Coop. Rpt.).

CUTWORMS - INDIANA - Feltia sp. causing considerable damage to newly-set cabbage and tomato plants. (Chandler). ARIZONA - Unusually severe this year in Pinal and Maricopa Counties. (Miller).

FLEA BEETLES - INDIANA - Epitrix fuscata and E. cucumeris heavy on potatoes. (Chandler). UTAH - Damaged tomato sets in Carbon, Emery and Salt Lake Counties, and some sugar beet fields sprayed in Gunnison Valley. (Knowlton). NORTH DAKOTA - Few adults present on potatoes in Grand Forks area. (N. Dak. Ins. Rpt.). NEW YORK - Heavy on mustards and radishes in Nassau County and damaging to tomato transplants in Niagara and Monroe Counties. (N. Y. Wkly. Rpt.). NEW MEXICO - Light infestations damaging potatoes in Dona Ana, Luna and Hidalgo Counties. (N. Mex. Coop. Rpt.).

GRASSHOPPERS - NEW MEXICO - Continue to damage tomatoes, chilli and cantaloups in Luna and Hidalgo Counties. (N. Mex. Coop. Rpt.).

HORNWORMS (Protoparce spp.) - GEORGIA - Light infestations on tomatoes in 4 counties. (Johnson).

LYGUS BUGS - NEW MEXICO - Abundant on potatoes in Dona Ana, Luna and Hidalgo Counties. (N. Mex. Coop. Rpt.).

POTATO APHID (Macrosiphum solanifolii) - MICHIGAN - Troublesome on tomatoes about Stevensville, Sodus and St. Joseph. (Hutson, May 29). PENNSYLVANIA - Becoming a problem on tomatoes in southeastern area (Menuhan) and on every tomato plant in south central area; can be a problem (Pepper).

POTATO LEAFHOPPER (Empoasca fabae) - ALABAMA - First appearance in Auburn week of May 31. Infestations light to moderate. (Ruffin). DELAWARE - Infestations range from light to heavy on potatoes over State. (MacCreary, Conrad).

A MAGGOT (Hylemya fugax) - WASHINGTON - Collected in large numbers from sticky boards at Walla Walla, mixed with H. antiqua and H. brassicae. (Woodworth, May 23).

CABBAGEWORMS - LOUISIANA - Plutella maculipennis, Pieris rapae, and Evergestis rimosalis heavy on collards in Baton Rouge. (Spink). SOUTH CAROLINA - P. maculipennis predominant species on late spring cabbage in Charleston County; much more abundant than any spring since 1951, averaging about 10 larvae per plant. Moderate populations of P. rapae, averaging 2.5 per plant, and light populations of Trichoplusia ni present. T. ni much less abundant than usual. (Reid). DELAWARE - P. maculipennis larvae and adults prevalent on cabbage in Kent and Sussex Counties. Pupation observed. (MacCreary, Conrad).

CABBAGE MAGGOT (Hylemya brassicae) - MICHIGAN - Extremely numerous at Grand Rapids, Lansing and Charlotte. (Hutson, May 29). RHODE ISLAND - Heavy larval infestation on radish at North Scituate. (Stoner). NEW YORK - Considerably heavier than in 1957 in Rockland County and troublesome in early untreated fields in Genesee County. (N. Y. Wkly. Rpt.).

ASPARAGUS BEETLES (Crioceris spp.) - UTAH - Moderately numerous in Davis, Weber and Cache Counties. (Knowlton). INDIANA - Abundant in Lafayette area. (Chandler). COLORADO - First C. asparagi in numbers reported June 2 in Larimer County. (Exp. Sta.). WISCONSIN - C. duodecimpunctata adults appearing in Dane County and adults of C. asparagi becoming less numerous. (Wis. Coop. Sur.). DELAWARE - Common over State. (MacCreary, Conrad). IOWA - Abundant in harvested plantings. (Iowa Ins. Inf.).

THRIPS - NEW MEXICO - Moderate to heavy infestations on onions in Luna and Dona Ana Counties. (N. Mex. Coop. Rpt.).

ONION MAGGOT (Hylemya antiqua) - MICHIGAN - Numerous larvae at Mount Clemens, Bath, Stockbridge and Munith. (Hutson, May 29). OREGON - Maggots appearing in fields near Weiser, May 31. (Crowell). NEW YORK - Damage evident everywhere in Orange County. (N. Y. Wkly. Rpt.).

PEA APHID (Macrosiphum pisi) - WASHINGTON - Increasing on peas at Quincy. (Landis, May 30). Control necessary on peas near Almeta. (Dennis). IDAHO - Populations generally much lower on peas in Latah and Nez Perce Counties than in 1957. In few fields in northern Clearwater Valley populations reaching 10 per sweep. (Gittins, Kambitsch). UTAH - Common in canning pea fields. Populations generally moderate. (Knowlton). DELAWARE - Infestations on canning peas range from light to sufficiently heavy to require control. (MacCreary, Conrad). PENNSYLVANIA - Spraying for control on peas in Juniata County. (Udine).

PEA WEEVIL (Bruchus pisorum) - IDAHO - Adult populations above 1957 level in most pea fields in Latah, Nez Perce, Lewis and Idaho Counties. Over one per sweep in many untreated fields. (Kambitsch, Gittins, Cook). WASHINGTON -

Control necessary some fields in Whitman County. (Telford).

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Much more abundant than usual for time of year in Charleston County. Untreated beans almost completely defoliated some fields. (Reid). Intensive dusting program required on commercial beans in Allendale, Orangeburg, Hampton, Berkeley and Colleton Counties. (Nettles et al.). COLORADO - First adult from hibernation June 2 in Larimer County. (Exp. Sta.). DELAWARE - Adults fairly common on beans at Millsboro, southern Sussex County. (MacCreary, Conrad). GEORGIA - Heavy infestations on beans in Colquitt, Mitchell and Grady Counties. (Johnson). FLORIDA - Averaging 1-30 per plant on 100 acres of beans in Alachua County. Common in abandoned fields. (Fla. Coop. Sur.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - SOUTH CAROLINA - Causing severe damage to young beans in Florence County. (Kirk). DELAWARE - Causing light damage to beans in southern Sussex County. (MacCreary, Conrad).

APHIDS - CALIFORNIA - Light populations of Macrosiphum pelargonii adults collected on lettuce in Watsonville area of Santa Cruz County. Det. by W. Simonds. (Cal. Coop. Rpt., May 16). OREGON - Myzus ascalonicus infesting strawberry plantings near Gresham and in Clackamas County. (Rosenstiel). DELAWARE - Aphis gossypii fairly numerous on squash in Sussex County. (MacCreary, Conrad).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - MICHIGAN - Extremely scarce on strawberries in all strawberry growing areas. (Hutson).

A SERPENTINE LEAF MINER (Liriomyza sp.) - FLORIDA - All stages averaging 30 or more per plant in approximately 200 acres in Marion and Alachua Counties, infesting tomatoes, watermelons and eggplants. (Fla. Coop. Sur.).

SPINACH LEAF MINER (Pegomya hyoscyami) - OHIO - Severe infestation developed on sugar beets in southern Erie County, centering around Milan. In some fields, more than 90 percent of leaves with eggs. This is second consecutive year that growers in this area experienced trouble with this species. The population this year will apparently exceed that of 1957. (Triplehorn).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - LOUISIANA - Infestations heavy on cucurbits in West Carroll and East Baton Rouge Parishes. (Spink).

WHITEFLIES - ARIZONA - Infestations building up in Graham County. Light to heavy on vegetables. (Miller).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Adult emergence first observed week of May 26 in Grafton area, Walsh County. (N. D. Ins. Rpt.).

CYCLAMEN MITE (Steneotarsonemus pallidus) - WASHINGTON - Adults lightly damaging strawberry field at LaCenter, Clark County. Evidence of heavier population having been present. (De Grave).

STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) - MICHIGAN - Hatching in numbers at Coloma, Paw Paw, Sodus and Stevensville. (Hutson). ILLINOIS - Adults very active in Anna-Jonesboro area. (Meyer). VIRGINIA - Very heavy in strawberry fields in Northampton County. (Hofmaster, May 23). WISCONSIN - Adults, eggs and first instar larvae light to moderate in Door County strawberry plantings. (Wis. Coop. Sur., May 24).

TOBACCO INSECTS

BUDWORMS (Heliothis spp.) - GEORGIA - Light to moderate infestations of H. virescens on tobacco in Tift, Lowndes, Colquitt, Mitchell and Grady Counties.

(Johnson). VIRGINIA - Very light damage to tobacco in Greensville and Brunswick Counties. (Morris). NORTH CAROLINA - Light oviposition on oldest tobacco plants in Granville County. (Chamberlin).

GREEN PEACH APHID (*Myzus persicae*) - GEORGIA - Light infestations on tobacco in 6 counties. (Johnson). VIRGINIA - Very light on newly set tobacco in 2 fields in Pittsylvania County (Dominick), and in fields surveyed in Mecklenburg, Brunswick and Greensville Counties. (Morris).

HORNWORMS (*Protoparce* spp.) - VIRGINIA - First eggs of season noted on newly set tobacco in Pittsylvania County. (Dominick). NORTH CAROLINA - Light oviposition on oldest plants in Granville County. (Chamberlin).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Damage to newly set tobacco in Prince Georges County heavy. (U. Md., Ent. Dept.). VIRGINIA - Generally light to medium on newly set tobacco plants in Pittsylvania County. Some control being applied. (Dominick). Infestation generally light to medium in fields in Mecklenburg, Brunswick and Greensville Counties. Populations ranged from 0-4 adults per plant. (Morris).

GRASSHOPPERS - SOUTH CAROLINA - Locally numerous on tobacco. Recommended control effective in Lee County. (Nettles et al.).

SEED-CORN MAGGOT (*Hylemya cilicrura*) - CONNECTICUT - Tobacco sets in field heavily infested in Connecticut Valley. (Kring).

WIREWORMS - SOUTH CAROLINA - Locally severe damage to tobacco in Lee County. (Nettles et al.). NORTH CAROLINA - Numerous reports of injury to newly set plants in Granville County. (Chamberlin). Three-fourths of plants in random tobacco fields in Wilson County attacked. (Lewis).

COTTON INSECTS

APHIDS - GEORGIA - Very light infestations of *Aphis gossypii* on cotton in 6 counties. (Johnson). TENNESSEE - Generally light in western area. (Locke). MISSISSIPPI - Light infestations remain general in delta counties. (Merkl et al.). OKLAHOMA - *A. gossypii* very light in east central counties. (Coppock). TEXAS - Infestations continue light with medium infestation noted in 1 of 54 fields in McLennan and Falls Counties. (Parencia et al.).

BEET ARMYWORM (*Laphygma exigua*) - CALIFORNIA - Damaging cotton plantings in northern Kern County. Heaviest infestations and severe damage occurred in Buttonwillow area. (Cal. Coop. Rpt.). ARIZONA - Spotty light infestations in Tucson. (Bottger, Kauffman).

BOLL WEEVIL (*Anthonomus grandis*) - LOUISIANA - Light infestation in East Carroll Parish. One to 3 per 100 foot of row in 3 fields in Pointe Coupee Parish. (Spink). Adults averaged 32 per acre in 59 fields in Madison Parish. Percentage of survival in hibernation cages to June 4 at Tallulah was 3.60 compared with .77 in 1957; 1.24 in 1956; 1.12 in 1955 and 3.34 in 1954. (Smith et al.). ALABAMA - Infestations in central area remain very light. None found in survey of several hundred acres of young cotton in northern area. (Rawson, Grimes). GEORGIA - Percent punctured squares averaged 17 in 18 cotton fields inspected in central and southern counties. (Johnson). TENNESSEE - Some adults found in southern half of western area. (Mullett). VIRGINIA - None found in fields surveyed in Mecklenburg, Brunswick and Greensville Counties. (Morris). SOUTH CAROLINA - Adults ranged from 0-154 per acre in seedling cotton in Florence area compared with 0-200 per acre in 1957. Counts on basic experimental acre at Florence averaged 58 per acre compared with 816 per acre in 1957. Infestations are spotty. Most fields average between 10-20 weevils per acre. (Fye et al.).

NORTH CAROLINA - Adult counts lowest in recent years, except for few fields. Most fields near zero population. (Cott. Lett.). MISSISSIPPI - Weevils found in only 4 of 20 fields examined. Number per acre ranged from 50-300 in infested fields in delta counties. (Merkl et al.). TEXAS - Infestations increasing in lower Rio Grande Valley. Overwintering weevils feeding on young squares and terminals in southwest, upper coastal, south central, eastern and central areas. (Gaines). Weevils averaged 144 per acre in 12 untreated early-planted fields and 35 per acre in 50 treated fields with overall average of 54 per acre in McLennan and Falls Counties. (Parenica et al.).

BOLLWORMS (*Heliothis* spp. et al.) - LOUISIANA - Egg deposition heavy in Pointe Coupee Parish, high of 25 eggs per 100 feet of row. (Spink). Eggs observed several older fields in Madison Parish. (Smith et al.). ALABAMA - Heavy infestation of *H. zea* and *H. virescens* on cotton in central area. Counts average 19.2 larvae per 100 terminals and 41.5 eggs per 100 plants. Infestations rather light in northern area; however, both eggs and young larvae found. (Rawson, Grimes). GEORGIA - Egg counts ranged from 5-70 per 100 terminals, averaging 30 per 100 terminals, in 29 fields checked in southern and central area. Larvae ranged from 0-5 per 100 terminal buds and averaged 2 larvae per 100 terminals. All fields infested with eggs and/or larvae. (Johnson). SOUTH CAROLINA - Damage widespread in Florence area. Larvae easily found, feeding on terminals. (Fye et al.). NORTH CAROLINA - All cotton fields observed in southern Piedmont and Coastal Plain with less than 4 infested terminals per 100 plants. (Jones, et al.). MISSISSIPPI - Eggs and larvae in one field in Stoneville area. (Merkl et al.). TEXAS - Occasional egg and larva found in few fields in McLennan and Falls Counties. (Parenica et al.).

CUTWORMS - ALABAMA - *Agrotis ypsilon* severely injured several hundred acres of cotton in Limestone and Madison Counties. (Grimes). SOUTH CAROLINA - Occasional damage to cotton in Florence area. Sometimes severe. (Fye et al.).

FLEAHOPPERS - OKLAHOMA - Nymphs and adults average less than 1 per plant in Webers Falls area. (Coppock). TENNESSEE - Present most fields in western area, but seem heavier in southern Fayette County. Some small square damage may result in that area if infestations continue to increase. (Locke). MISSISSIPPI - Light populations in 2 fields of older cotton in Stoneville area. (Merkl et al.). TEXAS - Light to medium infestations in lower Rio Grande Valley, coastal bend, southwestern, upper coastal, south central and central areas. (Gaines). Migration of *Psallus seriatus* occurring in McLennan and Falls Counties. Infestation averaged 20.8 per 100 terminals in 17 untreated fields and 13.3 in 51 treated fields with overall average of 15.2. (Parenica et al.). ARIZONA - *Psallus seriatus* and black flea hopper moderately abundant over south central and southeastern portion of State. (Bottger, Kauffman). NEW MEXICO - *P. seriatus* building up most cotton fields in southern counties. Black flea hopper also increasing in numbers and doing some damage to squares in Dona Ana, Eddy and Luna Counties. (N. Mex. Coop. Rpt.).

GRASSHOPPERS - NEW MEXICO - Doing considerable damage to cotton fields adjoining range areas in Hidalgo County. (N. Mex. Coop. Rpt.).

LYGUS BUGS - ARIZONA - Infestations increasing in all areas. (Bottger, Kauffman). NEW MEXICO - Heavy populations on Russian thistle beginning to move into cotton fields near Animas, Hidalgo County. (N. Mex. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - TEXAS - Infestations decreased in lower Rio Grande Valley, but light infestations observed in coastal bend, upper coastal and south central area. (Gaines).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ALABAMA - Several larvae observed in young cotton in northern areas. Rather unusual record in this area for time of year. (Grimes).

STINK BUGS - ARIZONA - Numerous in cotton and melon fields in Graham County; several in Maricopa County. (Miller).

SPIDER MITES - ARIZONA - Attacking some cotton and melon fields, some control in Pinal County. (Miller). Causing some damage to stub cotton. (Roney). ALABAMA - Heavy infestation of Tetranychus telarius and T. atlanticus around edges of cotton fields in Autauga County. (Rawson).

THRIPS - OKLAHOMA - Curling leaves of young cotton in Jackson and Tillman Counties. (Hatfield). LOUISIANA - Counts averaged .13 per plant in 34 fields examined in Madison Parish. (Smith et al.). Medium to heavy infestations in East Carroll Parish. (Spink). ARIZONA - Damage to 4-leaf stage cotton in Maricopa and Pinal Counties moderate. (Miller). ALABAMA - Heavy infestation on young cotton in Limestone and Madison Counties. (Grimes). TENNESSEE - Generally light in western area. (Locke). VIRGINIA - Damage heavy one field each in Brunswick and Greensville Counties. (Morris). NORTH CAROLINA - Adults averaged 2 per cotyledonous cotton plant in Cleveland and Union Counties. Species mostly Frankliniella fusca with few Thrips tabaci. (Spyhalski). MISSISSIPPI - Populations remain generally light with little damage in delta counties. (Merkl et al.). TEXAS - Infestations light to heavy in northeastern, north central, northwestern, western and south plains areas. (Gaines). Medium to heavy infestations in all untreated late-planted fields in McLennan and Falls Counties. (Parenica et al.). NEW MEXICO - Injury appears to be decreasing most fields. (N. Mex. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - INDIANA - Severely damaging Scotch pine plantings in Kosciusko County. (Chandler). Extremely abundant in northern part of State near Michigan State line. (Schuder). PENNSYLVANIA - Very heavy and general on pines in northeast area. (Gesell). Virus spray appears successful near Kunkletown against this species. (Drooz).

ELM SAWFLY (Cimbex americana) - OKLAHOMA - Defoliating elm in Craig and Love Counties. (Flora, Campbell).

MAPLE PETIOLE BORER (Caulocampus acericaulis) - NEW JERSEY - Maple leaves falling in some areas as result of feeding. (Ins. Dis. Newsl.). RHODE ISLAND - Heavy on individual maples, Smithfield. (Mathewson).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MICHIGAN - Pupae common at Battle Creek, Bath and Kalamazoo, May 26. (Hütson). INDIANA - Heavy on Scotch pine in Kosciusko County. (Chandler). Average of 50 percent pupated, May 28 and first adult, June 6. (Schuder). WISCONSIN - In Milwaukee County 50-60 percent pupation by May 29. (Wis. Coop. Sur.).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - SOUTH CAROLINA - Doing as much damage to pines this year as noted in any recent year. Seems to have infested nearly every young pine tree used for ornamental planting around homes in Saluda County. (Nettles et al.).

A PINE TIP MOTH - ARKANSAS - Heavy damage by first larval generation in many plantings. Control applied in Rolla area. (Ark. For. Pest Rpt.). TEXAS - Infesting loblolly pine plantations in Newton and Jasper Counties. (Young).

SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - In fourth instar on Kabetogama Peninsula with population averaging 20 larvae per 15-inch twig sample. Control planned. (Minn. Ins. Rpt.). WISCONSIN - Light infestations in northwestern stands of small balsam. (Wis. Coop. Sur.).

LARCH CASEBEARER (*Coleophora laricella*) - WASHINGTON - Light defoliation on larch. Infestation is very light from Spokane to Deer Park. (Denton, May 16). WISCONSIN - Light in most areas. Adults emerged in Dane County. (Wis. Coop. Sur.).

JACK-PINE BUDWORM (*Choristoneura pinus*) - WISCONSIN - Counts fairly high in west central area but parasites effective. Populations in northeastern area light. (Wis. Coop. Sur.). MINNESOTA - Third-instar larvae in St. Louis County. (Minn. Ins. Rpt.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - COLORADO - In buildup numbers and widely distributed at Fort Collins. (Exp. Sta.). PENNSYLVANIA - Abundant migration in Westmoreland County and spinning cocoons in Franklin County. (Drooz, Udine).

FALL CANKERWORM (*Alsophila pometaria*) - INDIANA - Larvae abundant on silver maple and apple at Lafayette. (Chandler).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - WISCONSIN - Feeding and observed for first time this season attempting to enter elm wood to breed. (Wis. Coop. Sur.).

PALES WEEVIL (*Hylobius pales*) - PENNSYLVANIA - Adults fairly abundant in soil around base of young pine trees, Perry County. (Pepper). Considerable feeding last fall and this spring on pine in southwest. (Udine).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - Infestation increased greatly in the Kountze, Sour Lake, Saratoga areas of Hardin County. The situation approaches epidemic proportions and plans for control underway. (Young).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - TEXAS - Activity increasing on 3 ranger districts of the Texas National Forests. Control continued. (Young).

MAPLE CALLUS BORER (*Sylvara acerni*) - INDIANA - Emerging in numbers from silver maples in Lafayette area. (Chandler).

POPLAR AND WILLOW BORER (*Sternochetus lapathi*) - OREGON - Infestation of a serious nature on poplar and willow in eastern Benton County. (Chamberlin).

BIRCH LEAF MINER (*Fenusa pusilla*) - RHODE ISLAND - Larvae heavy in birch mines, East Providence, May 28. (Mathewson). MINNESOTA - Still active in central district and further north. (Minn. Ins. Rpt.). NEW YORK - Feeding, which began in mid-May at Hyde Park, has turned almost all untreated birches brown. More than 2 larvae per leaf. Control applied. (N. Y. Wkly. News1.).

PINE SPITTLEBUG (*Aphrophora parallela*) - WISCONSIN - Common in most jack pine stands. (Wis. Coop. Sur.).

APHIDS - R. I. - Building up on many different plants. (Mathewson, Stoner). NEW JERSEY - Heavy on maples and honeydew coating leaves and cars. (Ins. Dis. News1.). PENNSYLVANIA - *Hamamelistes spinosus* numerous on white birch in Clearfield and Butler Counties. Det. J. O. Pepper. *Myzocallis ulmifolii* curling leaves of elm in Centre County. (Adams). *Cinara* sp. fairly abundant on new growth of Scotch pine in Cumberland and Westmoreland Counties. (Pepper, Udine). MARYLAND - *Myzocallis ulmifolii* moderate to heavy on large elms in College Park area. (U. Md., Ent. Dept.). INDIANA - *Pineus strobi* unusually heavy on Scotch pine in La Porte County. (Schuder). NORTH DAKOTA - Infestations quite numerous on roses and ornamental shrubs in southeast area. (N. D. Ins. Rpt.). UTAH - Severely attacking weeping willows in Sanpete County. (Knowlton). NEW MEXICO - Heavy on pyracantha and oleander in southern counties. (N. Mex. Coop. Rpt.).

SCALE INSECTS - CALIFORNIA - Parlatoria camelliae heavy on camellia in Sutter Creek, Amador County; Gossyparia spuria heavy on elms in Ojai, Ventura County; heavy infestations of Cercococcus quercus on cork oak at Beaumont, Riverside County. (Cal. Coop. Rpt.). MICHIGAN - An infestation of Toumeyella numismaticum developing near Kalkaska on Scotch pine Christmas tree plantations. Lecanium corni numerous on many ornamentals at Lansing, Grand Rapids and Birmingham. (Hutson, May 26). VIRGINIA - Gossyparia spuria hatching in Richmond. (Freund). RHODE ISLAND - Phenacaspis pinifoliae heavy on hemlock at Cranston. (Mathewson).

MITES - TEXAS - Heavy damage to evergreens in Brazos and Harris Counties. (Turney). FLORIDA - Considerable buildup of spider mites mostly on crotons, pittosporum and adonidia palms in 18 nurseries in Palm Beach County during May. Of 500 pittosporum, 485 were infested with spider mites in one nursery. (Fla. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeraeformis) - DELAWARE - Newly-hatched larvae on pine near Dover. (MacCreary, Conrad). INDIANA - Hatched at West Lafayette, May 26. (Schuder). IOWA - Hatching at Muscatine. (Iowa Ins. Inf.). KANSAS - Larvae hatching over eastern half of State. Heavy infestations expected following a high 1957 population. (Matthew). MISSOURI - Hatch largely completed over southern half of State and just beginning over northern half. Heavy damage expected unless controlled. (Kyd, Thomas).

HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma) - MISSOURI - Leaves of hackberry very heavily infested with these galls over much of northern area. Counts show 8-32 galls per leaf. (Kyd, Thomas).

PERIODICAL CICADA (Magisicada septendecim) - NEW JERSEY - Emerging in Union County. (Ins. Dis. News.).

A PLANT BUG (Irbisia sp.) - CALIFORNIA - Heavy infestations of ornamentals in Chico, Butte County. (Cal. Coop. Rpt.).

BOXLEDER TWIG BORER (Proteoteras willingana) - INDIANA - Abundant on silver maples at Corydon. (Schuder).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - WASHINGTON - Abundant on silver maple in Whitman County. Oviposition underway. Overwintering females heavily parasitized. (Telford, Harwood). IDAHO - Light infestation along with large numbers of egg masses on maples in Sandpoint area. (McPherson).

ELM LEAF BEETLE (Galerucella xanthomelaena) - TENNESSEE - Large numbers hatching in Chinese elms across State. (Mullett, May 31). NEVADA - Depositing eggs at Lovelock, in Pershing County. (Sebbas, Snyder, May 30). INDIANA - Hatching May 22 at Vincennes. (Hamilton). Abundant on Chinese elm in Lafayette. First hatching, May 26. (Schuder). IDAHO - Hatching on elms in Parma area about May 28. (Waters).

MAPLE BLADDER-GALL MITE (Vasates quadripedes) - IDAHO - An infestation on maples at Sandpoint is first known record in this area of State. (McPherson). RHODE ISLAND - Numerous complaints from many locations. (Mathewson). WISCONSIN - Galls on maple leaves numerous in several sections. (Wis. Coop. Sur.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - WASHINGTON - Stripping willows at Moses Lake. Some small trees bare of leaves. (Landis, May 30). Observed same vicinity in 1957 on elm. (Johansen).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (*Siphona irritans*) - OKLAHOMA - Averages 500-1,000 per untreated cow, Okfuskee County. (Coppock). LOUISIANA - Annoyance to livestock increasing statewide. (Spink). UTAH - Appearing more generally on cattle in many localities. (Knowlton). IOWA - Up to 500 per animal on beef cattle. (Iowa Ins. Inf.).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Lower than normal for this time of year, Payne County. (Howell).

LICE - LOUISIANA - Laying houses heavily infested with chicken lice at Clinton, East Feliciana Parish. (Spink).

TABANIDS - LOUISIANA - *Tabanus* spp. and *Chrysops* spp. increasingly annoying to livestock throughout State. (Spink). PENNSYLVANIA - Few adult *Tabanus* spp. appearing about dairy cattle at Clearfield. (Adams). ALABAMA - *Chrysops* spp. heavy on cattle in Madison County, *Tabanus* spp. averaged 3 per cow in Lea County. (K. Hays). FLORIDA - *Diachlorus ferrugatus* appeared in increasing numbers at Gainesville. Hundreds in local hammocks, particularly in wooded ravines along Hogtown Creek. Biting severe in wooded areas. Causing trouble around homes late in afternoon. (Fla. Coop. Rpt.).

MOSQUITOES - NEVADA - *Aedes* spp. and *Culex* spp. increasing in Douglas County. (Bechtel, Roberts, May 30). UTAH - Annoyance common in Uintah Basin flood-water areas and in several irrigated sections in other parts of State. (Knowlton). LOUISIANA - Becoming increasingly annoying to livestock throughout State. (Spink). CALIFORNIA - Decided increase in *Culex tarsalis* taken in light traps, San Joaquin Valley. *Culiseta inornata* widely reported. *Aedes nigromaculis* appearing in San Joaquin Valley, and to lesser extent in Sacramento Valley. (Cal. Coop. Rpt.). COLORADO - Adults, principally *Aedes dorsalis*, high in Fort Collins area, Larimer County. Larval counts down in sampling areas. (Exp. Sta.). PENNSYLVANIA - *Culex pipiens* very abundant and annoying, Lackawana County. (Gesell). IOWA - Averaged 2-10 first and second-instar larvae per dip in roadside pools, Story, Hamilton, Wright, Humboldt, Kossuth and Franklin Counties. (Iowa Ins. Inf.). NORTH CAROLINA - *Aedes sollicitans* numbers down at Morehead and in Onslow and New Hanover Counties. (Aschittans).

SCREW-WORM (*Callitroga hominivorax*) - LOUISIANA - Infesting cattle and sheep, East Carroll Parish. (Spink). NEW MEXICO - Troubling cattle in Luna County. (N. Mex. Coop. Rpt.). IOWA - Present earlier than usual this year, being reported by Wapello veterinarians as arriving with east Texas cattle late in April. Has apparently taken a foothold as several infestations on cattle and sheep have been reported in that area. (Iowa Ins. Inf.).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Averaged 3-40 per untreated animal, Payne County. (Howell). IOWA - Up to 5 per animal. Rains have increased breeding material. (Iowa Ins. Inf.).

FLEAS - OKLAHOMA - Numerous in homes and yards, Oklahoma City. (Bower).

TICKS - CONNECTICUT - *Dermacentor variabilis* more abundant than in past years and reported in numerous new locations. (Johnson). NEW JERSEY - Numbers still apparently low, peak yet to come. (Ins. Dis. Newsl.). RHODE ISLAND - *D. variabilis* continues statewide. (Stoner).

STORED-PRODUCT INSECTS

AN OECOPHORID (*Endrosis sarcitrella*) - CALIFORNIA - Light in mixed feeds at Vista, San Diego County. (Cal. Coop. Rpt.).

RED-LEGGED HAM BEETLE (Necrobia rufipes) - CALIFORNIA - Light in copra at Richmond, Contra Costa County. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

AN ALKALI BEE (Nomia melanderi) - IDAHO - Males common, females emerging in nesting sites in Homedale area. Adult Heterostylum robustum emerging from alkali bee nesting areas in southwestern sections. (Barr, Water, Homan). OREGON - Began emerging in Milton-Freewater area May 26 and near Adrian May 3. H. robustum 80 percent emerged in Milton Freewater and Adrian areas June 1. (Stephen). WASHINGTON - Emergence began at Gardena, Walla Walla County, May 28 and at Prosser, Benton County, June 4, which is 2 weeks earlier than in 1957. H. robustum emerged a few days early at Gardena, Walla Walla County and at Prosser, Benton County. (Frick).

PARASITES AND PREDATORS - COLORADO - Alfalfa weevil larvae 30-50 percent parasitized by Blathyplectes curculionis in some areas. Hippodamia convergens and Chrysopa spp. in varying numbers in all areas. (Exp. Sta.). NEW MEXICO - Geocoris spp. abundant in cotton fields, Dona Ana, Luna and Hidalgo Counties. (N. Mex. Coop. Rpt.).

MISCELLANEOUS INSECTS

COCKROACHES - VIRGINIA - Blatta orientalis heavy in number of homes and a chicken (layer) house in Richmond. Many adults indicate infestation must have been present for some time. (Willey). OHIO - Infestation at Uhrichsville believed to be Periplaneta fuliginosa. (Rings).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - OHIO - Numerous reports from northern parts of State. (Rings). RHODE ISLAND - Alates still flying at East Providence. (Mathewson, May 28).

PAINTED LADY (Vanessa cardui) - IDAHO - Quite abundant on thistles throughout most of State. In some areas infestations also on some garden plants. (Gittins, Kohl, T.F.F.S.). WASHINGTON - Larvae severely damaging Canadian thistle, Whitman County. Adults much more abundant than usual. (Telford).

CORRECTIONS

CEIR 8(22):462 and 8(23):488 - Under Forest, Ornamental and Shade Tree Insects change Vasates quadripes to read Vasates quadripedes.

CEIR 8(22):461 - Under BAGWORM, change INDIANA to read KANSAS.

CEIR 8(23):479 - Under SWEETCLOVER APHID change Therioaphis riehlmi to read Myzocallidium riehlmi.

CEIR 8(23):491 - BLACK FLIES - RHODE ISLAND - Change (Pepper) to read (Mathewson, Stoner).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta	quinq.	Heliothis zea	vires.
ALABAMA								
Crossville 5/29,6/4	3					56	33	
Fairhope 5/8	2		3		1			
FLORIDA								
Gainesville 5/28		2						
Quincy 6/3	1	1					1	2
ILLINOIS								
Urbana 5/29-6/5	37	2		2				
INDIANA(Counties)								
Orange 5/18-6/2	894	26	3	21				
Tippecanoe 5/23-6/5	249	4						
LOUISIANA								
Franklin 5/30-6/3			4	2				
MISSISSIPPI								
Grenada 5/26-30	5	3						
Senatobia 5/23-30	6						3	
State College 5/31-6/6	8	1	6	1	1		2	2
*Stoneville 5/30-6/5	1375	57	96	527	3		49	
NEBRASKA								
Alliance 5/11-20	287	8		184			5	
Kearney 5/9-21	801	70		154		1	7	
Lincoln 5/18-23	2371	158		96			90	
North Platte 5/17-18,20-22	3246	128		1634			54	
Scotts Bluff 5/20-26	26	1		217			9	
NORTH CAROLINA								
Faison 6/5		1			11	5	7	
SOUTH CAROLINA								
Charleston 5/26-6/1	1	2	3	1				1
Clemson 5/31-6/6	62	11	43	2	13	16	34	
Florence 6/1-7	12	5		13	13	2	47	
SOUTH DAKOTA								
Brookings 6/4,6	45	8		25				
TENNESSEE(Counties)								
Blount 5/26-6/2	54	4	2	5			10	
Cumberland	5	2		6				
Greene	11	5		3				
Johnson	9	3	1	3				
Maury	13	8	12			6	4	
Robertson	12	8	9			3	3	
TEXAS								
Brownsville 6/1-6			8				14	
Waco 5/31-6/6			64	53			15	

*Four traps Stoneville

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta	Heliothis quinq. zeae	vires.
WISCONSIN							
Gays Mills 5/25-6/3	31						
Middleton 5/25-6/3	47	6					
Platteville 5/25-6/3	294	10					
River Falls 5/25-6/3	300	21					

ADDITIONAL NOTES

NEW YORK - CODLING MOTH flight heavy over May 31-June 1 in eastern area. First BLACK CHERRY FRUIT FLY of season emerged in cages in Geneva on June 3. RED-BANDED LEAF ROLLER in generally scarce this season. PLUM CURCULIO egg laying moderately heavy in unsprayed cherry orchards in Wayne County. (N. Y. Wkly. Rpt.).

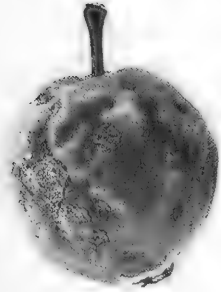
MASSACHUSETTS - ALFALFA WEEVIL larvae averaged 50 per 100 sweeps in one Worcester County field, lower in several other fields, Worcester and Hampshire Counties. PLUM CURCULIO peak in apples and peaches, May 30-June 1. RED-BANDED LEAF ROLLER hatching, scarce. ROSY APPLE APHID has caused more damage than usual throughout State. CUTWORMS continue serious on strawberries and CYCLAMEN MITE serious in several plantings and one nursery. Cutworms also serious on truck crops. CABBAGE MAGGOT damage heavy where treatments not used or late, ONION MAGGOT damage local, SEED-CORN MAGGOT injuring cucumber seedlings and FLEA BEETLES abundant on potatoes and tomatoes. BIRCH LEAF MINER damage becoming noticeable. First biting by Aedes aberratus reported May 17. A. cantator reported May 19. Egg laying by Culex spp. Heleids biting along coast. (Wheeler).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

APPLE CAPSID (Plesiocoris rugicollis (Fallen))

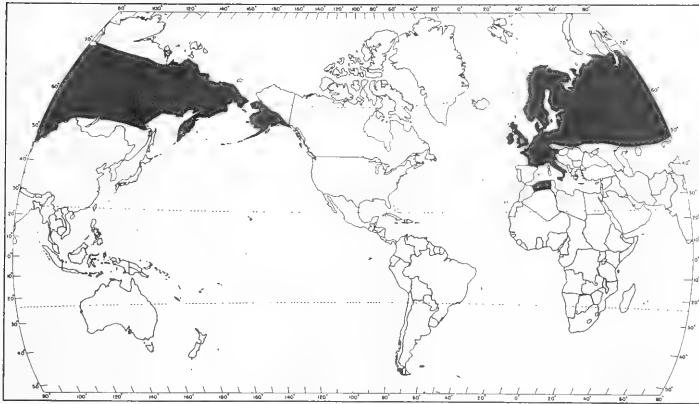
Economic Importance: This mirid is a pest of several fruit and ornamental trees in the paleartic regions of Europe and Asia. It has been considered the most serious pest of apples in Britain.

Entire crops of apples have been made unsalable due to deformed fruit. On apple, infestations produce deformed, ragged and undersized leaves. The shoots are also killed. This encourages formation of excessive side shoots, resulting in a badly shaped, stunted tree. The most obvious damage is on the fruit. The skin is rough and russeted with scattered pits and pimples. Severely damaged fruits often have deep cracks. In addition to apples, black currants are often severely damaged, the foliage being almost totally destroyed on occasions.



Damage to Apple

Distribution: Apple capsid has been generally recorded throughout northern and central Europe and through the paleartic region of Siberia. It has also been recorded in Algeria and Italy in the Mediterranean area and in parts of Alaska on the North American Continent.



General Distribution of Apple Capsid

Hosts: Apple, currant and willow are major hosts. Gooseberries, cherries, pear, alder and hazel have also been recorded as hosts.

Life History and Habits: On apple, the eggs are usually laid under the bark of twigs, but sometimes on the heavy branches and the trunk of the trees. In heavy infestations, up to 6 eggs per inch of twig have been found. The young nymphs usually begin to appear in mid-April in England, and feed on the developing leaves and flower buds. They develop very rapidly and become mature in 2 to 3 weeks. The adults are quite active, falling, running or flying short distances when disturbed. Egg-laying occurs from mid-June to mid-July and adults disappear usually by mid-August. The eggs remain dormant until the following spring. There is only one generation a year in England.

Description: Egg is elongate, about 1.6 mm. in length, translucent white in color. Nymph is bright green and resembles the adult. Adult is also bright green; head, pronotum, sides, hemelytra and legs yellow. Antennae with third and fourth joints and the extreme apex of second joint black, fourth joint about two-thirds as long as the third; pronotum only slightly raised, posteriorly strongly rugose transversely, sides straight; scutellum slightly convex towards the apex, raised down the middle; hemelytra indifferently punctured, membrane nearly hyaline, veins green; tarsi black at apex or entirely so, sometimes apex of tibiae of same color. Adult length 6 mm. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies.)
CEIR 8(24) 6-13-58



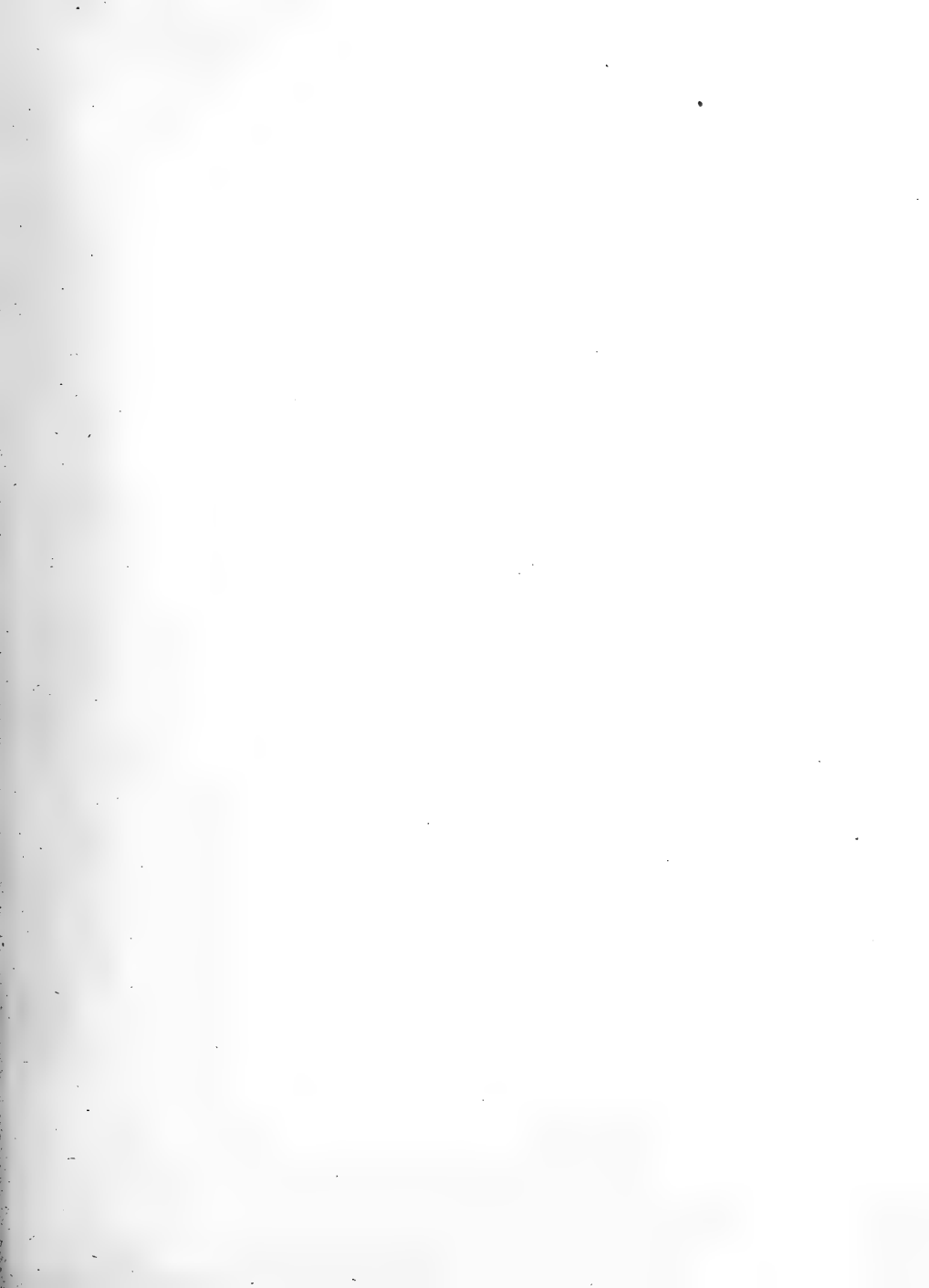
Adult of Plesiocoris rugicollis

Damage to Small Fruits and Leaves

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JUNE 20, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

**PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE**

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPERS severe and damaging in panhandle counties of Texas and Oklahoma, serious in South Dakota (p. 529) and Nebraska (p. 536). Cropland and citrus threatened in California. (p. 536). EUROPEAN CORN BORER egg mass counts heavy in Iowa (p. 530) and in Missouri (p. 531). Heaviest on record in northern Alabama. (p. 536).

Heavy outbreak of GARDEN WEBWORM in southwestern Missouri. (p. 533).

MEADOW SPITTLEBUG abundant in several States with some damage in a few areas. (p. 534).

PEA APHID increasing in northwest Minnesota and counts high in southeastern North Dakota. (p. 534).

SPOTTED ALFALFA APHID heavy in one New Mexico county and increasing in east central Oklahoma. (p. 535).

WHITE GRUBS damaging pasture in Geary and Riley Counties, Kansas. (p. 536).

APHIDS increasing and damaging apples in several States. (p. 537).

ONION MAGGOT severe in New York (p. 536) and serious in Massachusetts and Michigan (p. 541).

BOLLWORMS becoming more prevalent. (p. 542). THRIPS numerous and injurious on cotton in Texas, Louisiana and Mississippi. FLEAHOPPERS in damaging numbers generally in western portion of cotton belt. (p. 543).

JAPANESE BEETLE adults emerging in Virginia and North Carolina. (p. 547).

Status of PINK BOLLWORM as of January 1958. (p. 544).

ADDITIONAL NOTES. (p. 536).

WEATHER BUREAU 30-DAY OUTLOOK

MID-JUNE TO MID-JULY 1958

The Weather Bureau's 30-day outlook for the period from mid-June to mid-July calls for temperatures to average below seasonal normals in the northeastern quarter of the nation with coolest weather in the Great Lakes region. Above normal temperatures are anticipated in the area west of the Continental Divide and in states bordering the Gulf of Mexico. In regions not specified temperatures are predicted to average not far from normal. Rainfall is expected to exceed normal in the Southern and Central Plains and also in the South Atlantic States. Subnormal amounts are anticipated in the Great Lakes region and west of the Rocky Mountains. In the remainder of the nation near normal rainfall 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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING JUNE 16

Alma, the first tropical storm of the 1958 season, made its appearance in the southwestern Gulf of Mexico over the weekend. Moving inland south of the Rio Grande, the disturbance was accompanied by winds to 50 m.p.h. and torrential rains in Mexico. Some heavy amounts were reported in the southwestern Texas plateau on Monday, as the weakened storm moved farther westward. Local flooding occurred as up to 9.5 inches of rain fell near Uvalde, Texas. More destructive storms of the week occurred in the form of tornadoes, thunderstorms, hail, and high winds, accompanying squall lines and frontal activity which separated strongly contrasting warm moist air masses over the Southeast and unseasonably cool air masses over the Northeast and North Central. Some 15 lives were lost, 50 injured, 150 homes damaged and property damage was estimated near \$3-million as the result of a tornado which struck Eldorado, Kan., on the 10th. A violent squall line passing over Maryland on the 11th was accompanied by winds up to 100 m.p.h. in Washington County. Strong westerly winds resulting out of a low pressure disturbance situated over the St. Lawrence River, caused widespread damage in New England areas from the 14th through the 16th. Power and phone service were disrupted, at least 50 boats required emergency help along the coast, 1 man drowned, and 3 sea planes capsized. Flooding occurred in some sections of the Midwest as weekly precipitation totals ranged from 2 to 9 inches over most of the Ohio and middle Mississippi Valleys. Major flooding took place along the upper reaches of the Wabash and White Rivers in Indiana, and several hundred families had to be evacuated from Wabash downstream to Terre Haute. Two drownings were reported. Weekly precipitation amounts were 1 to 2 inches in northern Nevada, most of Idaho, central and southern sections of Montana, in southern South Dakota, and other isolated spots, namely along the Gulf, Atlantic, and Great Lake shores. Southwestern and south central sections of the country received little or no rainfall.

East of the Divide, weekly temperatures averaged above normal in the south by as much as 10° in northern Texas. In Washington, northeastern Oregon and along the Pacific coast, weekly departures were near to slightly above normal, while in Nevada and adjacent sections of bordering states they ranged from 3 to 7° below seasonal averages. Minimum temperatures reached freezing on 4 nights in northern and central lowlands of Wisconsin with some corn and vegetable loss. A 28° low was recorded at Danbury, Wis., on the 11th, 29° was observed at International Falls, Minn., on the 14th and 32° was reported at Philipsburg, Pa., over the weekend. A 45° minimum observed at Hartford, Conn., on the 16th was a record low for that location on that date. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - MINNESOTA - Cold weather has slowed hatch in northwest district. Some heavy hatches, mostly *Melanoplus bivittatus*, in Mahanomen County ditch banks and field margins, June 12, with 50-60 newly hatched nymphs per square yard. Increased hatch observed in west central district but counts only 2-6 per square yard in ditch banks and margins. *M. femur-rubrum* eggs generally coagulated in legume fields to eye-spot stage in open ditches in southern districts. (Minn. Ins. Rpt.). IOWA - Adult *M. bilituratus* in Dallas and Harrison Counties. Small numbers of newly hatched nymphs also present in most central hayfields where first crop has been removed. Averaged 1-4 per square yard. (Iowa Ins. Inf.). NORTH DAKOTA - Nymphal survey in 3 counties showed a few light to threatening scattered spot infestations in northwestern Richland County, southwestern Cass County and an area along the Cass-Traill County line. *M. bivittatus* and *M. bilituratus* dominant species. Nymphs averaged 20-60 per square yard. (N. D. Ins. Rpt.). SOUTH DAKOTA - Serious in much of southern two-thirds of Union County with up to 150 nymphs per square yard in field margins and up to 30 in alfalfa. *M. bivittatus* and *M. differentialis* dominant species. Non-economic to light in other southeast and south central areas. (Burge, King). OKLAHOMA - Present in damaging numbers in panhandle counties. Extensive spraying of roadsides. (Senette). TEXAS - Heavy to severe on road sides and range land in 33 panhandle counties. Emergency spraying in several areas. Spotted and scattered in other parts of State. (Harding). IDAHO - Locally abundant, spotty throughout much of Boundary County crop areas, most in early instars, damage very minor. (Graves, Gittins). UTAH - Very heavy hatch at Boulder, Garfield County. (Knowlton). LOUISIANA - *M. differentialis* light in alfalfa, Caddo Parish. (Spink). VIRGINIA - Averaged 25 per 100 sweeps in one of two alfalfa fields surveyed in Russell County, also very light in other fields surveyed. (Morris).

MORMON CRICKET (*Anabrus simplex*) - UTAH - Has hatched over 25,000 acres in San Juan County, often in abundance. Tooele County hatches low and scattered. Also hatched on parts of Diamond Mountain, Uintah County. (Thornley, Knowlton). IDAHO - Low levels occurring spottedly in alfalfa fields throughout northern Washington County. Feeding damage minor. (Hackler).

ARMYWORM (*Pseudaletia unipuncta*) - DELAWARE - On field corn in one area of New Castle County, fairly common on barley and red clover, western Kent County. (MacCreary, Conrad). VIRGINIA - Outbreaks in corn, small grains and grass in some counties. Damage heavy in a few instances, usually in corn in southwestern counties. (Morris). Did not occur in expected numbers in eastern area. Occasional slight damage to corn adjacent to rye. (Hofmaster). MISSOURI - Outbreak largely over in central area but some damage still being reported in north central barley and wheat. Disease and parasitism very high. (Kyd, Thomas). NORTH CAROLINA - On orchard grass in local areas of Catawba County. (Scott, Rabb). MINNESOTA - One larva found in Otter Tail County after numerous checks. Small numbers of adults in light traps in Fergus Falls, Crookston and southern areas. Cool weather restricting activity. (Minn. Ins. Rpt.). ILLINOIS - Averaged 5 per linear foot of grains in 5 fields examined in west section, 1.7 in 7 southeastern fields, 0 in 3 southwestern fields and 2.3 in 7 east-southeastern fields. (Ill. Ins. Rpt.).

CHINCH BUG (*Blissus leucopterus*) - IOWA - Adults averaged less than one per square foot in short oats, Harrison County. No nymphs seen. (Iowa Ins. Inf.). KANSAS - Continues destructive throughout many eastern parts of State. (Knutson). OKLAHOMA - Heavy, averaged hundreds per plant in east central counties. (Flora). Moderate on corn and light on sorghums in north central counties. (Walton). MISSOURI - Very heavy nymphal populations continued to damage corn and sorghums over southwestern and west central areas. (Kyd, Thomas). TEXAS - Light and scattered in small grain in north central area. (Chada).

A COLASPIS (*Colaspis* sp.) - ARKANSAS - Damage to rice in Lonoke County. Mainly larvae, few pupae forming. (Boyer, June 7). ILLINOIS - Severe damage to soybeans and corn after red clover in west-southwest, west and central sections. (Ill. Ins. Rpt.).

CORN EARWORM (*Heliothis zea*) - NORTH CAROLINA - Averaged 2 fifth and 6 small instar larvae per 10 feet of row in soybean breeding plots, Johnston County. (Brim, Farrier). In up to 5 percent of field corn whorls and causing light damage to peanuts in Bertie County. (Scott). GEORGIA - Heavy in whorls of field corn, Laurens and Warren Counties. (Shurling, Yelton). LOUISIANA - Fifty percent of examined corn infested in Caddo Parish and heavy infestations noted in East Carroll Parish. (Spink). ARKANSAS - Has attacked whorls of corn in most areas of State. (Whitcomb, June 7). IOWA - Adults appearing in light traps at Ames. (Iowa Ins. Inf.). NEW MEXICO - Working in whorls of corn, Curry, Lea, Eddy, Luna and Dona Ana Counties. Damage severe in untreated fields. (N. Mex. Coop. Rpt.).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - ARKANSAS - Infestations somewhat heavier than normal and few have justified treatment. This is rather uncommon for this State. Damage also to vegetables and flowers. (Boyer, June 7). DELAWARE - On field corn, northern New Castle County, common on sweet corn, Sussex County. (Bethel, Greenboro). OKLAHOMA - This species and *C. denticulata* in small numbers in most fields in east central counties with little damage. (Flora). Moderate to heavy in north central county fields with apparent damage. (Coppock).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Heavy on barley in Dona Ana County. (N. Mex. Coop. Rpt.). LOUISIANA - Medium on corn, East Baton Rouge Parish. (Spink). OKLAHOMA - Minor populations on corn and sorghum in eastern part of State. (Flora).

CORN ROOT APHID (*Anuraphis maidi-radici*) - IOWA - Extremely high population destroyed field of 16-inch corn in Harrison County. (Iowa Ins. Inf.).

CUTWORMS - VIRGINIA - Averaged 1.5 per 100 plants in a Washington County corn field. (Morris, Sinclair). NORTH CAROLINA - *Agrotis ypsilon* attacking corn in Macon County with 50-100 acres of cropland affected. About 400 acres infested in Cherokee County with 200 acres already treated and remainder expected to be. (Wrinn, Nave, Rabb). ILLINOIS - Mainly *A. ypsilon* damaged an average of 10.4 percent of plants in 42 southeastern corn fields, with average 1.7 per damaged plant. In 11 southwest fields examined 15.5 percent of plants showed damage with one worm per damaged plant and plant damage was 0.4 percent in 5 east-southeast fields examined with 0.5 per plant. (Ill. Ins. Rpt.). MISSOURI - Damaging few fields of corn along Missouri River bottoms to point of replanting. (Kyd, Thomas). WISCONSIN - Heavy in some corn fields of Waushara, Columbia, Shawano and Grant Counties. Considerable damage to gardens in several other counties. (Wis. Coop. Sur.). UTAH - Damaged corn in Emery County. (Knowlton).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - MASSACHUSETTS - Moths becoming active in all but latest sections. Some eggs present. (Crop. Pest Cont. Mess.). NEW JERSEY - As many as one egg mass per 5 plants of sweet corn, Middlesex County. (Ins. Dis. News1.). MARYLAND - First-brood larvae in 2-5 percent of early field corn, Dorchester and Prince Georges Counties. Damage to wheat light in same counties. (U. Md., Ent. Dept.). IOWA - Emergence is 86 percent at Ankeny and 92 in Boone and Buena Vista Counties. Heaviest light trap catch of 711 was at Ames, June 9. Egg mass counts range from 100 per 100 plants in most central counties to 410 in Boone County, 245 in Monona County and 75 per 100 plants in Buena Vista County. All on young corn. Hatching underway. (Iowa Ins. Inf.). ILLINOIS - Pupation 80 percent in northern part of State, 100 percent elsewhere. Emergence 0-16 percent in north to 75-100 percent in south. Oviposition north of East St. Louis to Quincy averaged 25-50 per 100 plants on most advanced fields. (Ill. Ins. Rpt.). ARKANSAS - Eggs on corn

in area checked from Lee County to Greene County. (Whitcomb, June 7). MISSOURI - Egg laying practically completed in most southeastern early corn, with 0-5 masses per 100 stalks. Fields averaging 35-36 inches high show 50-55 percent leaf feeding with 60-65 percent in some very early fields and a maximum of 10 larvae per plant. Majority in second and third instar. (Jackson). Egg masses averaged 120-300 per 100 stalks and 65-100 percent leaf feeding with most larvae being first to second instar in central area. (Munson). Controls being applied in central area. (Kyd, Thomas). MINNESOTA - Limited observations in southern half of State indicate approximately 25 percent adult emergence, with small light trap catches in that area. (Minn. Ins. Rpt.). NORTH DAKOTA - Pupation is 75 percent in eastern areas. (N. D. Ins. Rpt.). SOUTH DAKOTA - Emergence approximately 50 percent in southeast area and egg masses averaged 45 per 100 plants on larger corn. (Hantsbarger).

GARDEN SYMPHLID (*Scutigera immaculata*) - WASHINGTON - Heavy and causing severe damage to several acres of corn in Pacific County. (Howitt).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - DELAWARE - Causing noticeable damage to field corn, southwestern Sussex County. (MacCreary, Conrad).

SOUTHWESTERN CORN BORER (*Zea diatraea grandiosella*) - ARKANSAS - In pupal stage in northern half of State. (Whitcomb, June 7). LOUISIANA - Infesting 50 percent of corn examined. Heaviest in new fields planted near old fields where last year's stalks were not cut down. (Spink). OKLAHOMA - Apparent damage in east central counties. (Flora).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - DELAWARE - Common on field corn, southern New Castle County. (MacCreary, Conrad).

SUGARCANE BORER (*Diatraea saccharalis*) - LOUISIANA - Infesting 5 percent of corn examined. This is first emergence. Averaged 7 pupae per stalk examined, Iberville Parish. Evidence of second generation appearing in sugarcane, Lafourche and Terrebonne Parishes. Infestations running 0-32 percent in sugarcane area of State. (Spink).

TEN-LINED JUNE BEETLE (*Polyphylla decemlineata*) - IDAHO - Severe in corn field in Homestead area. Larval feeding abundant enough to require replanting of 5 acres of corn. (Portman, May 29).

WIREWORMS - ILLINOIS - Averaged one per damaged plant in 9 southeast fields with 4.7 percent of plants damaged. None in 5 southwest and 5 east-southeast fields examined. (Ill. Ins. Rpt.).

BEET WEBWORM (*Loxostege sticticalis*) - NORTH DAKOTA - Moths numerous in small grains at many eastern locations. (N. D. Ins. Rpt.). KANSAS - Moving from lambsquarters to crops, damaging field margins in southwestern portion of State. (Marvin). Larvae, probably this species, invading corn and sorghum fields. (Knutson).

BROWN WHEAT MITE (*Petrobia latens*) - UTAH - Causing light damage in Tooele County, more serious damage in Juab County. (Knowlton).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - WISCONSIN - Averaged one colony per 35 plants in oats, Trempealeau County. In grain, averaged 62 per 25 sweeps in Richland County, 103 in Vernon, 60 in LaCrosse and 175 in Trempealeau, with 13 in Outagamie, 5 in Brown, 12 in Manitowoc and 29 in Sheboygan Counties. (Wis. Coop. Sur.). MINNESOTA - Increase noted in northwest district. One Norman County barley field had 246 per 10 sweeps and 40-60 per linear foot row. Some yellowing and off color apparent. (Minn. Ins. Rpt.). NORTH DAKOTA - Light to moderate in numerous eastern barley fields. Light in a few spring wheat fields. Counts range 1 per 25 sweeps to 25 per sweep. Predators present

in most fields. No injury observed. (N. Dak. Ins. Rpt.).

SOUTH DAKOTA - Averaged 20 per 10 sweeps on oats and barley in east central area. (Hantsbarger). IDAHO - Relatively few on fall-sown grains, Bonner and Boundary Counties. Adequate predator activity and aphid build-up not expected. Alate forms moving into spring grains in these areas, but counts low. (Gittins).

HESSIAN FLY (*Phytophaga destructor*) - VIRGINIA - Larvae damaged wheat in a Pittsylvania County field (Fenne) and in experimental plots at Blacksburg (Roane).

SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) - WISCONSIN - Averaged 5-6 per sweep in Trempealeau County oats. (Wis. Coop. Sur.). MINNESOTA - Slowly increasing, adults averaged 5-15 per 20 sweeps in the Anoka area. Averaged 13 per 20 sweeps on oats at Rosemount June 12. Most nymphs apparently matured. Some movement from grains and grasses to vegetables may occur, otherwise population is expected to remain fairly steady until late June. Peak will then depend on weather. Averaged 0-2 per 10 sweeps in alfalfa, 0-9 in grain and 30-40 in ditch banks in northwest districts and 0-5 per sweep on alfalfa in south central district. (Minn. Ins. Rpt.). NORTH DAKOTA - Averaged 8-100 per 100 sweeps in cereal grains and flax. This appears light for this time as compared with same time in 1957 when counts were 10-50 per sweep. (N. D. Ins. Rpt.). SOUTH DAKOTA - Averaged 10 per 10 sweeps on east central oats and barley. (Hantsbarger).

STINK BUGS - UTAH - *Chlorochroa sayi* spotty in Tooele and Sevier Counties and serious in several others. Averaged 3-25 per sweep in Davis County wheat. Many nymphs hatching. (Knowlton, Haws). Re-infested several hundred acres of wheat lands 5-7 days after control, particularly in Davis County. Increasing in Box Elder and Weber Counties. (Knowlton). IDAHO - *C. sayi* in wheat in south central area, damage continues to occur. (T.F.F.S.). Spotted infestations in one 70-acre barley field adjacent to sagebrush land near Grandview, Owyhee County. Population generally abundant, damage light. (Mink). NEW MEXICO - *C. sayi*, *C. ligata* and *Acrosternum hilare* infesting Valencia County barley. *C. sayi* and *C. ligata* heavy in wheat, barley and oats in Quay, Curry, Roosevelt, Lea and Eddy Counties. (N. Mex. Coop. Rpt.).

ALFALFA LOOPER (*Autographa californica*) - IDAHO - One larva per sweep in white clover fields checked in Lewis County (Dailey) and in alfalfa and red clover fields checked in Bonner, Boundary and Kootenai Counties (Gittins).

ALFALFA WEBWORM (*Loxostege commixtalis*) - OKLAHOMA - Averaged 1-2 per terminal in alfalfa in Wagoner and Muskogee Counties, 35-50 per 100 terminals in Payne and Noble Counties. (Bieberdorf, Flora).

ALFALFA WEEVIL (*Hypera postica*) - NEW JERSEY - Larvae numerous. (Ins. Dis. News1.). PENNSYLVANIA - Many pupae in south central alfalfa, adults emerging. (Pepper). Very small larvae feeding on second-cutting alfalfa at Bedford. (Udine). MARYLAND - Larvae averaged 10 per sweep on second-growth alfalfa at Frederick. Treatment needed. (U. Md., Ent. Dept.). DELAWARE - Larvae common on alfalfa in central New Castle County. Adults numerous and causing some damage in southern Sussex County. (MacCreary, Conrad). VIRGINIA - Averaged 1 per 100 sweeps in one of two alfalfa fields in Russell County, 0 in 6 Washington County fields, 6 per 100 sweeps in a Giles County field, damaged 50 percent of tips of new growth in a Montgomery County field. This is first report from Russell County. (Morris). Larvae and adults medium to severe on second-growth alfalfa, Loudoun County. (Brown). Larvae and adults medium on Shenandoah County alfalfa. (Coiner). Damaging second-growth alfalfa in one corner of a Montgomery County field. (Evans). SOUTH DAKOTA - Larvae range 40-60 per 10 sweeps in untreated alfalfa fields in west central area. (Hantsbarger). UTAH - Larvae holding back second-growth alfalfa crop in many unsprayed northern and central fields. Severe in Emery and general in Cache and Salt Lake Counties. Damage severe in Duchesne County. (Knowlton). IDAHO - Averaged 1-6 adults and 2-10 larvae per sweep

in Canyon County alfalfa. (Waters). Extremely low and well below normal in Fairfield Valley, Camas County. Damage to alfalfa about normal where control was omitted in the Shoshone, Dietrich and Richfield areas. (Portman). OREGON - Averaged 4-5 larvae per sweep in Medford area, June 1. (Goeden).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Caused moderate damage to soybeans at Cambridge. (U. Md., Ent. Dept.).

BLISTER BEETLES (*Epicauta* spp.) - LOUISIANA - Heavy in localized areas on alfalfa and soybeans, Tensas Parish. (Spink). VIRGINIA - Averaged 18 per 100 sweeps in one of two alfalfa fields in Russell County and were very light or not observed in other fields surveyed. (Morris).

CLOVER APHID (*Anuraphis bakeri*) - WASHINGTON - First small colonies on volunteer red clover near Quincy. None found in red clover seed fields. (Johansen).

CLOVER HEAD CATERPILLAR (*Grapholitha interstinctana*) - ILLINOIS - Averaged 5 per 100 sweeps in clover and alfalfa fields in east-southeast section of State. (Ill. Ins. Rpt.).

CLOVER HEAD WEEVIL (*Tychius stephensi*) - DELAWARE - Common on red clover in most of Kent County. (MacCreary, Conrad).

CLOVER LEAFHOPPER (*Aceratagallia sanguineolenta*) - UTAH - Moderately numerous in alfalfa in northern area. (Knowlton). INDIANA - Adults averaged 110 per 100 sweeps in red clover at Culver, June 6. (Wilson).

CLOVER SEED CHALCID (*Bruchophagus gibbus*) - IDAHO - Adults 5-8 per sweep in red clover fields near Ten Davis area, Canyon County. (Waters).

GARDEN WEBWORM (*Loxostege similalis*) - LOUISIANA - Light in alfalfa in Tensas Parish, heavy in Caddo Parish. Heavy but localized on corn, Ouachita Parish. (Spink). MISSOURI - Very heavy outbreak in southwest area corn, soybeans and alfalfa, expected to spread into central and northern areas of the State. No reports of extent of damage or counts have been received. (Kyd, Thomas).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - ILLINOIS - Adults averaged 90 per 100 sweeps in east-southeastern clover and alfalfa fields. (Ill. Ins. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ILLINOIS - *L. lineolaris* adults averaged 38 per 100 sweeps in clover and alfalfa in east-southeastern part of the State. (Ill. Ins. Rpt.). INDIANA - *L. lineolaris* averaged 40 adults and 550 nymphs per 100 sweeps in alfalfa and 35 adults and 280 nymphs in red clover at Culver, June 6. (Wilson). MINNESOTA - Averaged 0-6 per sweep in south central alfalfa and one in southwestern district. *L. lineolaris* nymphs ranged 1-15 per 10 sweeps in the northwest. (Minn. Ins. Rpt.). NORTH DAKOTA - Nymphs of *L. lineolaris* numerous in legume fields. (N. D. Ins. Rpt.). SOUTH DAKOTA - Nymphs and adults heavy in east central and southeast alfalfa fields, averaging 40-180 per 10 sweeps. (Hantsbarger). IDAHO - Common, often abundant in most alfalfa, white clover and red clover fields sampled, Boundary, Bonner and Kootenai Counties. Counts to more than 10 per sweep, predominantly *L. hesperus* nymphs. (Gittins). *L. artificialis* averaged 1 per 4 sweeps, *L. shulli* 2.5 per sweep and *L. hesperus* 1.5 per sweep in red clover fields sampled in Ten Davis area, Canyon County. (Waters). UTAH - Common in alfalfa and orchards, particularly *L. elisus*, and 5-10 percent *L. hesperus*. (Dorst, Knowlton). NEW MEXICO - Continue to build up on alfalfa throughout State. Damaging seed alfalfa in Chaves, Eddy and Dona Ana Counties. (N. Mex. Coop. Rpt.). ARIZONA - Averaged 40-50 adults and nymphs per 10 sweeps in alfalfa fields in Solomon area, Graham County. (Woodruff, June 9)

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - PENNSYLVANIA - Adults becoming abundant in hay in south central sections. (Pepper). MARYLAND - Adults abundant in Montgomery and Frederick County alfalfa fields, as many as 20 per sweep in some fields. (U. Md., Ent. Dept.). DELAWARE - Adults prevalent throughout State. Averaged 25 per sweep in red clover in northern Kent County. (MacCreary, Conrad). VIRGINIA - Very heavy in alfalfa in southwestern counties and controls are anticipated in later crops. Averages per sweep were 25 in a Giles County field, 7 in 2 Russell County fields, and from 7-22 in 6 Washington County fields. (Morris). Adults and nymphs on corn adjoining harvested clover north of Wytheville, Wythe County. (Bird). Adults extremely numerous over Floyd County and appear to be causing considerable damage to alfalfa. (Talley). WEST VIRGINIA - Moderate to heavy in alfalfa and red clover with adults in great numbers in northern half of State. (W. Va. Ins. Sur.). ILLINOIS - Adults averaged 112 per 100 sweeps in east-southeastern clover and alfalfa fields. (Ill. Ins. Rpt.). INDIANA - Averaged 110 adults and 145 nymphs per 100 sweeps in alfalfa and 435 nymphs in red clover at Culver, June 6. (Wilson). IDAHO - Abundant in alfalfa, clovers and numerous weeds throughout northern areas. As many as 26 adults per sweep in alfalfa and red clover in Rathdrum Prairie, Kootenai County. Infestations much greater than previously encountered in northern part of State. (Gittins, Graves). OREGON - Numerous adults emerging in legume fields in central Willamette Valley. (Foster, June 11).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - GEORGIA - Light to moderate on soybeans, Bulloch, Screven and Jenkins Counties. (Johnson). NORTH CAROLINA - Very few injuring soybeans in Johnston County. (Brim).

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - MARYLAND - Averaged 7 per sweep on second-growth alfalfa at Urbana. Damage to foliage moderate. (U. Md., Ent. Dept.). DELAWARE - Common on red clover at Woodside and on alfalfa at Lewes. (MacCreary, Conrad).

PEA APHID (*Macrosiphum pisi*) - MARYLAND - Less than 10 per sweep on second-growth alfalfa, Montgomery and Frederick Counties. Heavier on Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Very abundant in one alfalfa field, New Castle County, generally common on alfalfa and clover in other areas. (MacCreary, Conrad). VIRGINIA - Averaged 21 per sweep in 6 Washington County alfalfa fields and 7 in alfalfa in Russell County. At a low ebb in alfalfa fields and controls are not expected to be needed for remainder of this season. (Morris). WISCONSIN - Averaged 20-60 per sweep in alfalfa in 12 counties over the State. Counts too low in hay to record in 4 other counties. Large numbers were found in a Richland County oat field. (Wis. Coop. Sur.). MINNESOTA - Increasing, with 50-300 per 100 sweeps on alfalfa in northwest district. Averaged 15 per sweep in Goodhue County, 1-20 in south central district, 10 in southwest and 10-15 in west central, all on alfalfa. (Minn. Ins. Rpt.). ILLINOIS - Averaged 1,372 per 100 sweeps in east-southeast clover and alfalfa fields. (Ill. Ins. Rpt.). NORTH DAKOTA - High populations in alfalfa and sweetclover fields throughout most of southeastern area. (N. D. Ins. Rpt.). NEW MEXICO - Generally light to moderate in alfalfa through State. (N. Mex. Coop. Rpt.). OREGON - Larvae varied 5-50 per sweep with wide differences in populations for given fields in Medford area. (Goeden).

PLANT BUGS - DELAWARE - *Adelphocoris lineolatus* common on alfalfa in western Kent County. (MacCreary). ILLINOIS - Adults of *A. lineolatus* and *A. rapidus* averaged 5 and 20 per 100 sweeps, respectively, in clover and alfalfa fields in east-southeast section of the State. (Ill. Ins. Rpt.). INDIANA - *A. lineolatus* averaged 30 adults and 80 nymphs per 100 sweeps in alfalfa and *A. rapidus* 30 adults and 20 nymphs in alfalfa and 15 adults and 70 nymphs in red clover at Culver, June 6. (Wilson). MINNESOTA - *A. lineolatus*, *A. rapidus* and *Leptopterna dolabratus* common at St. Paul. *A. lineolatus* and *A. rapidus* ranged 0-6 per sweep in south central alfalfa and 30-40 per 10

northwest district. (Minn. Ins. Rpt.). SOUTH DAKOTA - *A. lineolatus* has increased in alfalfa, averaging 36 nymphs and adults per 10 sweeps in east central and southeastern areas. (Hantsbarger).

POTATO LEAFHOPPER (*Empoasca fabae*) - MARYLAND - Averaged 2 adults per 100 sweeps in Montgomery and Frederick County alfalfa, with an occasional nymph. (U. Md., Ent. Dept.). DELAWARE - On alfalfa near Kenton, Kent County. (MacCreary, Conrad). VIRGINIA - Averaged 12 per 100 sweeps in 2 Russell County fields and 10 in 6 Washington County fields. (Morris). Present in Loudoun County alfalfa fields. (Brown). ILLINOIS - Averaged 70 adults per 100 sweeps in east-southeastern clover and alfalfa fields. (Ill. Ins. Rpt.). INDIANA - Adults averaged 40 in alfalfa and 15 in red clover per 100 sweeps at Culver, June 6. (Wilson). WISCONSIN - In most alfalfa fields, numbers are low and no nymphs reported. (Wis. Coop. Sur.). MINNESOTA - More numerous at this time than in 1957. Averaged 55 per 100 sweeps on alfalfa at Rosemount and 0-1 per 50 sweeps in west central district. (Minn. Ins. Rpt.). NORTH DAKOTA - Only three specimens collected. Two in 50 sweeps of grass near a shelterbelt planting in Richland County and one in 25 sweeps of alfalfa in Traill County. (N.D. Ins. Rpt.).

RED-NECKED PEANUTWORM (*Stegasta basqueella*) - OKLAHOMA - Two fields in Caddo and Payne Counties showed 21-30 percent of peanut terminals infested. (Walton).

A SERPENTINE LEAF MINER (*Liriomyza* sp.) - NEW MEXICO - Heavy on alfalfa in Chaves County. (N.M. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Generally light throughout most of State, except for heavy infestations on alfalfa at Hagerman and Dexter, Chaves County. (N.M. Coop. Rpt.). TEXAS - Light in Dimmitt County alfalfa. (Harding). VIRGINIA - None found in fields surveyed in Washington, Russell, Giles or Montgomery Counties. (Morris). OKLAHOMA - Increasing in east central counties, some damage apparent. (Flora). No change in north central counties. (Coppock).

SWEETCLOVER APHID (*Myzocallidium riehmii*) - NORTH DAKOTA - Two fields of seedling sweetclover in eastern part of State showed 20-50 percent of plants with 4-6 per plant. (N.D. Ins. Rpt.).

SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - NORTH DAKOTA - Feeding injury on 100 percent of plants in 2 eastern seedling sweetclover fields. (N.D. Ins. Rpt.).

THRIPS - MARYLAND - General on corn in all sections. Light to moderate on soybeans, Caroline and Dorchester Counties. Streaking noticeable. (U. Md., Ent. Dept.). GEORGIA - Heavy on peanuts in several counties. (Johnson). NORTH DAKOTA - Adults averaged 7 per 20 plants at Northwood, Grand Forks County, and 5 per 20 plants at Fargo, Cass County, June 6. (Post). UTAH - Numerous on alfalfa, wheat and grass, Cache County. (Knowlton). NEW MEXICO - Heavy and damaging to seed alfalfa at Hagerman, Chaves County. Some damage to peanuts, Roosevelt County. (N. M. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - WASHINGTON - Moderate populations in red clover seed fields near Quincy largely removed by first cutting. One heavily infested field treated. (Johansen).

VARIEGATED CUTWORM (*Peridroma margaritosa*) - KANSAS - Present as far north as Graham County. (Marvin). Destruction to alfalfa continued to be heavy in untreated fields throughout central and south central areas. (Knutson).

Destroyed heads of sweetclover in Kiowa County. (Marvin). NORTH CAROLINA - On orchard grass in Catawba County. (Scott, Rabb).

WHITE GRUBS (*Phyllophaga* spp.) - KANSAS - Approximately 20,000 acres of blue-stem pasture in Geary and Riley Counties infested by one or more species. Damage in irregular spots of a few square feet or an acre or more, principally on tops and north slopes. Average 7-8 per square foot in areas where loss in nearly 100 percent. (Knutson, Burkhardt, Arnett). UTAH - Damaging lawns in Salt Lake City, Orem and Logan. (Knowlton).

ADDITIONAL NOTES

NEW YORK - CODLING MOTH larval entries found June 11 at Viewmonte, Columbia County. ROSY APPLE APHID generally abundant and APPLE APHID is increasing rapidly most areas. EUROPEAN CORN BORER egg masses first found June 11 in Hudson Valley. FLEA BEETLES remain numerous in several counties on vegetables and CUTWORM activity generally noted in Westchester and Rockland Counties. ONION MAGGOT damage severe some fields in Orange County and unusual amount of CABBAGE MAGGOT injury in Monroe County. (N. Y. Wkly. Rpt.).

NEBRASKA - Surveys in 20 south, southwest and panhandle counties revealed numerous GRASSHOPPERS in all counties. Counts 15-150 nymphs per square yard and up to 200 per square yard in a few select areas. Primarily in field margins and nearly all in first to third instars. Adult *Melanoplus bivittatus* found in a few areas. (Roselle, Andersen). Heavy flights of EUROPEAN CORN BORER occurred during past week. Egg masses averaged 100 per 100 plants in sweet corn. Leaf feeding 65-75 percent in field corn. (Weekman). ARMYWORM light to moderate, caused some damage to small grains in southeast and south central regions. Complex of armyworm, variegated cutworm and wheathead armyworm varies 0-5 per square foot in central Platte River Valley small grains. (Pruess, Andersen). PEA APHID heavy in alfalfa in Loup Valley region and panhandle counties, ranging up to 1,432 per 100 sweeps. Up to 120 ALFALFA WEEVILS per 100 sweeps causing light damage to alfalfa in panhandle region. ALFALFA PLANT BUG adults and nymphs averaged 43 per 100 sweeps in alfalfa in same area and TARNISHED PLANT BUG adults and nymphs 138. (Andersen).

ALABAMA - EUROPEAN CORN BORER averaged 6-8 larvae per stalk of corn. Heaviest infestation ever observed in northern part of State. (Eden). BLISTER BEETLES caused serious damage to alfalfa in Dallas and Wilcox Counties and GRASSHOPPERS are heavy in the same crop in Marion County. (K. Hays). THREE-CORNERED ALFALFA HOPPER damaged alfalfa in Randolph County. (Moore). Large numbers of CLOVER LEAF WEEVIL reported in 150 acres of crimson clover in Geneva County. (Ruffin). ORIENTAL FRUIT MOTH damaging tips of new growth and fruit in most parts of the State. (Ruffin). POTATO LEAFHOPPER damaging late planted potatoes in Cullman County and TOMATO HORNWORM caused damage in Baldwin and Houston Counties. (Hays).

CALIFORNIA - GRASSHOPPERS have been building up in areas from San Diego County to Shasta County and pose a serious threat to cropland. *Melanoplus devastator* predominates and *Oedaleonatus enigma* is local and spotted over the State. Maturing grasshoppers are moving from foothill areas in the Edison-Arvin area along a 25-mile front. Populations in the foothills threaten citrus and other plantings in the Strathmore area of Tulare County to Orange Cove in Fresno County. In the Camp Beale area of Yuba, Placer and Nevada Counties permanent pasture is threatened by counts of 70 or more per square yard, with treatment programs being organized. Vineyards in the Livemore area of Alameda County are being damaged. Counts of 25-125 per square yard threaten orchards and forage crops in Butte County. Counts in excess of 200 per square yard are reported in the Oak Run area, Project City, Centerville and Millville in Shasta County. Up to 30 per square yard, San Ardo, Monterey County. (Cal. Coop. Rpt.).

FRUIT INSECTS

- CODLING MOTH (*Carpocapsa pomonella*)** - OHIO - First field entrance June 12. (Cutright). ILLINOIS - Entries continue in Carbondale area. (Meyer).
- INDIANA**- Entries in commercial orchards light in Vincennes area. (Hamilton).
- WEST VIRGINIA** - Populations building up in eastern panhandle, first-brood entries noticeable on apple. (W. Va. Ins. Sur.). **DELAWARE** - First entries June 10 in Kent County. (MacCreary, Contad). **OKLAHOMA** - Less than one percent of fruit infested in unsprayed orchards. (Flora). **NEW MEXICO** - High percentage of "wormy" apples in unsprayed orchards in De Baca, Lincoln and Otero Counties. (N. Mex. Coop. Rpt.).
- EYE-SPOTTED BUD MOTH (*Spilonota ocellana*)** - MINNESOTA - First serious infestation in recent years found in orchard in south central area. (Minn. Ins. Rpt.).
- UNSPOTTED LEAF MINER (*Callisto geminatella*)** - DELAWARE - Very light infestations in apple leaves in Kent and Sussex Counties. (MacCreary, Conrad).
- LEAF ROLLERS** - IDAHO - Extremely abundant on apples, some infestations on cherries in orchards in Bonner and Boundary Counties. Some apple trees at Bonners Ferry with over one-third of foliage skeletonized. Populations rapidly entering pupation as of June 12. (Gittins, Graves, McPherson).
- ROSY APPLE APHID (*Anuraphis roseus*)** - OHIO - Increasing damage; migration in progress. (Cutright). ILLINOIS - Migrations generally completed from apple trees in Carbondale area; caused heavy damage some orchards. (Meyer).
- WEST VIRGINIA** - Moderate infestation on apple in eastern panhandle. (W. Va. Ins. Sur.). **MICHIGAN** - Winged forms leaving apples in South Haven and Coloma areas. (Hutson).
- WOOLLY APPLE APHID (*Eriosoma lanigerum*)** - NEW MEXICO - Light infestations on apple trees in De Baca, Lincoln and Otero Counties. (N. Mex. Coop. Rpt.).
- APPLE APHID (*Aphis pomi*)** - ILLINOIS - Damaging numbers some blocks of apples in Carbondale area. (Meyer). **WEST VIRGINIA** - Populations increasing on apple in Jefferson County. (W. Va. Ins. Sur.).
- EUROPEAN RED MITE (*Panonychus ulmi*)** - ILLINOIS - Third-generation hatch increasing at Carbondale. (Meyer).
- INDIANA** - Eggs increasing in Vincennes area, indicating heavier populations to be present many orchards. (Hamilton). **MICHIGAN** - Populations decreased in Kalamazoo area. (Hutson). **MINNESOTA** - Populations high, 20-30 per leaf, in few orchards in southeastern area. (Minn. Ins. Rpt.).
- ORCHARD MITES** - **WEST VIRGINIA** - Populations lower than usual on apple in eastern panhandle. (W. Va. Ins. Sur.). **NEW MEXICO** - Light to heavy infestations of *Bryobia praetiosa* complex damaging apple foliage in fruit areas of State. Populations of *Tetranychus* spp. building up in De Baca, Lincoln and Otero Counties. (N. Mex. Coop. Rpt.).
- LEAFHOPPERS** - **NEW MEXICO** - Damaging apple foliage in Lincoln and Otero Counties. Most severe on lower branches of trees. (N. Mex. Coop. Rpt.)
- PLUM CURCULIO (*Conotrachelus nenuphar*)** - ILLINOIS - Punctures found at Carbondale, Graffton and Nauvoo on June 6. Apparently more important in northern area of State than normal. (Meyer). **LOUISIANA** - Heavy infestations in Sabine Parish. (Spink). **GEORGIA** - Heavy emergence of adults from soil at Fort Valley first week of June. (Snapp, June 6). **MICHIGAN** - Remains very active all fruit growing sections of State. (Hutson). **OKLAHOMA** - In unsprayed orchards, 0.5-1 percent of fruit infested. (Flora).

DOGWOOD TWIG BORER (Oberea tripunctata) - TEXAS - Adult emergence, from plum limbs collected last winter, first week of May and continued through month. Peak emergence third week of May. (Turney).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Infestations greater this year than recorded in the past in commercial and home orchards over State. (Horn).

GREEN PEACH APHID (Myzus persicae) - MICHIGAN - Troublesome about Coloma, South Haven and Paw Paw. (Hutson).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - ILLINOIS - Populations appear low this year in commercial orchards in Carbondale area. (Meyer).

BLACK CHERRY APHID (Myzus cerasi) - MICHIGAN - Found generally where sweet cherries are grown in State. Control effective and little damage expected. (Hutson).

BLACK CHERRY FRUIT FLY (Rhagoletis fausta) - IDAHO - Appearance reported in CEIR 8 (24) : 510 at Twin Falls, believed to be first record of occurrence in area. (Gittins). MICHIGAN - Emerged at Lansing and Shelby June 6 and Benzonia June 10. (Hutson).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - IDAHO - Common in cherry trees at Weiser, adult emergence abundant. (Hackler).

A WALNUT BLISTER MITE (Eriophyes erineus) - OREGON - Heavy infestation, nearly all leaves blistered, near Salem. (Capizzi).

PECAN CATERPILLARS (Datana spp.) - FLORIDA - Infestations of D. integerrima unusually high on pecans. (Fla. Coop. Sur.). LOUISIANA - D. integerrima infesting pecans in greater New Orleans area. (Spink). OKLAHOMA - Eggs and small larvae on pecans in central and eastern areas. (Flora). TEXAS - Feeding on pecans in Caldwell, Guadalupe, Gonzales, Bastrop and San Saba Counties. Defoliating trees where control not applied. (Turney).

A CATOCALA (Catocala sp.) - TEXAS - Emerging week of June 2-6 in Gonzales and Guadalupe Counties. Larvae damaged pecans earlier in season. (Turney).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - All eggs hatched in east central area, still some egg laying in north central counties. Percent nut clusters infested 75-85 in McIntosh County, 5-10 in Muskogee and Wagoner Counties, and 35-45 in Payne County. (Bieberdorf, Flora).

A TORTRICID (Acleris lipsiana) - OREGON - Causing considerable concern to cranberry growers in Bandon area. Larvae tying uprights and fruiting stems together in several bogs. (Capizzi).

Citrus Insect Situation, Lake Alfred, Florida, for Second Week in June - PURPLE SCALE activity increased and will continue to increase until mid-July. FLORIDA RED SCALE declined but there will be an increasing trend through most of June. CITRUS RED MITE increased in activity, but peak will be reached within a week. CITRUS RUST MITE activity declined on leaves and was unchanged on fruit. There will be a strong increasing trend as soon as wet weather begins. A few MEALYBUG infestations are appearing. (Pratt, Thompson, Johnson, June 11).

FIG PESTS - CALIFORNIA - Population of Rhyncophytoptus ficifoliae and Lepidosaphes ficus requiring control of figs in Madera and Fresno Counties this season. (Cal. Fig Inst.).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - RHODE ISLAND - Egg masses on potatoes at Newport. (Peabody). VIRGINIA - Generally distributed in eastern area. First brood entering pupation. (Hofmaster). NORTH DAKOTA - Counts 7 adults and 12 egg masses per 50 plants at Kindred, Cass County. (N. D. Ins. Rpt.). UTAH - Unusually numerous in west Weber, Taylor and Warren areas of Weber County. More damaging than normal in Davis County. (Knowlton). NEW MEXICO - Moderate infestations on potatoes near Clovis, Curry County. Eggs numerous. (N. Mex. Coop. Rpt.). IDAHO - Considerable egg laying in potato fields near Burley on June 10. (T. F. F. S.). WASHINGTON - Larvae completely defoliated black nightshade plants near Quincy. (Johansen).

FLEA BEETLES - PENNSYLVANIA - *Epitrix cucumeris* adults still plentiful in many potato fields in south central area. (Pepper). CONNECTICUT - Severe on cabbage, potatoes and tobacco in Connecticut River Valley. (Kring). DELAWARE - *E. cucumeris* generally present on potatoes and *Phyllotreta cruciferae* common on cabbages in western Kent County. (MacCreary, Conrad). VIRGINIA - *Chaetocnema confinis* damaging young sweet potato plants in eastern area. (Hofmaster). WEST VIRGINIA - Moderate to heavy infestations of *E. cucumeris* on potatoes and tomatoes over State. (W. Va. Ins. Sur.). NEW MEXICO - Damaging vegetables in Quay, Curry and Lea Counties. (N. Mex. Coop. Rpt.).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NEW JERSEY - Hatching in central area on potatoes. (Ins. Dis. Newsl.). DELAWARE - Larvae entering potato stalks in Sussex County. (MacCreary, Conrad).

POTATO LEAFHOPPER (*Empoasca fabae*) - DELAWARE - Common on potatoes some areas. (MacCreary, Conrad). IOWA - Abundant on potatoes and beans. (Iowa Ins. Inf.). VIRGINIA - Very light on potatoes in eastern area. (Hofmaster). MARYLAND - Generally light on beans and potatoes on Eastern Shore. (U. Md., Ent. Dept.).

POTATO APHID (*Macrosiphum solanifolii*) - DELAWARE - Common on potatoes and tomatoes some areas. (MacCreary, Conrad). VIRGINIA - Heavy on tomatoes in localized areas of eastern Virginia. (Hofmaster). MARYLAND - Heavy and stunting tomato plants at Hurlock and Preston. Controls needed. (U. Md., Ent. Dept.). PENNSYLVANIA - Infestation increasing on tomatoes and potatoes in south central area. (Pepper).

APHIDS - IOWA - Heavily infesting potatoes and tomatoes. (Iowa Ins. Inf.).

CELERY LEAF TIER (*Udea rubigalis*) - CALIFORNIA - Light infestation of adults from potato plants in Fresno, Fresno County. (Cal. Coop. Rpt.).

GRASSHOPPERS - NEW MEXICO - Destroying stands of tomatoes and cabbage at Lovington, Lea County. Continues to damage tomatoes in Luna County. (N. Mex. Coop. Rpt.).

HORNWORMS (*Protoparce* spp.) - ARKANSAS - Eggs on tomatoes in southeastern area. (Rolston, June 7). LOUISIANA - Medium infestation on tomatoes in St. Landry Parish. (Spink). GEORGIA - Light infestations on pimiento peppers in Pike County. Moderate infestations in Jenkins County. (Boland, Johnson). ARIZONA - Attacking tomatoes and grapes throughout Casa Grande Valley. (Countryman, June 3). NEW MEXICO - Eggs abundant on tomatoes at Deming, Luna County, and larvae feeding at Tucumcari, Quay County. (N. Mex. Coop. Rpt.).

TOMATO FRUITWORM (*Heliothis zea*) - ARKANSAS - Infestations on tomatoes in southern area. (Whitcomb, June 7). LOUISIANA - Medium infestations in Sabine, St. Bernard and West Carroll Parishes. (Spink). TEXAS - Light infestations on tomatoes and sweet corn in Dimmit County. (Harding).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - CALIFORNIA - Adults lightly infesting tomato leaves at Chula Vista, San Diego County. Det by W. Simmonds. (Cal. Coop. Rpt., May 23).

STALK BORER (Papaipema nebris) - NORTH CAROLINA - Damaging stalks of tomato plants in Carteret County. (Scott, Farrier).

VARIEGATED CUTWORM (Peridroma margaritosa) - NORTH CAROLINA - Forty percent loss of 75 acres of cabbage in Carteret County, June 2. (Scott, Rabb).

DIAMOND-BACKED MOTH (Plutella maculipennis) - IDAHO - Larvae causing some damage to rape foliage in seed fields in Nez Perce County. (Nonini). VIRGINIA - Larvae unusually heavy on cabbage in eastern area. (Hofmaster). WISCONSIN - Moderate population in Milwaukee County on cabbage. (Wis. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Larvae abundant and destructive to cabbage near Cambridge. (U. Md., Ent. Dept.). NEW MEXICO - Light infestations on lettuce in Bernalillo County. (N. Mex. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - DELAWARE - Small numbers on beans in southern Sussex County. (MacCreary, Conrad).

PEA WEEVIL (Bruchus pisorum) - UTAH - Active most pea areas, northern Utah. Population above average in Weber and Box Elder Counties. (Knowlton). IDAHO - Averaging almost one adult per sweep on pea fields entering bloom stage in Plummer and Tensed areas. (Gittins).

PEA APHID (Macrosiphum pisi) - UTAH - Moderate in pea fields in Cache County. (Knowlton). IDAHO - Populations low on peas in Worley area, but ranging up to 10 per sweep at Plummer and Tensed. (Gittins). WISCONSIN - Counts in peas generally low in northwestern area, averaging about one per sweep. In eastern counties, counts somewhat higher, 4.7 in Calumet and 9.8 in Sheboygan. In Manitowoc County, colonies averaged 3 per plant in 6 inch peas. (Wis. Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Becoming noticeable in northern area. (Knowlton). MARYLAND - Generally light on commercial acreages of beans in Dorchester County. Heavy some home gardens. (U. Md., Ent. Dept.).

LEAFHOPPERS - NEW MEXICO - Heavy infestations damaging beans at Portales, Roosevelt County, damaging tomatoes at Lovington, Lea County, and causing some damage to melon foliage in Eddy County. (N. Mex. Coop. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Light to moderate damage on beans in Dorchester County. (U. Md., Ent. Dept.).

BEEB WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Some oviposition in few sugar beet fields in Grafton area. (N. D. Ins. Rpt.). IDAHO - Outbreak occurring in much of Franklin County. Surveys underway to determine extent and degree of infestation. (Roberts). UTAH - Damaging several sugar beet fields in Carbon County; most serious in Sevier County. Spotted damage other counties. (Knowlton).

BEEB LEAFHOPPER (Circulifer tenellus) - IDAHO - Adults ranged up to 50 per plant on sugar beets at Arena Valley, Canyon County, week of May 26. Numbers dropped to 1-5 per plant during past week. (Waters). Surveys throughout south central area indicated that migrants have invaded area, presumably from south, but have not increased in numbers since May 28. (T. F. S.).

A FALSE CHINCH BUG (Nysius sp.) - OKLAHOMA - Populations numerous on many weeds and garden plants. Winged forms dispersing. (Bieberdorf).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - ARKANSAS - Infestations heavier than usual in State. (Barnes, June 7). DELAWARE - Continue numerous on squash near Bethel, Sussex County. (MacCreary, Conrad). MARYLAND - Heavy on cucumbers at Vienna. Moderate on squash at Cambridge. (U. Md., Ent. Dept.).

ONION MAGGOT (Hylemya antiqua) - MASSACHUSETTS - Very abundant and causing serious damage. (Crop Pest Cont. Mess.). MICHIGAN - Extremely troublesome in Fennville, Jackson and Newaygo areas. Larvae pupating and present wave of damage subsiding. (Hutson).

ASPARAGUS BETTLES (Crioceris spp.) - DELAWARE - C. asparagi and C. duodecimpunctata very common on asparagus ferns near Bridgeville. (MacCreary, Conrad). OREGON - Adults of C. asparagi defoliated nearly all untreated asparagus in Umatilla County. (Capizzi).

ALFALFA LOOPER (Autographa californica) - WASHINGTON - Causing severe damage to lettuce in Puyallup Valley. (Howitt). OREGON - A. californica and Vanessa cardui common in pea fields in Umatilla County. Control recommended several instances. A. californica present most mint fields in Umatilla County, averaging 4 larvae per 10 sweeps. (Capizzi).

THRIPS - NEW MEXICO - Moderate infestation on lettuce in Bernalillo County. Continue to damage onions in Mesilla Valley. (N. Mex. Coop. Rpt.)

STRAWBERRY LEAF ROLLER (Ancylics comptana fragariae) - IDAHO - Becoming abundant, damage severe, on strawberries in gardens near Weiser. (Hackler). Common but spotted in gardens in Bonners Ferry area. Damage minor. (Graves).

SPIDER MITES - OREGON - Building up on hop in Umatilla County. Tetranychus telarius appearing in small numbers on mint in Umatilla County; considerable damage noted to mint in area in 1957. (Bierman).

SPITTLEBUGS - WISCONSIN - Moderate to heavy populations of nymphs on strawberries in Door County. (Wis. Coop. Sur.).

SLUGS (Agriolimax agrestis and Arion ater) - WASHINGTON - Heavy damage to strawberries in Puyallup Valley. (Howitt).

A PHYCITID MOTH (Ephestiodes gilvescentella) - CALIFORNIA - Medium to heavy infestations on leaves of strawberry plants in Watsonville area of Santa Cruz County. Det. G. Okumura. (Cal. Coop. Rpt., May 23).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - UTAH - Damaging strawberries in several northern Utah counties, with occasional damage to raspberry roots. (Knowlton).

TOBACCO INSECTS

GREEN PEACH APHID (Myzus persicae) - GEORGIA - Light infestations on tobacco in Toombs, Tattnall, Candler, Bulloch and Emanuel Counties. (Johnson).

HORNWORMS (Protoparce spp.) - MARYLAND - First brood eggs being deposited on tobacco at Aquasco. (U. Md., Ent. Dept.). NORTH CAROLINA - Average per 50 plants was 3.5 eggs and 1 larva in Robeson County (Strickland) and 6.0 eggs and 1-2 larvae in Johnson County (Rabb).

WIREWORMS - MARYLAND - Light damage to newly set tobacco at Aquasco. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (*Heliothis virescens*) - GEORGIA - Light to moderate infestations on tobacco in Toombs, Tattnall, Candler, Bulloch and Emanuel Counties. (Johnson). NORTH CAROLINA - Infestation 25 percent May 21 in Columbus County, similar infestation on June 3. (Johnson). None found in 100 plants examined in Columbus County June 7. (Strickland). Very few in Johnson County June 9. (Rabb).

CUTWORMS - CONNECTICUT - Has been a problem some tobacco and vegetable fields in Connecticut River Valley. (Kring). VIRGINIA - Damaging tobacco plants in some fields in southwestern area. (Morris). NORTH CAROLINA - Up to 10 percent of burley tobacco plants injured by *Agrotis ypsilon* in areas of Macon County. (Wrinn, Jones, Rabb).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Very heavy on newly set tobacco plants in Prince Georges County. Many fields with 25 or more adults per plant. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - None found in from 2-7 fields examined in Richmond, Gaston, Cleveland, Union, Montgomery, Sampson, Warren, Northampton and Wilson Counties. Counts 0.5-1 per 100 plants in few fields in Hoke, Scotland, Anson, Edgecombe, and Hertford Counties. (Jones et al.). SOUTH CAROLINA - Infestations spotty. Counts as high as 390 per acre in Berkeley County and 300 per acre in Dorchester County. (Cott. Lett.). Many fields in Florence and Darlington Counties with 15-30 per acre. (Fye et al.). GEORGIA - Punctured squares averaged 10 percent in 8 of 27 fields inspected in 19 southern counties. (Johnson). ALABAMA - Infestations light; average one adult per 3 acres in Franklin and Marion Counties. (Ruffin). TENNESSEE - Only one adult found in western area cotton fields. Some terminal bud feeding noted. (Locke). MISSISSIPPI - Populations remain extremely light over delta area. In hill area of State, light to heavy infestations reported. (Merkl et al.). LOUISIANA - Averaged 1 to 3 per 100 feet of row in Tensas Parish; just appearing in East Carroll Parish. (Spink). Averaged 24 per acre in 93 fields inspected in Madison Parish. Percentage survival in hibernation cages to June 11 at Tallulah was 3.86 in 1958, 0.88 in 1957, 1.34 in 1956, 1.20 in 1955 and 3.44 in 1954. (Smith et al.). TEXAS - Infestations light to medium in lower Rio Grande Valley, upper coastal, southwestern, south central, central and eastern areas. (Gaines). Survival in hibernation cages was 5.72 percent as of June 13 compared with 5.38 in 1957 at Waco. Weevils found at average rate of 141 per acre in 12 untreated fields and 45 per acre in 44 treated fields in McLennan and Falls Counties. (Parencia et al.).

BOLLWORMS (*Heliothis* spp. et al.) - NORTH CAROLINA - Important locally. (Jones et al.). SOUTH CAROLINA - Appearing in all areas of State. (Cott. Lett.) Some damage reported in Florence area. (Fye et al.). GEORGIA - Eggs found in 27 fields in 19 southern counties, ranging from 1-94 eggs per 100 terminals with average of 24 per 100 terminals. Larvae found in 16 of 27 fields, ranging from 1-21 per 100 terminals and averaging 2.7 larvae per 100 terminals. (Johnson). ALABAMA - Infestations, mostly *H. virescens*, medium to light in central and southern areas. (Ruffin). MISSISSIPPI - General infestations in delta counties. Damaged terminals common in older cotton. Square damage severe in few fields squaring cotton. Eggs common most fields. More larvae in area at this time of year than observed for many years. (Merkl et al.). LOUISIANA - Eggs present in Tensas, East Carroll and Ouachita Parishes. (Spink). Eggs and small larvae in early cotton in Madison Parish. Some small squares damaged. (Smith et al.). TEXAS - Eggs averaged 1.2 and larvae 0.2 per 100 terminals in 57 fields in McLennan and Falls Counties. (Parencia, et al.). NEW MEXICO - Building up in cotton fields in Mesilla and Pecos Valleys. (N. Mex. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Twelve larvae emerged from ten cages in an emergency test from April 5 through June 9. (Woodruff). TEXAS - Infestations light to medium in upper coastal, coastal bend, southwestern and central areas. (Gaines).

CUTWORMS - ARKANSAS - *Agrotis ypsilon* reduced stands of cotton in eastern area. (Boyer, June 7). LOUISIANA - Some present in Caddo and Richland Parishes. (Spink). SOUTH CAROLINA - Damaging cotton in central area. (Cott. Lett.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Larval counts 2-6 per 100 sweeps in fields near Eloy and Marana. (Bottger, Kauffman, Sheets). NEW MEXICO - Light infestations in Chaves, Quay, Roosevelt and southern area counties. (N. Mex. Coop. Rpt.).

GARDEN WEBWORM (*Loxostege similalis*) - LOUISIANA - Heavy but localized infestations on cotton in Ouachita Parish. (Spink).

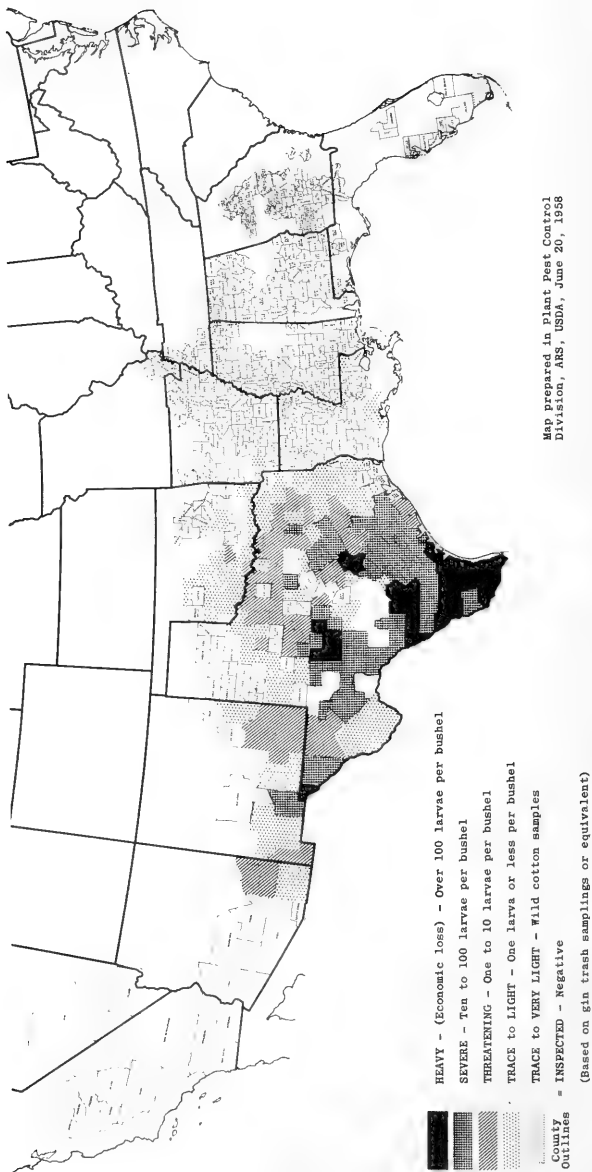
COTTON LEAFWORM (*Alabama argillacea*) - TEXAS - First confirmed report of season in Calhoun County, June 10. (Gaines, Cook).

THRIPS - NORTH CAROLINA - Quite abundant some fields in Scotland County, curling leaves several other counties. Some treatment applied. (Cott. Lett.). SOUTH CAROLINA - Damaging cotton in coastal counties. (Cott. Lett.). Some ragging of plants noted in Florence area. (Fye et al.). ALABAMA - Infestations light. (Ruffin). TENNESSEE - Populations increased, infestations vary in western area. Some control needed. (Locke). MISSISSIPPI - More numerous than at any time this season in delta counties. Young cotton still susceptible to attack. (Merkl et al.). LOUISIANA - Medium infestations in Richland, East Carroll and Grant Parishes. (Spink). Averaged 2.86 per plant in 66 fields in Madison Parish. Infestation has become general and causing severe damage to late-planted cotton. (Smith et al.). TEXAS - Light to heavy in north central, northwestern, northeastern and north and south plains areas. (Gaines). Infestations declining but injurious numbers remain late-planted, untreated fields in McLennan and Falls Counties. (Parenacia et al.).

APHIDS - SOUTH CAROLINA - Present in nearly all counties. Increasing in upper coastal plain and lower piedmont counties. (Cott. Lett.). No damage in Florence area. (Fye et al.). GEORGIA - Light infestations of *Aphis gossypii* in Laurens, Toombs, Tattnall and Glascock Counties. (Johnson). ALABAMA - Infestations light. (Ruffin). TENNESSEE - Slight increase in western area. (Locke). MISSOURI - Most fields earlier cotton with heavy spotty populations of *A. gossypii*. Few fields with general infestation, counts ranging from 20 to over 50 per plant. Parasites and diseases building up rapidly, chemical controls not anticipated. (Kyd, Thomas). MISSISSIPPI - Light to medium infestations general in delta counties. Some control required. (Merkl et al.). LOUISIANA - Light to medium in Allen and East Carrol Parishes. (Spink). Very few in Madison Parish. (Smith et al.). OKLAHOMA - Moderate infestations. (Flora). NEW MEXICO - *A. gossypii* generally light. (N. Mex. Coop. Rpt.).

FLEAHOPPERS - TENNESSEE - Populations increasing in western area. (Locke). MISSISSIPPI - Light populations most fields older cotton in delta counties. (Merkl et al.). TEXAS - Infestations heavy in southwestern, south central, central and eastern areas and light to medium in coastal bend, upper coastal and western areas. (Gaines). General infestations heavier than in many years in McLennan and Falls Counties. Infestations averaged 54.1 per 100 terminals in 12 untreated fields and 26.5 in 45 treated fields. All fields need continued protection. (Parenacia et al.). OKLAHOMA - Forty to fifty per 100 terminals in east central area. (Flora). NEW MEXICO - About 20-30 black fleahoppers per 100 sweeps damaging cotton in Dona Ana County. *Psallus seriatus* also building up in cotton fields in southern counties. (N. Mex. Coop. Rpt.). ARIZONA - Populations

STATUS OF PINK BOLLWORM INFESTATIONS AS OF JAN. 1958



of black fleahopper, probably *Spanagonicus albofasciatus*, ranged from light to heavy in Salt River Valley. Infestations in Buckeye area from 4-20 per 100 sweeps. (Bottger, Kauffman, Sheets). Populations building up in cotton and alfalfa fields in Gila Valley, Graham County. (Woodruff, June 9).

LYGUS BUGS (*Lygus* spp.) - MISSISSIPPI - *L. lineolaris* infestations light and common in older untreated cotton. (Merkl et al.). NEW MEXICO - Beginning to damage cotton squares in southern counties. About 25-30 per 100 sweeps in Dona Ana County. (N. Mex. Coop. Rpt.). ARIZONA - Adults increasing most areas. Populations ranged 4-12 per 100 sweeps in cotton fields near Eloy and Marana and averaged 16 per 100 sweeps in field in Waddell area. (Bottger, Kauffman, Sheets). Average 10-12 per 10 sweeps in cotton fields in Safford area. (Woodruff, June 9).

SPIDER MITES - NEW MEXICO - Building up in cotton fields near Hagerman, Chaves County. (N. Mex. Coop. Rpt.). ALABAMA - May be a serious problem if dry weather continue over State. (Ruffin).

GRASSHOPPERS - NEW MEXICO - Damaging cotton in Otero, De Baca, Lea, Roosevelt, Luna and Hidalgo Counties. (N. Mex. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE SPITTLEBUG (*Aphrophora parallela*) - PENNSYLVANIA - More abundant than usual on pine in northeast and 15-20 per tree in some plantations in southeast. (Gesell, Udine). WISCONSIN - Heavy infestation in Marinette County jack pine. High populations in 4 other counties. (Wis. Coop. Sur.).

NORWAY-MAPLE APHID (*Periphyllus lyropictus*) - WASHINGTON - Light populations increasing on Norway maples at Union Gap, Yakima County. (Landis). IDAHO - Alates extremely abundant on maples in Sandpoint. (Gittins).

NANTUCKET PINE MOTH (*Rhyacionia frustrana*) - ARKANSAS - Infestations in Cleburne and White Counties on young pine. First brood reached pupal stage. (Boyer). NORTH CAROLINA - Attacking ornamental pines in Sampson and Pitt Counties. (Scott, Farrier). OKLAHOMA - Almost all in pupal stage in Payne County; 30-40 percent of tips infested. (Bieberdorf).

EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) - INDIANA - Adults emerging at Bristol and LaPorte, June 10. (Schuder). PENNSYLVANIA - Pupation complete in Susquehanna County. (Gesell). WISCONSIN - Emerging in southern and southeastern counties. Pupae in northeastern lakeshore counties expected to emerge, if not already started. (Wis. Coop. Sur., June 13).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Aerial spray program has been completed in the State. A total of approximately 107,000 acres was sprayed under State contract and 380,000 under Federal contract. (PPC). Egg hatch observed May 7 at Westfield, MASSACHUSETTS and several locations in VERMONT from May 5-12. Control treatments for suppression of heavy populations completed on 2,305 acres in NEW YORK, 10,808 acres in CONNECTICUT, 9,700 acres in MASSACHUSETTS and 137 acres at York, MAINE, by State and local agencies. Scouting of 1957 positive trap sites on Long Island, New York, and in NEW JERSEY has been completed. No new egg masses have been found. (PPC, East. Reg., May Rpt.).

GREEN-STRIPED MAPLE WORM (*Anisota rubicunda*) - IOWA - Moths flying and larvae expected to be feeding about June 20. (Iowa Ins. Inf.). NORTH CAROLINA - Defoliating leaves of maples in Cherokee County. (Nave, Rabb).

WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma*) - IOWA - Hatching in all parts of State. Damage to elm, maple, oak, and roses. (Iowa Ins. Inf.).

DOUGLAS-FIR TUSSOCK MOTH (*Hemerocampa pseudotsugata*) - IDAHO - A widespread infestation in Owyhee County with populations mostly in egg to second instar. (Cole, Clark).

FALL WEBWORM (*Hyphantria cunea*) - ARKANSAS - Active in southwest as far north as Hot Springs. (Warren).

A NYMPHALID LARVA - CALIFORNIA - Heavy infestations of cottonwood trees in Yreka, Siskiyou County. (Cal. Coop. Rpt.).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - MINNESOTA - Cooperative spray project involving about 12,000 acres of spruce-fir type on Kabetogama Peninsula in northwest part of St. Louis County completed week of June 13. Counts in Ely and Crane Lake areas ranging 15-21 per 15-inch twig. (Minn. Ins. Rpt.).

TENT CATERPILLARS (*Malacosoma* spp.) - NEW MEXICO - Large populations feeding on cottonwoods at Lovington, Lea County. (N. M. Coop. Rpt.). UTAH - Foliage badly stripped on 2 acres of willow, cottonwood and rose, with minor damage to dogwood, birch and squawbush. Extensive to maples in Wellsville mountain area. Many larvae pupating. (Knowlton). MINNESOTA - Heavy feeding of *M. disstria* likely to continue until about June 20 depending on weather conditions. (Minn. Ins. Rpt.).

A PINE TIP MOTH - TEXAS - Heavy infestations in loblolly natural reproduction in Grimes and Waller Counties. Large larval and pupal populations in terminal buds. (Young).

A GEOMETRID - ARKANSAS - Feeding on a wide variety of trees in lower White River area in Monroe and Arkansas Counties. Willow and pecan seemed to be preferred hosts. About 50 percent or more in pupal stage, June 7. (Boyer). NORTH CAROLINA - Undetermined species defoliating hickory and apple trees in southern half of Cherokee County. (Nave, Rabb).

PINE SAWFLIES (*Neodiprion* spp.) - IDAHO - A widespread infestation of second and third-instar larvae of *N. abietis* complex on Douglasfir stands in many areas of Owyhee County. (Cole, Clark). NORTH CAROLINA - *Neodiprion* sp., noted in CEIR 8(21) : 415 as severely defoliating pines in Person and Granville Counties, has been determined as *Neodiprion excitans* by B. Burks. (Farrier). WISCONSIN - *N. nanulus* larvae numerous in a plantation east of Montello and in many natural stands in Jackson and Juneau Counties. (Wis. Coop. Sur.). INDIANA - *N. sertifer* pupating at Bristol, June 10. (Schuder). TEXAS - Defoliation of slash and loblolly pine seedlings in Jasper, Rusk and Sabine Counties. (Young).

GREEN ROSE CHAFER (*Dichelonyx backi*) - MONTANA - Heavy and causing noticeable tree damage to Douglasfir Christmas tree stock from all parts of northwestern Montana. Adults attacking terminal growth of Douglasfir and young western larch trees. (Missoula For. Ins. Lab.).

LOCUST LEAF MINER (*Chalepus dorsalis*) - DELAWARE - Fairly common on black locust in areas of New Castle and Kent Counties. (MacCreary, Conrad).

BIRCH LEAF MINER (*Fenusa pusilla*) - NEW JERSEY - Untreated birches over the State have 50-95 percent of their leaves infested. Sprayed trees have as high as 10-15 percent of leaves infested. These heavy populations destroying large areas of the leaves and second generation may finish off the remaining leaves on many birches. (Ins. Dis. Newsl., Collins).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - From an aerial flight made May 29 of the Hardin County areas reported last week 56 spots are suspected of having infestations. These spots vary in size from a single tree to 40 pines in a group. (Young).

PALES WEEVIL (Hylobius pales) - PENNSYLVANIA - Larvae easy to find in pine stumps cut last fall in Columbia and Susquehanna Counties, heavy in stumps and considerable feeding in plantations in Bedford and Indiana Counties. (Gesell, Udine).

COTTONWOOD LEAF BEETLE (Chrysomela scripta) - OREGON - Causing extensive defoliation of will and cottonwood in Umatilla County, week of June 8. (Capizzi).

GRASSHOPPERS - VIRGINIA - Heavy and feeding on leaves of oak, basswood and poplars in an area of Dickenson County. (Morris).

UGLY-NEST CATERPILLAR (Archips cerasivorana) - PENNSYLVANIA - Very abundant on chokecherry along roadsides. (Gesell).

SPRUCE NEEDLE MINER (Taniva albolineana) - MONTANA - Damage to blue spruce ornamentals at Troy ranger station. (Missoula For. Ins. Lab.).

SCALE INSECTS - RHODE ISLAND - Heavy infestation of Asterolecanium variolosum on oak at Lincoln, June 5. (Mathewson). MARYLAND - Asterolecanium puteanum seriously injuring holly trees at Centerville, June 6. (U. Md., Ent. Dept.). MISSISSIPPI - Oak twigs injured by Lecanium quercifex in Oktibbeha County, June 9. Euonymus plants infested with Unaspis euonymi from Oktibbeha and Sunflower Counties. (Hutchins). OKLAHOMA - Heavy infestations of Kermes sp. on oaks in Bryan County. Severe damage. (Flora). NORTH DAKOTA - Eggs of Chionaspis fufurra hatching in Fargo area. (N. D. Ins. Rpt.). MONTANA - Phenacaspis pinifoliae prevalent on spruce at Troy ranger station. (Missoula For. Ins. Lab.). IDAHO - Infestations of Pulvinaria innumerabilis on maples at Twin Falls. (T. F. F. S.). Some extremely heavy infestations on maples at Sandpoint. (Gittins, McPherson).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Adults feeding on rose bushes at Great Bridge, Norfolk. (Williams). NORTH CAROLINA - Adults emerging generally from Fayetteville east. (PPC).

APHIDS - RHODE ISLAND - Heavy foliage infestation of beech by Phyllaphis fagi. (Stoner). PENNSYLVANIA - Stegophylla quercicola very abundant on oak and curling the leaves, Bedford County. Det. J. O. Pepper. (Udine). NORTH CAROLINA - Prociphilus tessellatus infesting maple in Wilson, Franklin and Union Counties. (Scott, Lewis, Morgan, Olive). SOUTH DAKOTA - Anuraphis viburnicola damaging viburnum in Minnehaha County. Eggs of Pineus strobi hatching on white pine in Sioux Falls vicinity. (Lofgren). MONTANA - Damage to ornamental ponderosa pine near Stanford. (Missoula For. Ins. Lab.). IDAHO - Infestations general on trees and shrubs with some damage at St. Anthony. (Garner). UTAH - Heavy on some willows. Macrosiphum rosae unusually abundant in northern area. (Knowlton).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - RHODE ISLAND - Dissections of logs containing larvae show that pupation has not started at Kingston by June 10. By that date last year a peak of adult emergence was approaching. (Stoner). WISCONSIN - Five more trees with Dutch Elm disease bringing the total up to 8 trees this far in 1958. The beetle has been feeding for some time but peak emergence not reached. (Wis. Coop. Sur.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - WASHINGTON - All Stages found in light numbers, though increasing at Union Gap, Yakima County (Landis). ARKANSAS - Locally heavy infestations in some areas of northwest part of State. (Barnes). OREGON - Larvae causing noticeable defoliation of elm in Salem area, June 9. (Capizzi). DELAWARE - Light to moderate damage to elms near Millsboro, Sussex County. (MacCreary, Conrad). IDAHO - Larvae very numerous on elms at Parma. Extremely severe defoliation expected on all untreated trees in area. (Waters).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (Siphona irritans) - OKLAHOMA - Heavy throughout State on untreated animals. Ranged from 200 on cows to 4,000 on bulls. (Howell). WISCONSIN - Very numerous on some herds. (Wis. Coop. Sur.). LOUISIANA - Heavy in Sabine, Tangipahoa, Richland, Allen and West Carroll Parishes. (Spink). ALABAMA - Very high in all parts of the State. (Ruffin).

STABLE FLY (Stomoxys irritans) - OKLAHOMA - Averaged 10-25 per animal on Payne County cattle. (Coppock).

TABANIDS - ARKANSAS - Tabanus sp. common in eastern area and especially heavy in northeastern area. (Boyer, June 7). LOUISIANA - Extremely heavy in most livestock areas of State. (Spink).

COMMON CATTLE GRUB (Hypoderma lineatum) - IDAHO - Adults abundant and general in Washington County. (Hackler).

SHEEP KED (Melophagus ovinus) - RHODE ISLAND - Heavy on sheep at Bristol, Bristol County. Owner claims one animal killed by this species. (Mathewson, June 5).

AMERICAN DOG TICK (Dermacentor variabilis) - MARYLAND - Taken from dogs at Waldorf. Seem to be abundant this year. (U. Md., Ent. Dept.). OKLAHOMA - Decreasing with 5-10 per 100 sweeps in heavily infested areas of Payne County. (Coppock).

HOUSE FLY (Musca domestica) - NEW MEXICO - Very numerous and annoying in southern counties. (N. M. Coop. Rpt.). PENNSYLVANIA - Adults becoming abundant around barns in south central part of State. (Pepper). ALABAMA - Very heavy over the State. (Ruffin).

MOSQUITOES - UTAH - Troublesome in parts of 6 counties. Aedes dorsalis severe in Warren area of Weber County. (Knowlton, Fronk). NORTH DAKOTA - Culex tarsalis and Culiseta inornata collected. A large emergence of Aedes vexans expected weekend of June 14. (N. D. Ins. Rpt.). MARYLAND - Adults of Aedes sollicitans abundant and a nuisance in Vienna section of Dorchester County. (U. Md., Ent. Dept.). WISCONSIN - Have not been troublesome in all areas but some localities have heavy populations. (Wis. Coop. Sur.). LOUISIANA - Extremely heavy in most livestock areas of State. (Spink). IDAHO - Mostly Culex sp. extremely abundant and causing considerable annoyance in Bonners Ferry area. (Gittins). Other species extremely abundant in Bovill area, Latah County. (Blair).

BENEFICIAL INSECTS

AN ALKALI BEE (Nomia melanderi) - WASHINGTON - Adults began emerging at Ephrata about May 20. (Hokanson).

HONEY BEE (Apis mellifera) - RHODE ISLAND - Swarming, with particular reports from Usquepaug June 10 and West Kingston June 11. (Stoner). MINNESOTA - Inspections indicate rather serious starvation problem in many northern apiaries. Cool weather has delayed brood buildup. (Minn. Ins. Rpt.).

A KLAMATHWEED BEETLE (Chrysolina gemellata) - IDAHO - Adults extremely abundant in Klamathweed in Bonners Ferry and Moyie Springs areas, with much defoliation. Adults 520 per 20 sweeps at Moyie Springs. (Graves, Gittins).

PARASITES AND PREDATORS - ILLINOIS - Damsel bugs and lady beetle adults and larvae each averaged 10 per 100 sweeps in east-southeastern clover and alfalfa fields and syrphid fly larvae averaged 2.5 per 100 sweeps. (Ill. Ins. Rpt.). NORTH DAKOTA - Adult lacewings moderately abundant in small grains and legumes, with few larvae present. Lady beetles light to moderate in legumes and barley, with few larvae present. Few syrphid larvae in small grains. (N. D. Ins. Rpt.) IDAHO - Orius tristicolor averaged one per sweep and ranged to 10 per sweep in red clover and alfalfa fields sample in southwestern area. (Waters). UTAH - Bathyplectes curculionis generally numerous. (Knowlton). NEW MEXICO - Pirate bugs, damsel bugs and big-eyed bugs abundant in cotton, Collops spp. and lacewings also present, but fewer in numbers. Praon palitans becoming established in alfalfa fields in Chaves and Eddy Counties. (N. M. Coop. Rpt.). ARIZONA - Collops spp., Geocoris spp., lady beetles and spiders fairly abundant. Nabis spp. numerous near Eloy and becoming more so in other areas. Few Chrysopa spp. and Orius spp. in most areas. (Bottger, Kauffman, Sheets).

MISCELLANEOUS INSECTS

FALSE CHINCH BUGS (Nysius spp.) - ARIZONA - Heavy in lawns, orchards and gardens in Safford area, Graham County. (Woodruff, June 9). NEW MEXICO - Have become nuisance in and around houses in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

OLD-HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - Damaging baseboard of home in Orange County. (Morris, Shepherd).

ROUNDHEADED BORERS - MONTANA - Heavy infestation reported from newly-constructed barns and in barns constructed 2 years ago from freshly-cut unpeeled Douglasfir logs. (Missoula For. Ins. Lab.).

TERMITES - UTAH - Severely damaging home at Logan. Damage common in many parts of State. (Knowlton).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta	quinq.	Heliothis zea	vires.
ALABAMA								
Crossville 6/9,12						22		
Fairhope 6/5,9	1	4				13	12	
ARKANSAS								
Fayetteville 5/22-6/4	12	6		8				2
Kelso 5/22-6/4	4	5		5				28
Morrilton 5/22-6/4	11	20		7				5
Stuttgart 5/22-6/4	18	6		7				1
FLORIDA								
Quincy 6/10					2			
ILLINOIS								
Urbana 6/6-12	177	12	9	37				1
INDIANA(Counties)								
Orange 6/3-9	49	3	12		1	5		6
Tippecanoe 6/6-11	78	2	26	12				
LOUISIANA								
Baton Rouge 6/10-12	2		40	4				6
MISSISSIPPI								
Grenada 6/2-7	6	4	1					
Senatobia 5/31-6/6	2							2
*State College 6/7-13	134	46	411	182	1		73	46
*Stoneville 6/6-12	946	134	438	1331	15		66	11
MISSOURI								
Sikeston 5/30-6/5	117	35		14		3		21
NORTH CAROLINA								
Clayton 6/12						11		9
Faison 6/12	5	19		3	12		2	4 2
SOUTH CAROLINA								
Charleston 6/2-8	2	8	32	12	2			3
Clemson 6/7-13	166	65	90	18	18	11	66	2
Florence 6/8-14	95	6	8	37	9	5	155	
TENNESSEE(Counties)								
Blount 6/3-9	30	12		38				
Cumberland	18	10	9	15				12
Johnson	110	54		36				
Madison		16	12	68				16
Maury	344	32	20	32				20
Robertson	106	8	26	18				20
TEXAS								
Brownsville 6/2-6		2	16	2				20
Waco 6/7-13	37		92	105				77

*Two traps-State College, four traps-Stoneville.



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JUNE 27, 1958

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

PLANT PEST SURVEY SECTION

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.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GRASSHOPPER control continues in outbreak areas. Melanoplus bilituratus mostly adults in western Kansas. (p. 553). CORN EARWORM heavy in Delaware and damaging in Kansas and New Mexico. (p. 554). CHINCH BUG heavy in Texas and Oklahoma, damaging in Kansas. (p. 554). EUPOREAN CORN BORER extremely heavy in areas of Arkansas, high numbers of moths in Minnesota and 90 percent emergence in southern Illinois. High egg mass counts in Iowa. (p. 554, 555).

GARDEN WEBWORM damaging in Louisiana, Missouri and Arkansas. (p. 555). Serious in cotton in Arkansas. (p. 566). HESSIAN FLY infestation heaviest in several years in Missouri. (p. 556).

ARMYWORM moths numerous in Wisconsin, heavy flight in Missouri and larvae causing damage to small grains in Indiana, Missouri and Kansas. (p. 557) ARMY CUTWORM flights heavy in areas of Colorado. (p. 557). WHITE GRUBS infesting up to 25 percent of blue stem range on 350,000 acres in east central Kansas. (p. 560).

PECAN NUT CASEBEARER and FALL WEBWORM heavy and causing damage to pecans in some southern States. (p. 561, 562).

Egg counts of BOLLWORMS high in Alabama, Georgia and Louisiana. (p. 566).

EUROPEAN CHAFER reaching adult stage in Wayne County, New York. (p. 572).

MOSQUITOES annoying in areas of Iowa, Utah and Wisconsin. Together with flies are troublesome on Louisiana livestock. (p. 569).

CORRECTIONS. (p. 571). ADDITIONAL NOTES. (p. 572).

INSECTS not known to occur in the United States. (p. 573).

WEATHER OF THE WEEK ENDING JUNE 23

Continued flooding in areas of the Wabash and lower White Rivers in Indiana and in the Hill Country and Edwards Plateau of Texas, hot dry weather from the Divide westward, unseasonably cool temperatures in the Northeast, and heavy precipitation over the southern and central Great Plains and most of the Southeast, were the features which characterized this week's weather. These conditions resulted from situations of low pressure extending from south of Texas northwestward into Washington and cool Canadian air masses enveloping the country east of the Rockies, except in the Far Southeast where maritime tropical air prevailed. A front separating the contrasting air masses of the East, which for the most part remained over the Gulf States, and the low pressure southwest of Texas were causes of the heavy rains which fell on these areas. Weekly totals ranged to as great as 20 inches west of San Antonio, Texas, 9 inches in Alabama, 6 inches in interior Louisiana and along coastal South Carolina, 5 inches in Arkansas, and 4 inches in parts of Oklahoma and southern Kansas.

East of the Rockies, weekly precipitation was moderate to heavy except along the northern border of the North Central States, and in the upper and middle Mississippi and southern Ohio Valleys, over most of New York, and along coastal New England where amounts were light. To the west of the Divide, no precipitation was recorded except for generally light amounts in northern California and adjacent sections of Nevada and Oregon. The Continental Divide also separated the contrasting temperature anomalies for the week. To the west of it departures averaged near to well above normal, to the east they averaged below, except along the Gulf coast where they were slightly above normal. Departures over the country as a whole ranged from near +12° in eastern Washington and Oregon to near -9° in Pennsylvania and New York. Temperatures rose to above 100° on 1 or more days in the Northwest, while in contrast temperature conditions of the northern Lakes region and Northeast were unseasonably cool throughout the period. In the northern and central lowlands of Wisconsin, freezes occurred on most nights with some damage to corn, potatoes, and truck crops. A low of 28° was observed at Grand Marais, Mich., on Wednesday morning. Record or near record lows for the date were established at numerous places in Pennsylvania on several mornings. In the extreme Northeast where temperatures have averaged below normal for the past 7 weeks comes a report from Hartford, Conn., of the coldest June on record through the 22d. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - ILLINOIS - Averaged 15 nymphs per 100 sweeps in grass in western section and 17 in central section. (Ill. Ins. Rpt.). IOWA - Hatching in southern area. M. bilituratus and M. differentialis averaged 2-4 first and second-instar nymphs per square yard in fence rows. (Iowa Ins. Inf.). MINNESOTA - M. bivittatus hatching general on light sandy soils, 50-60 first to third-instars per square yard in roadsides, central Polk County, 20-30 in margins and thin alfalfa stands in Roseau County and 30-40 in weeds and clover in Kittson County. On heavier soils very light hatching. M. femur-rubrum ranged from coagulated in some heavy wet soils to eye-spot stage on lighter soils. (Minn. Ins. Rpt.). NORTH DAKOTA - Scattered, light to severe nymphal infestations in western part of State. General and severe in eastern Divide and northern Burke Counties, with up to 200 per square yard. Spraying underway in all areas with economic populations. M. bivittatus dominant species, with M. bilituratus and few M. packardii. Hatch nearly complete. Drought continues in Divide, Burke and northern Williams Counties. (Burge, King, USDA). Spotty, light to threatening infestations in Mountrail County. (N. D. Ins. Rpt.). SOUTH DAKOTA - Heavily infested spots in Potter, Campbell, Edmunds and Faulk Counties. Nymphs, 75 percent M. bivittatus, up to 35 per square yard in the field and 200 in the margins. (King). KANSAS - County-Federal cooperative program in 19 western counties, with 8 counties directing own programs. Control very successful where applied. Counts along unsprayed field margins and fencerows ranged 15-60 per square yard with Aeoloplides turnbulli, M. bilituratus, M. bivittatus and M. differentialis dominant species. Nearly all M. bilituratus now adults and large percentage of A. turnbulli and M. bivittatus in last instar with 30 percent adults. In north central counties, averaged 20-60 per square yard in alfalfa and along fencerows and uncultivated areas, M. bivittatus being dominant. Threatening to severe populations offer threat to crops in that area. (Matthew). Through June 20 more than 14,000 miles of roadsides treated in 19 counties, with total of 25-35,000 miles to be treated. Treatment has begun on 1,100 miles of railroad right-of-way. (PPC).

OKLAHOMA - Light general damage to corn, sorghums and legumes throughout State except in extreme northwest and panhandle counties where damage is light to heavy. (Coppock). In southwestern range counties averaged 8-15 per square yard; roadside and marginal numbers, 10-25. Averaged 8-25 on northwestern rangeland; marginal populations somewhat higher. (Coppock, Owens, Hudson). Treatment excellent in Texas County and being organized in Beaver, Cimarron, Harper and Ellis Counties. Treatment underway on 212,000 rangeland acres, Cimarron and Texas Counties. (PPC). TEXAS - Remain heavy to severe along roadsides and on rangelands in panhandle counties, with all stages being noted. Emergency spraying underway in several areas, especially in panhandle area. Spotted and scattered in other parts of the State. (Gaines). Approximately 850,000 acres of rangeland to be treated in 5 panhandle counties, with 60,000 completed by June 21. (PPC) UTAH - Hatches continue in scattered areas, nymphs invading crops in local areas. Adult Trimerotropis pallidipennis still more numerous throughout State than for many years. (Knowlton). IDAHO - High egg hatch in small area, Lincoln County, primarily M. bilituratus. M. bilituratus nymphs near Whitebird, Idaho County, lighter than 1957. In Nez Perce County, numbers very low to over 100 per square yard, predominantly first to fifth-instar M. bilituratus. Populations warrant control. (Smith, Portman). NEVADA - Heavy infestation of Aulocara elliotti, Cammula pellucida, Melanoplus bilituratus and Oedaleonotus enigma has developed on approximately 8,000 acres in Paradise Valley area, Humboldt County. (Del Curto, June 13). COLORADO - Cooperative rangeland control programs will be conducted in 11 counties. Ranchers in several other counties expected to complete organization for programs by end of week. It appears approximately 800,000 acres will be sprayed. Crop farmers not eligible for assistance have initiated own control measures. M. bilituratus dominant species throughout most of area. (Ext. Serv., ARS, St. Dept. Ag., June 10). Total acres sprayed to June 21, 270,000. (PPC). NEW MEXICO - About 100,000 acres, mostly rangeland, under contract to be sprayed in Union County.

Large flights attracted to lights in southern counties have become a nuisance. Very little apparent damage to crops. (N. M. Coop. Rpt.). Approximately 110,000 acres in Union County to be treated under cooperative agreement. (PPC). CALIFORNIA - *M. devastator* heavy in grass in orchards, Vacaville and Fairfield areas of Solano County. Light to heavy on range grass in areas of Amador and Sacramento Counties. Averaged 100 per square yard in Shasta and Butte Counties, being heaviest under oak trees. *Melanoplus* sp. heavy and damaging irrigated pastures in Elk Grove area, Sacramento County. (Cal. Coop. Rpt.).

A CAMEL CRICKET - COLORADO - *Daihinia brevipipes* observed in numbers in the grass-hopper complex in Kit Carson County. (Ext. Serv., Exp. Sta., June 10).

CORN EARWORM (*Heliothis zea*) - DELAWARE - Heavy in sweet corn, Sussex County. (Conrad). VIRGINIA - *Heliothis* sp. appearing in corn fields in Smyth and Scott Counties. (Morris). NORTH CAROLINA - Infesting 20 percent of whorls in 8 acres of field corn, Wayne County. (Goforth, Farrier). Averaged 1.2 eggs per silk in Duplin County sweet corn. (Brett, Habeck). MISSOURI - From 1-3 percent of earlier-planted corn shows infestation in southwest area. (Kyd, Thomas). ARKANSAS - Egg counts high on silking corn. (Barnes, Dowell). MISSISSIPPI - On corn in Bolivar County. (Hutchins). KANSAS - Damage in whorls of corn appearing in eastern and southeastern areas of State. (Gates). TEXAS - Heavy on late-planted corn in Burleson County. (Garner). NEW MEXICO - Causing considerable damage to corn in most areas. (N. M. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Light in corn in central and north central sections. Heavier in young sorghum in southwestern counties with up to 450 per plant. (Coppock). KANSAS - Moderate to high in many spring barley fields throughout western counties. Appearing in fields of grain sorghum seedlings, especially near infested barley fields. (Matthew).

CHINCH BUG (*Blissus leucopterus*) - TEXAS - Heavy on Navarro County corn. (Burleson). KANSAS - Continued to damage some corn and sorghum fields. Replanting necessary in untreated fields in Republic and Cloud Counties. (Matthew). OKLAHOMA - Medium to heavy in most corn and sorghums in east central and central sections, lighter in south central area. (Coppock). ILLINOIS - Few nymphs in central section wheat. Averaged 0-0.7 adult per linear foot in central, west, west-southwest and east-southeast sections. (Ill. Ins. Rpt.). MISSOURI - Some migration continues from small grains. Small corn, grain sorghums and Sudan grass continues to be severely damaged or killed in scattered areas of west central and southwestern counties. Some infested Sudan grass being used as pasture, few corn fields planted for ensilage being abandoned. (Kyd, Thomas). NORTH CAROLINA - Moving from wheat to corn, northern Wake County. One acre of corn killed, others infested. (Miller). Moving from small grain to corn, Hertford County. Over 25 nymphs per plant in Vance County corn. (Jennings).

A CHINCH BUG (*Blissus leucopterus insularis*) - MISSISSIPPI - Infesting lawn grass in Jackson County. (Bond).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - MASSACHUSETTS - Heavy rains stimulated moth emergence and higher temperatures resulted in heavy egg laying. (Wheeler). DELAWARE - Heavy on sweet corn in Sussex County. (Conrad). MARYLAND - Second and third-instar larvae in 64 percent of sweet corn one locality in Queen Annes County. (U. Md., Ent. Dept.). PENNSYLVANIA - Moths and eggs present in corn, no larvae, Clinton County. (Gesell). NORTH CAROLINA - Some stalks of wheat killed in Gates County, most larvae have pupated and adults emerging. (Newsome, Farrier). ALABAMA - First generations caused most severe damage ever observed in early corn in Tennessee Valley. Many larvae full-grown. (Eden). WISCONSIN - Pupation complete in southern portions of State, moth emergence has begun. (Wis. Coop. Sur.). MINNESOTA - Pupation nearly completed in all districts. Moths emerged in high numbers, some egg laying in southern counties. Corn behind borer development, not known what larval survival will be this year. Emergence is 29 percent in southwest district, 61 in south central, 46 in west central, 48 in central and 70 percent in southeastern district. (Minn. Ins. Rpt.).

IOWA - Southern area corn shows leaf feeding on 10-76 percent of plants and .40-410 egg masses per 100 plants. Treatment begun in western Pottawattamie County June 18. Moths abundant in southeastern oats and weeds. First-instar larvae 10-23 per plant. Leaf feeding evident on 30-90 percent of central area corn, 140-200 egg masses per 100 plants and larvae 88 percent first instar. Much treatment in Monona County. More first-brood eggs now than at same time in 1957 in Boone County, but only half have hatched. In northern third of State egg masses average 25-30 per 100 plants on 15-20 inch corn, 30-70 on 30-inch corn and leaf feeding ranges 5-15 percent. Light trap catches have dropped at Ames, Ankeny and Bancroft. (Iowa Ins. Inf.). ILLINOIS - Emergence is 90 percent in southern area, 80 in south central, 41 in central, 41 in north central and 13 in northern areas. Pupation is 100 percent in all areas. Egg masses averaged 5.3-120 per 100 plants, the latter being on market sweet corn in Rock Island and Rock Falls. Hatch is 3 percent in northwest, 12 percent in west and 27 percent in west-southwest. (Ill. Ins. Rpt.). ARKANSAS - Extremely heavy in eastern and southeastern areas. In a Desha County field of tasseling corn 60 percent of plants showed signs of feeding. (Ark. Ins. Rpt.). MISSOURI - Egg laying and hatching practically complete in central third of State. Egg masses averaged 50 or less per 100 stalks in northwest area. Corn 35 inches high or over, 70-100 percent infested with 2-42 larvae per stalk. Most fields averaged 6-7 per stalk. Larvae in first to third instars. (Kyd, Thomas). MISSISSIPPI - On corn in Bolivar and Oktibbeha Counties. (Hutchins, Guice). SOUTH DAKOTA - Some egg laying in central area with average of 8 egg masses per 100 plants. (Hantsbarger).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Causing serious damage to corn over most of the State. (Ruffin). OKLAHOMA - Light feeding in whorl-stage corn in south central, central and southwestern areas. (Coppock).

GARDEN WEBWORM (Loxostege similalis) - MISSOURI - Heavily damaged small corn and soybeans in scattered areas of most west central and southwest counties. Spots within fields have been killed. (Kyd, Thomas). LOUISIANA - Continued serious on corn and soybeans, Ouachita, Concordia and Morehouse Parishes. Localized but very heavy in these areas. (Spink). ARKANSAS - Caused considerable damage to young corn over State. (Barnes, Dowell).

WEBWORMS (Loxostege spp.) - TENNESSEE - Attacking corn in extreme western part of State. (Mullett). KANSAS - Caused severe damage to soybeans in southeastern and east central counties. Also on corn and sorghum as well as alfalfa. (Gates). N. DAK. - L. sticticalis still numerous in roadsides, small grains and alfalfa. (N. D. Ins. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - DELAWARE - Light feeding on sweet corn, Sussex County. (Conrad). FLORIDA - Larvae averaged 15 per plant on ragweed at Belle Glade, Palm Beach County. (Fla. Coop. Sur.).

SEED-CORN BEETLE (Agonoderus lecontei) - KANSAS - Caused localized damage to grain sorghum plantings in Finney County. Replanting may be required in several fields. (Gates, DePew).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - ALABAMA - Moderate in corn in northern part of State. (Eden). NORTH CAROLINA - Summer form taken from corn in Sampson County. (Scott, Farrier).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - OKLAHOMA - First-generation borers pupating, Payne County. Larvae in fourth to sixth-instars. (Arbuthnot). Heavy feeding in whorls and tassels, Grady County. (Coppock). ARKANSAS - Second-generation larvae entering plants. (Barnes, Dowell).

SUGARCANE BEETLE (*Euetheola rugiceps*) - NORTH CAROLINA - Damaged stalks received from Wayne County and 10 percent loss of 5 acres in Bladen County. (Lamm, Whaley, Farrier).

FLEA BEETLES - KENTUCKY - Have been heavy on corn in Lexington and Louisville areas during recent weeks. Stewart's disease severe in some cases. (Townsend, Rodriguez, June 16). ILLINOIS - *Chaetocnema pulicaria* averaged 25 per 100 plants in west section, 10 in central and 56 in southeast. (Ill. Ins. Rpt.). MISSOURI - Adult *C. pulicaria* continue very numerous on corn throughout southwest and central areas, averaged 12-23 per plant. Many fields showing evidence of bacterial wilt. (Kyd, Thomas). OKLAHOMA - Diminishing in field corn, but remain abundant throughout State. Exceed 100 per plant generally, Grady County. (Coppock).

SLUGS - OREGON - Corn plantings damaged in Benton County with injury primarily to foliage. (Every). PENNSYLVANIA - Averaged 4-6 young slugs per plant on corn, Schuylkill County. (Mensan).

BEEF ARMYWORM (*Laphygma exigua*) - IDAHO - Unidentified cutworms reported in C.E.I.R. 8(24) : 506 on corn in the Melba area, determined as this species by H. W. Capps. (Manis).

BLACK CUTWORM (*Agrotis ypsilon*) - IOWA - Destroyed stand of 40 acres of 20-inch corn in Union County. (Iowa Ins. Inf.). MISSOURI - Damage to few fields of small corn and grain sorghum sufficient to require replanting along Missouri River bottom in northwest area. (Kyd, Thomas). CALIFORNIA - Heavy on field corn in Chico area, Butte County. (Cal. Coop. Rpt.).

CORN BLOTCH LEAF MINER (*Agromyza parvicornis*) - DELAWARE - Common on sweet corn, southwestern Sussex County. (Conrad).

A COLASPIS (*Colaspis* sp.) - ILLINOIS - Averaged 2-3 larvae per plant in one southeastern corn field, with 36 percent of plants infested. (Ill. Ins. Rpt.). KENTUCKY - Half of 40 acres of soybeans killed near Wickley, Ballard County. (Gwens, Townsend, June 16).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - WISCONSIN - Generally present in all locations investigated. Few per plant on small grain and grasses rather than large colonies. Averaged 105 per 25 sweeps in small grain in St. Croix County, 50 in Buffalo, 60 in Pepin and 88 in Pierce Counties. (Wis. Coop. Sur.). ILLINOIS - In wheat averaged 6 per 100 sweeps in west, 77 in central and 35 in west-southwest sections. In oats ranged 20-160 in west and 600-2800 in central areas per 100 sweeps. (Ill. Ins. Rpt.). NORTH DAKOTA - Present in most wheat and barley fields through central and eastern areas. Appear heaviest in southeastern area fields with 100 per linear foot of row in some fields. No damage in any field surveyed. (N. D. Ins. Rpt.). SOUTH DAKOTA - Increased in small grain fields in central and north central areas with up to 300 per 10 sweeps. (Hantsbarger). NEBRASKA - Averaged 4 per head in 20-head sample count in wheat, panhandle counties, 12 per head in Platte Valley and southeast areas. (Andersen).

HESSIAN FLY (*Phytophaga destructor*) - MISSOURI - Heaviest infestation of past several years in most wheat fields over western half of State. Many fields with 5-25 percent lodging and few fields from one half to two-thirds lodged. Lodged stems with 1-6 puparia per stem. (Kyd, Thomas).

SAY STINK BUG (*Chlorochroa sayi*) - IDAHO - Very light in dryland grain fields, Butte and Bonneville Counties. (Gittins). Continued reports of damage in south central wheat fields. (T. F. F. S.). UTAH - Much fall grain sprayed in Emery, Uintah, Washington and Davis Counties and 7,000 acres in eastern Millard County. (Knowlton).

BROWN WHEAT MITE (*Petrobia latens*) - UTAH - Moderately damaging in parts of Juab, San Juan and Sanpete Counties. (Knowlton).

ARMYWORM (*Pseudaletia unipuncta*) - PENNSYLVANIA - Pasture field day called off because of damage, Fayette County. (Udine). MARYLAND - Full-grown larvae light to moderate on timothy, clover and wheat, Queen Annes County. Pupation under way. (U. Md., Ent. Dept.). VIRGINIA - Light to medium in oats and severe in some barley fields, Culpeper County. Larvae caused 20-30 percent loss on 2 farms. (Hutcheson). Severe in oats in parts of Essex County. (Little). Three outbreaks reported in Wythe County. (Morris). KENTUCKY - Infestations during recent weeks in central counties. Practically all on grasses. Spotted damage, particularly on fescue. (Townsend, June 16). WISCONSIN - Large numbers of moths have been collected in light traps. (Wis. Coop. Sur.). MINNESOTA - Small numbers being taken in light traps at Fergus Falls and Crookston. No larvae found. (Minn. Ins. Rpt.). ILLINOIS - Averaged 1.8 per linear foot of wheat in western section and 1-3 in other areas. (Ill. Ins. Rpt.). INDIANA - Three 15-acre wheat fields stripped of leaves and 2 timothy fields heavily damaged, Tippecanoe County. No migrations to corn. (Lehker). IOWA - Averaged 8 quarter to half-grown larvae per square foot in lodged wheat, Page County. Small numbers in Des Moines, Dallas, Story, Polk, Decatur and Taylor Counties. (Iowa Ins. Inf.). MISSOURI - Damaged wheat and improved pastures in extreme northwest corner of State, averaging 3-10 larvae per square foot. Heavy moth flight in southwest and central areas. (Kyd, Thomas). NEBRASKA - Moderate to heavy in southeast and south central regions in wheat and other small grains, with up to 40 per square foot. Movement from field to field. Controls being applied. (Anderson). KANSAS - Clipping heads of wheat and barley in Cloud County. Some difficulty being experienced in control. Moving from wheat fields to corn and milo. (Matthew).

WHEAT STEM SAWFLY (*Cephus cinctus*) - NORTH DAKOTA - Adults emerging in McLean, Mountrail, Ward, McHenry and Wells Counties, being numerous in the first three named. (N. D. Ins. Rpt.).

CUTWORMS - UTAH - Caused some damage to corn and peas in Iron and Garfield Counties. (Knowlton). KANSAS - Continue in corn and other crops. (Gates). COLORADO - Heavy moth flights of *Chorizagrotis auxiliaris* in Larimer, Weld, Boulder and Otero Counties. (Colo. Ins. Det. Comm.). ILLINOIS - Averaged 1-4 per square foot in few scattered clover and alfalfa fields in western, east-southeastern and southeastern sections. (Ill. Ins. Rpt.).

CLOVER SEED WEEVIL (*Miccotrogus picrostris*) - IDAHO - Averaged 5 per sweep in alsike clover fields in Southwick area, Nez Perce County, where control was not applied. (Portman). OREGON - Fairly abundant and evenly distributed on alsike clover in Klamath County, June 1. (Vertrees). High numbers in Linn County ladino clover, June 15. (Every).

SWEETCLOVER WEEVIL (*Sitona cylindricollis*) - IDAHO - Seriously injuring sweet-clover in Bingham County fields. (Bishop).

ALFALFA WEEVIL (*Hypera postica*) - DELAWARE - Adults averaged 9 per 10 sweeps in Sussex County and 1.5 in New Castle County. Larvae common in Kent and Sussex Counties. (Conrad). MARYLAND - Moderate to heavy larval damage to second-growth alfalfa in western counties. Larvae averaged 12 per sweep in second-growth alfalfa, Allegany County. Weevil activity about over in central, eastern and southern counties. (U. Md., Ent. Dept.). SOUTH DAKOTA - Larvae on alfalfa in Corson County as far east as Morrystown, none found in Ziebach County across the line. Averaged 1-2 per 100 sweeps. (Hantsbarger). NEBRASKA - Averaged 75 larvae per 100 sweeps on regrowth alfalfa in panhandle area. (Andersen). COLORADO - Averaged 800 larvae per 100 sweeps in some Larimer and Weld County fields. Considerable damage reported. (Exp. Sta., June 10). Up to 400 per 100 sweeps in Garfield County. (Colo. Ins. Det. Comm., June 10). Averaged 1,000 per 100 sweeps in Morgan County, 1,200 in Logan County and 10 in Yuma County. (Exp. Sta.).

UTAH - Retarding growth of second-crop alfalfa in many communities where control was neglected. (Knowlton). IDAHO - Larvae averaged 6 per sweep in fields near Aberdeen, Bingham County. (Bishop). Damage has been low and larval numbers are low even in untreated fields, Gooding County. (Gittins). OREGON - Two to three larvae per tip on all growing tips checked June 10, Langell Valley. (Vertrees).

ALFALFA CATERPILLAR (*Colias philodice eurytheme*) - SOUTH DAKOTA - Averaged one larva per 10 sweeps in alfalfa throughout State. (Hantsbarger). NEBRASKA - Larvae averaged 18 per 100 sweeps in alfalfa in panhandle and Platte Valley counties. (Andersen). COLORADO - Averaged 10 per 100 sweeps, Prowers, Otero, Crowley, Yuma, Phillips, Sedgwick, Logan and Morgan Counties. (Exp. Sta.). CALIFORNIA - Heavy in alfalfa fields in Fresno area, Fresno County. (Cal. Coop. Rpt.). UTAH - Common, northern and central areas. (Knowlton).

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - DELAWARE - Very common on alfalfa, Kent County. (Conrad). PENNSYLVANIA - Adults abundant in hay, Cumberland County. (Pepper). MARYLAND - Averaged 10-15 adults per sweep in alfalfa, Allegany and Queen Annes Counties. (U. Md., Ent. Dept.). ILLINOIS - Averaged 85 per 100 sweeps in western section clover and alfalfa fields. (Ill. Ins. Rpt.). CALIFORNIA - Medium on grass in Scott Valley, Santa Cruz County. (Cal. Coop. Rpt., June 13).

LYGUS BUGS (*Lygus* spp.) - DELAWARE - *L. lineolaris* unusually common on sweet corn, southern Sussex County. (MacCreary, Conrad). ARKANSAS - *L. lineolaris* averaged 350 per 10 sweeps in Chicot County alfalfa. (Ark. Ins. Rpt.). ILLINOIS - *L. lineolaris* adults averaged 8 per 100 sweeps in soybeans in west section and 10 in central section and on clover and alfalfa 450 and 230. (Ill. Ins. Rpt.). NEBRASKA - *L. lineolaris* adults and nymphs averaged 148 per 100 sweeps in panhandle region. (Andersen). IDAHO - Averaged 4-8 per sweep in alfalfa fields, Gooding and Lincoln Counties. Predominantly nymphs. (Gittins). WASHINGTON - Up to 50 adult *L. hesperus* and *L. elisus* per 25 sweeps in alfalfa near Quincy. (Johansen). OREGON - Fairly heavy in alfalfa and alsike clover in Klamath County, June 1. (Vertrees). NEW MEXICO - Very numerous, causing considerable damage to seed alfalfa. (N. M. Coop. Rpt.).

PLANT BUGS - ILLINOIS - Adult *Adelphocoris lineolatus* averaged 10 per 100 sweeps in clover and alfalfa in western section, 20 in central section and *A. rapidus* 23 in western and 15 in central section. Plant bug nymphs averaged 110 per 100 sweeps in western section. (Ill. Ins. Rpt.). NEBRASKA - *A. lineolatus* adults and nymphs averaged 45 per 100 sweeps in alfalfa. (Andersen). WISCONSIN - Adult *A. lineolatus* and *A. rapidus* found as far north as St. Croix County. (Wis. Coop. Sur.). DELAWARE - *A. rapidus* and *A. lineolatus* common on legumes. (Conrad).

SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) - IOWA - Egg masses abundant on leaves of field corn. Leafhoppers extremely abundant in lawns, pastures, gardens, corn fields. (Iowa Ins. Inf.). COLORADO - Averaged 10 per 100 sweeps in wheat and alfalfa, Larimer and Weld Counties. (Exp. Sta., June 10). NORTH DAKOTA - Range from trace to 70 per 100 sweeps in small grains in central area. (N. D. Ins. Rpt.). MINNESOTA - Most numerous in ditches in northwest district, very few in fields. (Minn. Ins. Rpt.). SOUTH DAKOTA - Averaged 16 per 10 sweeps on flax in northeast and north central areas. (Hantsbarger).

CLOVER APHID (*Anuraphis bakeri*) - IDAHO - Building up in considerable numbers in clover fields, Elmore and Gooding Counties. (Gittins).

PEA APHID (*Macrosiphum pisi*) - DELAWARE - Common on legumes. (Conrad). ILLINOIS - Averaged 775 per 100 sweeps in western section, 1,800 in central section and 3,000 in west-southwest section, all in clover and alfalfa fields. (Ill. Ins. Rpt.). IOWA - Abundant, 20-50 per sweep in alfalfa. (Iowa Ins. Inf.). MINNESOTA - Populations are high in alfalfa. (Minn. Ins. Rpt.).

NEBRASKA - Up to 1,360 per 100 sweeps in panhandle and Platte Valley counties. (Andersen). OKLAHOMA - Reduced to low numbers in alfalfa throughout State. (Coppock). SOUTH DAKOTA - Abundant in alfalfa throughout State with over 100 per sweep in some localities. (Hantsbarger). IDAHO - Averaged 10-20 per sweep in alfalfa fields near Aberdeen, Bingham County. (Bishop). COLORADO - Averaged 200 per 100 sweeps in Morgan, Logan, Sedgwick, Phillips and Yuma Counties. (Exp. Sta.). OREGON - Abundant in Klamath County alfalfa and alsike clover, June 1. (Vertrees).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Heavy with considerable damage to alfalfa in areas of Chaves and Dona Ana Counties. (N. M. Coop. Rpt.). OKLAHOMA - Remain light in central and south central alfalfa fields, extremely light in southwestern fields. (Coppock). COLORADO - None found in survey of 13 counties. (Exp. Sta.). ARKANSAS - Found at 65 per 10 sweeps in alfalfa, Chicot County. (Ark. Ins. Rpt.).

SWEETCLOVER APHID (*Myzocallidium riehmi*) - MINNESOTA - Winged forms present since May 29 in Crookston area, dispersal to new seedlings evident. Heavy in a few stands. Light on new seedlings sampled in Fertile area. (Minn. Ins. Rpt.).

BLISTER BEETLES (*Epicauta* spp.) - ALABAMA - Increasing in Dallas and Wilcox Counties. (K. Hays). NORTH DAKOTA - A trace to 5 per sweep in legumes in parts of Burleigh and McLean Counties. Numerous reports of defoliation of caragana hedges from McLean County. (N. D. Ins. Rpt.). OKLAHOMA - Common throughout State in alfalfa with up to 11 adults per 10 sweeps. (Coppock). SOUTH DAKOTA - *E. fabricii* averaged 10 per 10 sweeps in alfalfa in northwest area and 5 in north central area. (Hantsbarger).

CLOVER SEED CHALCID (*Bruchophagus gibbus*) - WASHINGTON - Up to 35 per 25 sweeps in red clover seed fields near Quincy. (Johansen).

A FALSE CHINCH BUG - MISSOURI - Very heavy, 100 or more per square foot, in spots within fields of grass and alfalfa, widely scattered over northwest area with damage apparent. (Kyd, Thomas).

GREEN CLOVERWORM (*Plathypena scabra*) - DELAWARE - Averaged 2 per 10 sweeps on alfalfa throughout State. (Conrad). ARKANSAS - Feeding on soybean foliage. (Ark. Ins. Rpt.).

LEAFHOPPERS (*Empoasca* spp.) - NORTH DAKOTA - Single specimens of *E. fabae* collected in Wells and Foster Counties. (N. D. Ins. Rpt.). DELAWARE - *E. fabae* noted in Sussex and Kent Counties. (Conrad). OKLAHOMA - Increasing in alfalfa throughout State with 2-6 per 10 sweeps in most central and south central fields. (Coppock). MARYLAND - *E. fabae* adults averaged 1-2 per 10 sweeps in alfalfa, Allegany and Queen Annes Counties. Light compared with 1957. (U. Md., Ent. Dept.).

VARIEGATED CUTWORM (*Peridroma margaritosa*) - MISSOURI - New growth alfalfa, following second cutting, being entirely destroyed in some fields in some extreme northwestern counties. (Kyd, Thomas). COLORADO - Averaged 10-25 larvae per square foot in alfalfa in Prowers County and 1-5 in Yuma County. (Exp. Sta.). OKLAHOMA - Almost entirely disappeared from legumes and small grains throughout State. (Coppock).

WEBWORMS (*Loxostege* spp.) - OKLAHOMA - Common to abundant in alfalfa, eastern and central areas, light to non-existent in most south central and southwestern fields. (Coppock). MISSOURI - *L. similalis* heavy in alfalfa throughout southwest area, many fields being cut early to save some of second cutting. (Kyd, Thomas). ARKANSAS - *L. similalis* caused considerable damage to soybean foliage. Condition appears prevalent over State. (Ark. Ins. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ILLINOIS - Averaged 4.4 per 6 feet of row in soybeans in western section, 0.5 in central section and 2-4 in south-eastern section. (Ill. Ins. Rpt.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - TEXAS - Light in Frio County. (Harding). GEORGIA - Light on peanuts in peanut growing area. (Johnson).

THRIPS - TEXAS - Frankliniella sp. damaging peanuts in Anderson and Frio Counties. (Turney, Harding). NORTH DAKOTA - Adults range 2-5 per stem in numerous central area barley fields in shot blade or boot stage. (N. D. Ins. Rpt.). NEW MEXICO - Damaging alfalfa in Dona Ana County. (N. M. Coop. Rpt.). GEORGIA - Light to moderate on peanuts in peanut growing area. (Johnson).

SUGARCANE BEETLE (Diatraea saccharalis) - LOUISIANA - From 35-85 percent of first-generation larvae pupated and 5-30 percent have emerged. Second-generation eggs being laid and new-generation larvae appearing. (Spink).

WHITE GRUBS (Phyllophaga spp.) - KANSAS - Subsequent survey indicates infested area roughly bounded by Junction City, Alma, Maple Hill, Randolph, Manhattan, Keats and Ft. Riley has visible damage ranging from 0-60 percent from field to field, up to 25 percent of blue stem range within this area infested. Estimated blue stem range within these boundaries is 350,000 acres. (Knutson).

SOYBEAN CYST NEMATODE (Heterodera glycines) - One infested property reported from Mississippi County, ARKANSAS, during May. No infestations found from surveys made in ALABAMA, NORTH CAROLINA, GEORGIA, MISSISSIPPI and TENNESSEE. (PPC, Sou. Reg.). Two new infestations found in Pemiscot County, MISSOURI during May. Field sampling continued in KANSAS, WISCONSIN, IOWA, MISSOURI, ILLINOIS, INDIANA, OHIO and KENTUCKY. No infestations reported. (PPC, Cent. Reg.). Mississippi County, Arkansas, and Pemiscot County, Missouri, already known infested counties.

WHITE-FRINGED BEETLES (Graphognathus spp.) - NEW JERSEY - Three larval inspections made during May at Vineland. No larvae found. (PPC, East. Reg.).

FRUIT INSECTS

APPLE APHID (*Aphis pomi*) - NEW JERSEY - Infestations on apples increasing. (Ins. Dis. Newsl.). INDIANA - Abundant in numerous orchards at Vincennes. (Hamilton).

ROSY APPLE APHID (*Anuraphis roseus*) - NEW JERSEY - Very numerous on apples. (Ins. Dis. Newsl.). OHIO - Severe general infestation now receding. (Cutright).

GREEN PEACH APHID (*Myzus persicae*) - NEVADA - Abundant on peach trees in Reno-Sparks area, Washoe County. (Bechtel, Hilbig, June 13). IDAHO - Light infestations on peach trees in Salmon area. (Bishop).

ORCHARD MITES - INDIANA - *Tetranychus* spp. populations building up rapidly on apples at Orleans. (Marshall).

LEAFHOPPERS - PENNSYLVANIA - Rather severe injury to unsprayed apple orchards in southwestern area. (Menusan). CALIFORNIA - Heavy infestation of *Typhlocyba* spp. on pear trees at Sutter Creek, Amador County. (Cal. Coop. Rpt., June 13).

EUROPEAN RED MITE (*Panonychus ulmi*) - OHIO - Building up slowly. (Cutright). INDIANA - Present at Orleans in apples; not increasing rapidly. (Marshall). ILLINOIS - Generally present at Carbondale and increasing. (Meyer).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - UTAH - More common than usual in Davis and Weber Counties. (Davis, Knowlton). CALIFORNIA - Heavy populations infesting pear trees in Santa Ysabel, San Diego County. (Cal. Coop. Rpt.).

ITALIAN PEAR SCALE (*Epidiaspis piricola*) - CALIFORNIA - Medium infestation on pear trees in Fairfield, Solano County. (Cal. Coop. Rpt., June 13).

EUROPEAN FRUIT LECANIUM (*Lecanium corni*) - PENNSYLVANIA - Eggs beginning to hatch in Perry County on peach. (Pepper). WASHINGTON - A soft scale, possibly *L. corni*, relatively abundant on blueberries at Puyallup. Now in egg stage. (Telford).

PLUM CURCULIO (*Conotrachelus nenuphar*) - GEORGIA - Emergence from soil heavy at Fort Valley, especially on June 8 and 16. No second-generation egg deposition in peaches to June 16. (Snapp). PENNSYLVANIA - Adults remain active on fruit in Adams County. (Asquith).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - CALIFORNIA - Heavy infestations in cherry trees in Chico, Butte County. (Cal. Coop. Rpt.).

PEAR-SLUG (*Caliroa cerasi*) - DELAWARE - Prevalent on untreated cherries in New Castle County. (Kelsey).

BLACK CHERRY APHID (*Myzus cerasi*) - IDAHO - A severe infestation on cherry in Twin Falls area. Rather severe curling of leaves has occurred. (T.F.F.S.).

CHERRY FRUIT FLIES - PENNSYLVANIA - Heavy emergence continues in Erie County. (Cox).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - ALABAMA - Causing heavy nut drop in Jefferson County and number of places in southeastern area. (Guyton). GEORGIA - Light to moderate infestations on pecans in Houston, Mitchell and Thomas Counties. (Johnson). LOUISIANA - Causing heavy losses of pecans in New Orleans area. (Spink). SOUTH CAROLINA - Causing damage to pecans in Marlboro County. (Nettles et al.).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Light infestations on pecans in Lee County. (Pearson). Unusually large numbers in southeastern area for season of year. (Ruffin). GEORGIA - Infestation moderate to heavy on pecan and hickory trees throughout central and southern areas. (Johnson). LOUISIANA - Continues numerous on pecans throughout State. (Spink).

WALNUT CATERPILLARS (*Datana* spp.) - TEXAS - Heavy in nut trees in Gonzales, Guadalupe, DeWitt, Wharton, Comanche, Eastland, Erath and Real Counties. (Garner).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - Trapping continued in Brooks, Dimmit, Duval, Jim Hogg and Jim Wells Counties during May. One gravid female trapped on May 1 near Falfurrias in Brooks County. During period 554 trap inspections made on 151 traps. (PPC, Sou. Reg.). MEXICO - At Ensenada, Tecate, Tijuana and Mexicali, Baja California; and San Luis Rio Colorado, Sonora; a total of 4,604 traps inspections made on 1,423 traps. All inspections negative. Visual inspections at Tijuana negative. (PPC, Mex. Reg., May Rpt.).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - None trapped in FLORIDA since November 26, 1957. Trap lines now being operated over wide area in FLORIDA, in Mobile and Baldwin Counties, ALABAMA, in George, Hancock, Harrison and Jackson Counties, MISSISSIPPI, in Hidalgo County, TEXAS, and in eastern area of MEXICO. All collections during May were negative. In Florida, traps were increased to 32,715 in number during month. (PPC, Sou. and Mex. Regs.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - TEXAS - Surveys continued during May in Hidalgo, Webb and Dimmit Counties. No infestations found. (PPC, Sou. Reg.). MEXICO - During May, light infestations found on 12 properties of which 5 were in Municipio Hidalgo, Tamaulipas; 2 at Allende, 1 in Montemorelos, 1 at Linares, Nuevo Leon; and 3 in Hermosillo, Sonora. Heaviest infestation, with 1,666 infested leaves on 23 trees, found 22 miles south of Hermosillo, Sonora. No infestations found near United States border. (PPC, Mex. Reg.).

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Medium infestation on orange trees in Willows, Glenn County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - IOWA - Larvae abundant on untreated potatoes in Davis County. (Iowa Ins. Inf.). NORTH DAKOTA - Egg laying began in Grand Forks area. (N. D. Ins. Rpt.). WEST VIRGINIA - Heavy infestation on potatoes in Randolph County. (W. Va. Ins. Sur.).

TOMATO FRUITWORM (*Heliothis zea*) - GEORGIA - Light to moderate infestations on tomatoes in 11 counties. (Johnson).

HORNWORMS (*Protoparce* spp.) - COLORADO - Eggs and larvae on tomatoes in Otero, Bent and Crowley Counties. (Exp. Sta.).

BEET ARMYWORM (*Laphygma exigua*) - CALIFORNIA - Medium infestation on tomato plantings in Oxnard area of Ventura County. (Cal. Coop. Rpt.).

POTATO FLEA BEETLE (*Epitrix cucumeris*) - RHODE ISLAND - Adult injury heavy on potato and garden tomatoes at West Kingston. (Boaro). WEST VIRGINIA - Heavy feeding on potatoes and tomatoes in many counties. (W. Va. Ins. Sur.). PENNSYLVANIA - Very severe injury on unsprayed potato fields in Cambria County. (Menusan). NORTH DAKOTA - Light migration to potatoes most eastern fields. (N. D. Ins. Rpt.).

FLEA BEETLES - ALABAMA - Causing moderate to severe damage in conjunction with tortoise beetles to sweetpotatoes in Cullman County. (Thompson). IDAHO - Adults of Epitrix subcrinita prevalent on early planted or volunteer potatoes in Custer, Butte, Fremont, Bingham and Lemhi Counties. (Bishop). Extremely abundant on wild mustard, parts of Elmore County, running over 100 adults per sweep near Mountain Home. May be a serious problem on cultivated crops. (Gittins). NEW MEXICO - Damaging chili and potatoes several fields in Dona Ana County. (N. M. Coop. Rpt.). WIS. - Heavy in southeastern area. (Wis. Coop. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - IOWA - Present, but not abundant on potatoes in Davis County. (Iowa Ins. Inf.). DELAWARE - Very common on potatoes in Kent and Sussex Counties. (Conrad). MARYLAND - Unusually light on beans and potatoes on Eastern Shore. (U. Md., Ent. Dept.). PENNSYLVANIA - Averaged one per sweep on potato in Clinton County (Gesell) and nymphs generally present in southeastern area (Menusan).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adults present most potato fields in Sedgwick and Morgan Counties. Average 2 per 100 sweeps. Averaged 20 adults per 100 sweeps on potatoes in Otero County. Tomatoes average 5 adults per 100 sweeps. (Exp. Sta.). KANSAS - Adults averaged about 4 per 100 sweeps on potato fields in Finney County. (DePew).

PAVEMENT ANT (Tetramorium caespitum) - CALIFORNIA - Causing damage to tomato plants in localized area of Sacramento County. Attacks occur from soil level to 3 or more inches below ground, in some cases the ants working into pith of stem and roots. (Cal. Coop. Rpt.).

APHIDS - NEW JERSEY - Macrosiphum solanifolii and Myzus persicae very numerous throughout State. (Ins. Dis. Newsl.). VIRGINIA - M. solanifolii heavy few localized areas in eastern area. (Hofmaster). ARKANSAS - Heavy on okra in southwestern area. (Ark. Ins. Rpt.). WISCONSIN - Brevicoryne brassicae damaging cabbage in Eau Claire County. Controls justified. (Wis. Coop. Sur.).

STINK BUGS - TEXAS - Damaging field peas and tomatoes, Henderson and Anderson Counties. (Tackett, Turney).

BEET LEAFHOPPER (Circulifer tenellus) - UTAH - Numerous throughout State. Infesting 91-95 percent of tomato plants at Santa Clara. Ten acres of beans 82 percent infested with curly top near Ogden. (Knowlton, Dorst). Obvious curly top on sugar beets 5-20 percent in Hooper area, Weber County. Adult populations at peak of second long distance influx, week ending June 7, was 3.2 per foot of row in Cache County, 8.5 in Box Elder County, 11 in Davis County, 8.9 in Salt Lake and Utah Counties and 8.1 in Sevier County. (Dorst). COLORADO - Surveys made June 4 in Mesa, Delta, Montrose and Garfield Counties showed populations increased to 11 per square foot on sugar beets in 4-8 leaf stage. This was highest population recorded in several years. Number of leafhoppers carrying curly top virus averaged 6-7 percent. Movement of leafhoppers occurred over prolonged period. (ARS, Dorst).

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Adults continue numerous in sugar beet fields throughout much of State. Few egg masses observed in Cass County. Some young larvae in Walsh County. (N. D. Ins. Rpt.). COLORADO - Some control beginning in Larimer and Weld Counties. (Exp. Sta., June 10).

BLACK CUTWORM (Agrotis ypsilon) - CALIFORNIA - Heavy infestation damaging sugar beets in Stockton area of San Joaquin County. (Cal. Coop. Rpt.).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - COLORADO - Peaks of adult collections occurred near Severance, Weld County. In four bait traps, average was 1,493 per trap. (Exp. Sta., June 10). Maggots being taken in sugar beet fields. (Colo. Ins. Det. Comm.).

- IMPORTED CABBAGEWORM (*Pieris rapae*) - VIRGINIA - Increasing on cole crops in eastern area. (Hofmaster). MARYLAND - Butterflies noticeable most sections. (U. Md., Ent. Dept.). CALIFORNIA - Heavy infestations damaging cabbage in areas of Fresno and Santa Cruz Counties. (Cal. Coop. Rpt.).
- DIAMONDBACK MOTH (*Plutella maculipennis*) - VIRGINIA - Larvae very heavy on cole crops some eastern areas. (Hofmaster).
- CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Heavy infestations attacking cabbage in areas of Santa Cruz and Fresno Counties. (Cal. Coop. Rpt.).
- SQUASH VINE BORER (*Melittia cucurbitae*) - DELAWARE - Adult taken on squash in Sussex County; no larvae noted. (Conrad).
- STRIPED CUCUMBER BEETLE (*Acalymma vittata*) - MARYLAND - Adults heavy and causing serious injury to squash at Cumberland. (U. Md., Ent. Dept.).
- WHITE-LINED SPHINX (*Celerio lineata*) - IDAHO - Larval populations general throughout Latah and Nez Perce Counties. Control required where larvae moved from native hosts to peas. (Portman).
- SLUGS - OREGON - Caused severe damage necessitating replanting of bean fields in Linn and Marion Counties during week ending June 14. Newly hatched slugs caused a major portion of damage, feeding on stems below ground surface. (Every).
- PEA APHID (*Macrosiphum pisi*) - IDAHO - Populations building up in areas of Nez Perce County. Predators plentiful. (Portman). WISCONSIN - Counts averaged as high as 50 per sweep in early peas in Brown County and 9 per sweep in St. Croix County on June 12. Pan counts averaged 25-35 per pan in Green Lake County fields. (Wis. Coop. Sur.). WASHINGTON - Up to 250 per sweep in pea fields near Quincy. Most fields have been treated. (Johansen).
- MEXICAN BEAN BEETLE (*Epilachna varivestis*) - IOWA - Adults observed in Davis County. (Iowa Ins. Inf.). DELAWARE - Adults feeding on beans in Sussex County. (Conrad).
- BEAN LEAF BEETLE (*Cerotoma trifurcata*) - IOWA - Averaging 5-10 per linear foot of row on beans in Davis County. Damage continuing. (Iowa Ins. Inf.).
- SPINACH LEAF MINER (*Pegomya hyoscyami*) - COLORADO - Eggs and larvae 2-4 per leaf on sugar beets in Larimer and Weld Counties. (Exp. Sta., June 10).
- PAINTED-LADY (*Vanessa cardui*) - IDAHO - Larvae damaging vegetable crops in Bingham County. (Bishop). OREGON - Larvae infesting scattered plantings of beans and mint in Benton, Linn, Lane and Marion Counties. (Every, Stephenson). WISCONSIN - May become a problem in peas. (Wis. Coop. Sur.).
- ONION THRIPS (*Thrips tabaci*) - COLORADO - Average 7 per plant in commercial plantings in Weld County. (Exp. Sta., June 10).
- ONION MAGGOT (*Hylemya antiqua*) - WISCONSIN - Populations high in southeastern area; heavy damage observed in untreated fields. (Wis. Coop. Sur.).
- ASPARAGUS BEETLE (*Crioceris asparagi*) - CALIFORNIA - Heavy infestation on asparagus in Oakdale area of Stanislaus County. (Cal. Coop. Rpt.).
- STRAWBERRY LEAF ROLLER (*Ancyliis comptana fragariae*) - TENNESSEE - Populations light to medium in Knox County. (Bennett). CALIFORNIA - Light infestation in Watsonville area of Santa Cruz County on strawberries. (Cal. Coop. Rpt.).
- A STRAWBERRY ROOTWORM (*Paria* sp.) - TENNESSEE - Damaging some plantings in Hancock County. (Bennett).

SPIDER MITES - UTAH - Causing above normal amount of damage to strawberries and raspberries in Utah, Salt Lake, Davis and Weber Counties. (Davis, Knowlton). MINNESOTA - Populations of Steneotarsonemus pallidus and Panonychus ulmi high, some strawberry plantings in southeastern area. (Minn. Ins. Rpt.). WASHINGTON - Tetranychus telarius averaged 5 per leaf on lower foliage of peppermint near Quincy. (Johansen).

SAP BEETLES - VIRGINIA - Caused considerable damage to very late strawberries in eastern area. Both adults and larvae present. (Hofmaster).

TOBACCO INSECTS

TOBACCO BUDWORMS (Heliothis spp.) - VIRGINIA - Generally very light on tobacco in Pittsylvania County. (Dominick). NORTH CAROLINA - Average of 3.5 first to fourth instars per 50 plants in Columbus County. (Strickland). GEORGIA - Moderate to heavy infestations on tobacco in 13 counties. (Johnson).

HORNWORMS (Protoparce spp.) - VIRGINIA - Generally light on tobacco in Pittsylvania County. (Dominick). MARYLAND - Light numbers of small larvae on tobacco at Westwood. (U. Md., Ent. Dept.). NORTH CAROLINA - Average of 4 larvae per 50 plants in Sampson County (Rockley) and Columbus County (Strickland).

CUTWORMS - VIRGINIA - Damage light to heavy several tobacco fields in southwestern counties. (Morris).

GRASSHOPPERS - VIRGINIA - Adults and nymphs damaging some newly set tobacco in Pittsylvania County, particularly around borders of fields. (Dominick).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - KENTUCKY - Feeding on newly set tobacco near Franklin in Simpson County, June 2. (Townsend).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Infestations in freely fruiting fields in southeastern area range from 5-13 percent. (Ruffin). ARKANSAS - Counts low all areas of State except in southwestern part. (Ark. Ins. Rpt.). GEORGIA - Square counts made in 37 fields in 18 southern counties ranged from 4-44 percent punctured squares and averaged 17.3 percent. All fields infested. (Johnson). NORTH CAROLINA - Population appears general in older fields. (Cott. News Lett.). SOUTH CAROLINA - Becoming number one problem in squaring cotton. Percent punctured squares as high as 20-30 percent, untreated fields, coastal plains areas. (Cott. Lett.). Infestations in untreated fields between 2-6 percent generally in Florence area. (Fye et al.). TENNESSEE - Limited numbers found in southern counties of western area. (Locke). MISSISSIPPI - Adults exceptionally scarce in delta counties. This is lowest population at time of year since at least 1953. (Merkl et al.). LOUISIANA - Population counts in untreated fields in Tallulah area averaged 36 per acre. Range in all fields was 25-350 per acre. Average square infestation in all fields was 20 percent. Percentage of survival in hibernation cages to June 20 was 4.34 compared with 0.88 at same time in 1957. (Smith et al.). TEXAS - Survival percentage in hibernation cages at Waco was 5.78 as of June 19 compared with 5.44 at same date in 1957. Percent square infestation averaged 32 in untreated fields and 11.1 in treated fields. (Parenica et al.). Generally light in all areas. (Gaines).

BOLLWORMS (*Heliothis* spp. et al.) - NORTH CAROLINA - Populations appear to be declining. Larvae averaged 4 per 100 plants in Scotland County. (Cott. News Lett.). SOUTH CAROLINA - Injury increasing in Clarendon, Lee and Marlboro Counties. (Cott. Lett.). As high as 7 percent of squares some fields infested in Florence area. Most fields range from 1-4 percent infested squares. (Fye et al.). GEORGIA - Counts made in 41 fields in 20 southern and central counties were as follows: Eggs averaged 23.2 per 100 terminals and larvae 9.7 per 100 terminals. All fields infested with eggs and/or larvae. (Johnson). ALABAMA - Mostly *H. virescens*, ranged from 20-60 eggs or young larvae per 100 terminals in southeastern area. Heaviest infestation ever observed for time of year. (Ruffin). Damaging cotton in Tennessee Valley. (Arant). MISSISSIPPI - Eggs and larvae general in delta counties. Some control necessary. (Merkl et al.). LOUISIANA - Average square infestation in Tallulah area 8 percent. All fields inspected infested. (Smith et al.). ARKANSAS - Eggs and larvae present many untreated fields and heavy in fields where early season control in effect. Beneficial insects controlling bollworms generally in untreated fields. (Ark. Ins. Rpt.). MISSOURI - Of 79 fields examined in south Dunklin County, 5 had 1-2 eggs and 1-2 larvae per 100 terminals. (Cassidy, York). TEXAS - Slight increase in infestations in McLennan and Falls Counties. Eggs averaged 2.9 and larvae 0.3 per 100 terminals in 22 fields. Square injury averaged 0.4 percent in 13 fields. (Parenacia et al.). Generally light in all areas. (Gaines). NEW MEXICO - Moderate infestation near Roswell, 22 percent of terminal buds damaged one field. Generally light infestations in southern counties. (N. M. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - TEXAS - Infestation in blooms averaged 8.3 percent in 17 fields in McLennan County. (Parenacia et al.). Scattered infestations in upper coastal and south central areas. (Gaines).

CABBAGE LOOPER (*Trichoplusia ni*) - TENNESSEE - Causing heaviest damage in years in western area, along with complex of bollworms, a webworm and yellow-striped armyworm. Damage varies widely from field to field. (Locke). ARIZONA - Low populations present in all fields in Pima and Pinal Counties. (Bottger, Kauffman).

FLEAHOPPERS - SOUTH CAROLINA - Damage scattered throughout State. (Cott. Lett.). TENNESSEE - Present most fields in western area. Some square injury can be expected if not controlled. (Locke). MISSISSIPPI - Damage common in older untreated fields in delta counties. (Merkl et al.). OKLAHOMA - Light, general infestations in southwestern counties; some spraying being done. (Coppock). TEXAS - Infestations averaged 64.2 per 100 terminals in untreated fields and 31.5 in treated fields in McLennan and Falls Counties. Infestations at injurious levels in 16 of 31 fields examined. (Parenacia et al.). Light to heavy in coastal bend, southwestern, upper coastal, south central, eastern, central, northeastern, north central, west cross timbers, west central, northwestern, north plains and south plains areas. (Gaines). NEW MEXICO - *Psallus seriatus* averaged 37 per 100 sweeps in cotton in areas of Chaves County. Black fleahopper building up in cotton fields in southern counties. (N. M. Coop. Rpt.). ARIZONA - Present in all fields examined in Salt River and Santa Cruz Valleys. Damaging populations predominantly black fleahopper in Cochise County. (Bottger, Kauffman).

GARDEN WEBWORM (*Loxostege similalis*) - ARKANSAS - Most serious pest of cotton at present time. Control being applied many cases. (Ark. Ins. Rpt.). LOUISIANA - Continues serious on cotton in Ouachita, Concordia and Morehouse Parishes. Outbreaks localized but very heavy. (Spink). MISSISSIPPI - Numerous reports of damage to cotton and soybeans in delta counties. Damage particularly heavy in strip planted cotton. (Merkl et al.).

GRASSHOPPERS - TEXAS - Infestations on cotton heavy in northwestern area and in some cases severe outbreaks reported. (Gaines).

PLANT BUGS - NEW MEXICO - Considerable buildup of *Lygus* spp. in cotton fields in southern counties. (N. M. Coop. Rpt.). MISSISSIPPI - Populations of *Lygus lineolaris* and *Adelphocoris rapidus* light to heavy in older untreated cotton in delta counties. Light damage few fields. (Merkl et al.). ARIZONA - Populations, mostly nymphs, increasing most areas. (Bottger, Kauffman).

THRIPS - SOUTH CAROLINA - Increasing on seedling cotton in Newberry, Union and other counties; damage light to heavy. (Cott. Lett.). "Ragging" plants in coastal area, particularly in late planted cotton. Damage being outgrown most fields. (Fye et al.). ALABAMA - Moderate infestations on cotton in Tennessee Valley. (Eden). TENNESSEE - Increased some in western area. Some fields need control. (Locke). MISSISSIPPI - Populations remain relatively low in delta counties. Some damage to younger cotton. (Merkl et al.). LOUISIANA - Counts averaged 8.43 per plant in untreated cotton and 1.49 per plant in treated cotton in Tallulah area. Considerable damage occurred in late planted fields before heavy rainfall began. (Smith et al.). OKLAHOMA - Light scattered infestations in southwestern area. (Coppock). TEXAS - Infestations generally light in all areas except in south central, north central and central areas where infestations range from medium to heavy. (Gaines).

APHIDS - SOUTH CAROLINA - Readily found over State. Some control being applied. (Cott. Lett.). GEORGIA - Light infestations of *Aphis gossypii* on cotton in 5 counties. (Johnson). TENNESSEE - Light in southern half of western area, but extremely heavy in Lake County area. Control needed in most of county. Predators numerous. (Locke). MISSISSIPPI - Populations general over delta counties, reduced some. (Merkl et al.). LOUISIANA - Very few observed in Tallulah area. (Smith et al.). ARKANSAS - Present many fields, control applied some cases. (Ark. Ins. Rpt.). MISSOURI - All fields examined in south Dunklin County infested, few fields with heavy infestations. Lady beetle populations unusually high and causing numbers to decline most fields. (Cassidy, York). TEXAS - Infestations continue light in McLennan and Falls Counties. (Parencia et al.).

SPIDER MITES - ALABAMA - Damaging cotton in northern area. (Arant). Moderate infestations in Tennessee Valley. (Eden). GEORGIA - Light infestations in Thomas County. Moderate to heavy infestations in Colquitt County. (Johnson). SOUTH CAROLINA - Unusual early report in Allendale County. (Cott. Lett.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

- SPRING CANKERWORM (Paleacrita vernata) - NEBRASKA - Extensive defoliation to elms in many areas. Controls applied in most areas. (Andersen).
- PALES WEEVIL (Hylobius pales) - WEST VIRGINIA - Moderate to heavy on young white and red pine trees up to 6 inches in diameter in many counties. (W. Va. Ins. Sur.).
- BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - WEST VIRGINIA - Heavy infestations on living white pines in Pendleton County. (W. Va. Ins. Sur.).
- SPIDER MITES - IOWA - Abundant on conifers. (Iowa Ins. Inf.). IDAHO - The mite referred to in CEIR 8(20):392 has been identified by E. W. Baker as Oligonychus ununguis. (Manis).
- ASH PLANT BUGS - IOWA - Severe damage to ash trees in Ida, Plymouth and Buena Vista Counties. (Iowa Ins. Inf.).
- BAGWORM (Thryidopteryx ephermeraeformis) - NEW JERSEY - Larvae active in Ocean County. (Ins. Dis. NewsI.). TEXAS - Heavy on evergreens in Brazos, Kaufman, Hunt and Rockwall Counties. (Hawkins).
- GREENHOUSE THRIPS (Heliothrips haemorrhoidalis) - FLORIDA - Recent buildup of this species and a mite (Tetranychus tumidus) on royal palms in Davie area of Broward County. (Fla. Coop. Rpt.).
- A LAPPET MOTH (Tolype vellela) - FLORIDA - Collected on holly near Palm City, Martin County, June 3. (Campbell).
- BALSAM WOOLLY APHID (Chermes piceae) - NORTH CAROLINA - Considerable mortality to Frazer fir in 1,400 acres on Mt. Mitchell, Yancey County. (McCambridge).
- JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Adults active in areas of Washington, Henry, Pittsylvania and Cumberland Counties. (Morris et al.). Emerging Fairfax County, June 22. (Gentry). MARYLAND - First adults of season in Anne Arundel, County. (U. Md., Ent. Dept.). NORTH CAROLINA - Adults continuing to emerge in southeastern areas. (PPC).
- WILLOW SAWFLY (Nematus ventralis) - NORTH DAKOTA - Defoliating willow at Cooperstown, Griggs County. (N. D. Ins. Rpt.).
- A CHRYSOMELID - KANSAS - Moderate to severe damage to cottonwood and poplar trees in local areas of northwestern counties. (Matthew).
- AN ENGRAVER BEETLE (Ips lecontei) - NEW MEXICO - Prevalent in pinyon pine in Los Alamos, Bandalier and Santa Fe areas. (N. M. Coop. Rpt.).
- MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - WISCONSIN - Larvae are numerous in elm in various localities. (Wis. Ins. Sur.).
- JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Populations fairly heavy in parts of Douglas and Bayfield Counties. (Wis. Coop. Sur.). MINNESOTA - Low numbers in all areas where reported in 1957. (Minn. Ins. Rpt.).
- ELM LEAF BEETLE (Galerucella xanthomelaena) - DELAWARE - Larvae heavy on elms in Sussex County. (Conrad). MARYLAND - Damage conspicuous on elms in Queen Annes and Prince Georges Counties. (U. Md., Ent. Dept.). OKLAHOMA - Heavy in scattered elms at Stillwater, first record for area. (Apt).
- ELM SAWFLY (Cimbex americana) - OKLAHOMA - Numerous in elms in Walters. (Coppock).

ELM SPANWORM (*Ennomos subsignarius*) - GEORGIA - Heavy flights of adults in Cornelia, Gainesville and Athens around mid-June. Many service stations closed earlier than usual due to large numbers. (Moultrie, Paul, Jordan).

EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) - NEW JERSEY - adults emerging. (Ins. Dis. Newsl.). WISCONSIN - Emerging from collections taken in western Sheboygan County. (Wis. Ins. Sur.). PENNSYLVANIA - Emerging in northwest area. (Adams).

SCALE INSECTS - RHODE ISLAND - *Lepidosaphes ulmi* heavy on cotoneaster North Kingstown, June 13. (Mathewson). WISCONSIN - Hatching of heavy population on ornamentals and fruit trees later than anticipated. (Wis. Ins. Sur.). PENNSYLVANIA - *Aspidiotus comstocki* very abundant on ornamental maples; some branch injury. (Det. G. B. Sleesman. (Udine).

TENT CATERPILLARS - NEW MEXICO - Extensive infestation on aspen in northern and western New Mexico. (N. M. Coop. Rpt.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - WISCONSIN - Moderately heavy in Price and Taylor Counties and a few other areas. (Wis. Coop. Sur.). MINNESOTA - Feeding nearly complete. Abundant near Duluth and north of Cloquet. (Minn. Ins. Rpt.). PENNSYLVANIA - Severe defoliation on large acreage of commercial sugar maples in Somerset County. (Udine). WEST VIRGINIA - Serious defoliation on 300 acres of broad-leaved trees in Pendleton County. (W. Va. Ins. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

BLACK BLOW FLY (*Phormia regina*) - NORTH CAROLINA - Larvae infesting navel of newborn calf in Wake County, June 3. (Batte, Harkema).

HORSE FLIES - ALABAMA - Unusual populations on cattle in Tennessee Valley. Apparently directly responsible for loss in production in dairy herds. (Rutledge).

FLIES - LOUISIANA - Flies and mosquitoes continue very numerous in most livestock areas. This becomes increasingly serious in northern parishes due to a severe anthrax outbreak in Morehouse and Ouchita Parishes. (Spink).

CATTLE GRUBS (*Hypoderma* spp.) - NORTH DAKOTA - Fly activity in numerous cattle herds in south central area. (N. D. Ins. Rpt.).

BROWN-BANDED ROACH (*Supella supellectilium*) - NEVADA - Moderate infestations in homes in Sparks, Washoe County. (Bechtel).

MOSQUITOES - IOWA - Great annoyance on cattle on pasture. (Iowa Ins. Inf.). UTAH - Troublesome in several counties. (Knowlton). RHODE ISLAND - *Aedes fitchii*, *A. abserratus*, *A. canadensis* and *A. excrucians* collected in large quantities in wooded areas of Cumberland, Lincoln and Smithfield. (Boaro). NORTH DAKOTA - Adults of *A. vexans* and *Culex tarsalis* appearing in light trap at Fargo. (N. D. Ins. Rpt.). WISCONSIN - Troublesome in a few local areas. (Wis. Ins. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - VIRGINIA - Medium populations on cattle in Montgomery County. (Turner). OKLAHOMA - Averaging 15-151 per unsprayed animal in Payne County. (Howell).

HORN FLY (*Siphona irritans*) - ALABAMA - Infestations continue very high in all areas checked. Some difficulty in control. (Ruffin). As many as 2,000 horn flies per unsprayed animal in Dallas and Wilcox Counties. (Hays).

UTAH - Becoming annoying in Garfield County. (Lindsay). VIRGINIA - From 50-300 per animal on cattle in Montgomery County. (Turner). NORTH DAKOTA - Heavy in south central area. (N. D. Ins. Rpt.). WISCONSIN - Problem in several instances. (Wis. Ins. Sur.). OKLAHOMA - Declining. (Howell).

TICKS - RHODE ISLAND - Dermacentor variabilis infestations continue. Reports from Cumberland and Smithfield. (Mathewson). NEBRASKA - D. variabilis and D. andersoni in Dawes, Sheridan and Sioux Counties extremely low compared to former years. (Rapp).

SCREW-WORM (Callitroga hominivorax) - GEORGIA - One case found in Georgia this year, April 28 near Florida line. (Roukema).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - All inspections in ALABAMA, GEORGIA, TENNESSEE and TEXAS during May negative. (PPC, Sou. Reg.). Survey in Gage County, NEBRASKA, complete. Inspections negative. Inspections in MINNESOTA negative. (PPC, Cent. Reg., May Rpt.). Inspections in Scranton, PENNSYLVANIA, area negative. (PPC, East. Reg., May Rpt.). One new infestation found at Mexicali, Baja California, MEXICO, during May. Approximately 5,760 cubic feet involved for fumigation. (PPC, Mex. Reg.).

BLACK CARPET BEETLE (Attagenus piceus) - MARYLAND - More concern to homeowners than usual. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

PREDATORS - WASHINGTON - Geocoris pallens averaged 34 per 25 sweeps in white clover for seed near Quincy. (Johansen). ARIZONA - Collops spp. and spiders fairly abundant in all areas. Nabis spp. and Geocoris spp. vary considerably from field to field. Few Chrysopa spp. and Orius spp. found in fields examined. All in cotton. (Bottger, Kauffman).

KLAMATHWEED BEETLES (Chrysolina spp.) - IDAHO - Adult populations at peak in Rathdrum Prairie area of northern Idaho. Host plants beginning to bloom. (Manis).

HONEY BEE (Apis mellifera) - RHODE ISLAND - Good build up of bees in Washington County. (Bannister, Board).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - All known infestations have been treated in Calhoun, Fayette, Lamar, Limestone and Walker Counties, ALABAMA, and is near completion in Talladega County. In LOUISIANA, all known infestations treated in St. Helena, East Feliciana and West Feliciana Parishes. No infestations found in recheck of areas treated. Acres treated during May total 66,894 as follows: ALABAMA - 1,501; ARKANSAS - 5,646; FLORIDA - 935; GEORGIA - 15,711; LOUISIANA - 37,995; MISSISSIPPI - 784; NORTH CAROLINA - 409; SOUTH CAROLINA - 2,634; TEXAS - 1,279. (PPC, Sou. Reg., May Rpt.).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Annoyance variable, sometimes severe. (Knowlton). IDAHO - Becoming nuisance in Sandpoint area. (McPherson). PENNSYLVANIA - Problem around homes in Montgomery County. (Menusan). CALIFORNIA - Unusually abundant this season in El Dorado and Sacramento Counties, nuisance in homes and gardens. (Cal. Coop. Rpt.).

CORRECTIONSCEIR 8(25):848 - STABLE FLY should read (Stomoxys calcitrans).LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta	quinq.	Heliothis zea	vires.
ALABAMA								
Crossville 6/15			2			5	29	
FLORIDA								
Gainesville 6/18					2			
ILLINOIS								
Urbana 6/13-19	1061	27	14	527			1	
INDIANA(Counties)								
Orange 6/10-17	190	30	15	73	31	18	11	
Tiptecanoe 6/12-15	396	2	14	87			1	
LOUISIANA								
Baton Rouge 6/13-19		10	366	1			2	3
Franklin 6/16, 18		6	6					
MAINE								
Orono 6/14	1							
MARYLAND								
Fairland 6/16-23	7	12		9	1	7	1	
MISSISSIPPI								
Grenada 6/9-14	6	9	4					
Senatobia 6/6-13	12	11					14	
*State College 6/14-20	40	30	211	27			19	7
*Stoneville 6/13-19	74	186	363	105	7		41	5
NEBRASKA								
Alliance 5/21-6/9	888	106		1537		2	43	
Kearney 5/27-6/8	237	2		89	1	47	44	
Lincoln 5/24-6/13	4807	517		270			186	
North Platte 5/23-6/12	2254	578		1604	2	70	83	4
Scotts Bluff 5/27-6/9	28	16		234		6	37	
NORTH CAROLINA								
Clayton 6/19	3	8			5	3	2	2
Faison 6/19	9	13	14		4		6	
SOUTH CAROLINA								
Charleston 6/9-15		5	18	4				
Clemson 6/13-20	109	58	108	12	11	11	66	5
Florence 6/15-21	1139	237	164	360	17	3	2819	

*Two traps-State College, four traps-Stoneville

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Protoparce sexta	Heliothis zebra	quinq. vires.
<u>TENNESSEE (Counties)</u>							
Blount 6/10-16	82	8	22	26			6
Cumberland	116	32	53	99	11	8	8
Greene	152	28	52	56	20	64	16
Johnson	160	60		56	1		
Maury	132	16	56	116			12
Robertson	75	57	24	108	21	12	3
<u>TEXAS</u>							
Brownsville 6/10-13		3					25
Waco 6/14-20	19		59	84			212
Weslaco 5/16-31	87	117	101	157			98
Winter Haven 6/16			4				4

WISCONSIN - ARMYWORM (*Pseudaletia unipuncta*) - June 10-16: Arlington - 497; Middleton - 60; Oakfield - 48; Platteville - 300; River Falls - 338.

ADDITIONAL NOTES

NEW YORK - First APPLE MAGGOT adults emerged at Poughkeepsie on June 16. Emergence to June 23 has been very light. APPLE APHID increasing some orchards and second-brood PEAR PSYLLA eggs observed in eastern area. EUROPEAN CORN BORER masses numbered 6 on 100 plants at Stone Ridge in the Hudson Valley, but generally egg masses not readily found. First POTATO LEAFHOPPER taken in net sweeps in Ithaca on June 19. APHID damage appears light throughout State on alfalfa. ALFALFA WEEVIL continues to damage alfalfa in southeastern area particularly in Orange County. Most EUROPEAN CHAFER now in pupal stage in Marion area and first adult taken from soil June 17. ELM LEAF BEETLE populations in central area very low. Damage at Ithaca unusually low. (N. Y. Wkly. Rpt.).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

PEAR SAWFLY (Hoplocampa brevis (Klug))

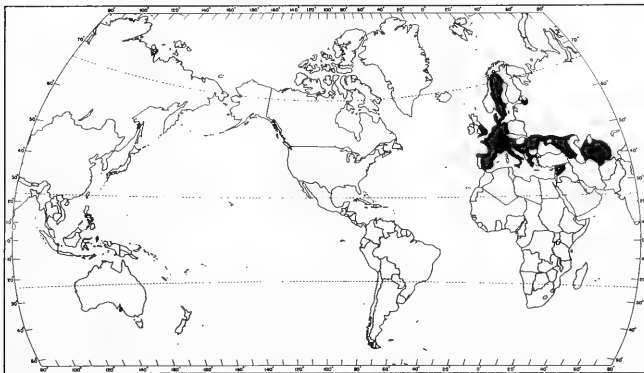
Economic Importance: This tenthredinid is an important pest of pears in many areas of Europe. Although infestations are not consistent from year to year, it is generally considered to be a very harmful species. Populations will remain unnoted for awhile, then suddenly appear in very destructive numbers. In some years as high as 80 percent of the fruits will be attacked but infestations may be highly localized in fruit growing areas. During 1938-39, 60 to 80 percent of the pears were attacked in the Crimea of USSR.



Damage to Pears

Distribution: Occurs in European USSR, Romania, Greece, Italy, Netherlands, Britain (England), France, Yugoslavia, Denmark, Germany, Sweden, Spain, Belgium, Switzerland and Austria in Europe and in Syria and USSR (Turkestan) in Asia.

Hosts: Pear is the major host. Also attacks plum and apple.



General Distribution of Pear Sawfly

Life History and Habits: Life history of *H. brevis* in the Crimea of USSR is as follows: Larvae overwinter in cocoons in the soil, some just below the surface and some at depths down to 8 inches. Pupation occurs in mid-March. The adults appear when pear buds are separating, being present for 8 to 10 days. Reproduction is parthenogenetic. The females contain fully developed eggs upon emergence. Each female deposits from 37 to 40 eggs, singly, on the lower halves of the flower buds. There are usually 4 eggs per bud. Larvae hatch in 6 to 8 days and feed within developing fruits, destroying seeds and migrating from one fruit to another until full-fed. Feeding lasts from 21 to 23 days during which each larva will damage up to 4 fruitlets and pass through five larval instars. In mid-May, the mature larvae drop to the ground, usually in the infested fruitlets, and then enter the soil to overwinter. Some larvae will not pupate the following spring, but will remain dormant until the succeeding year.

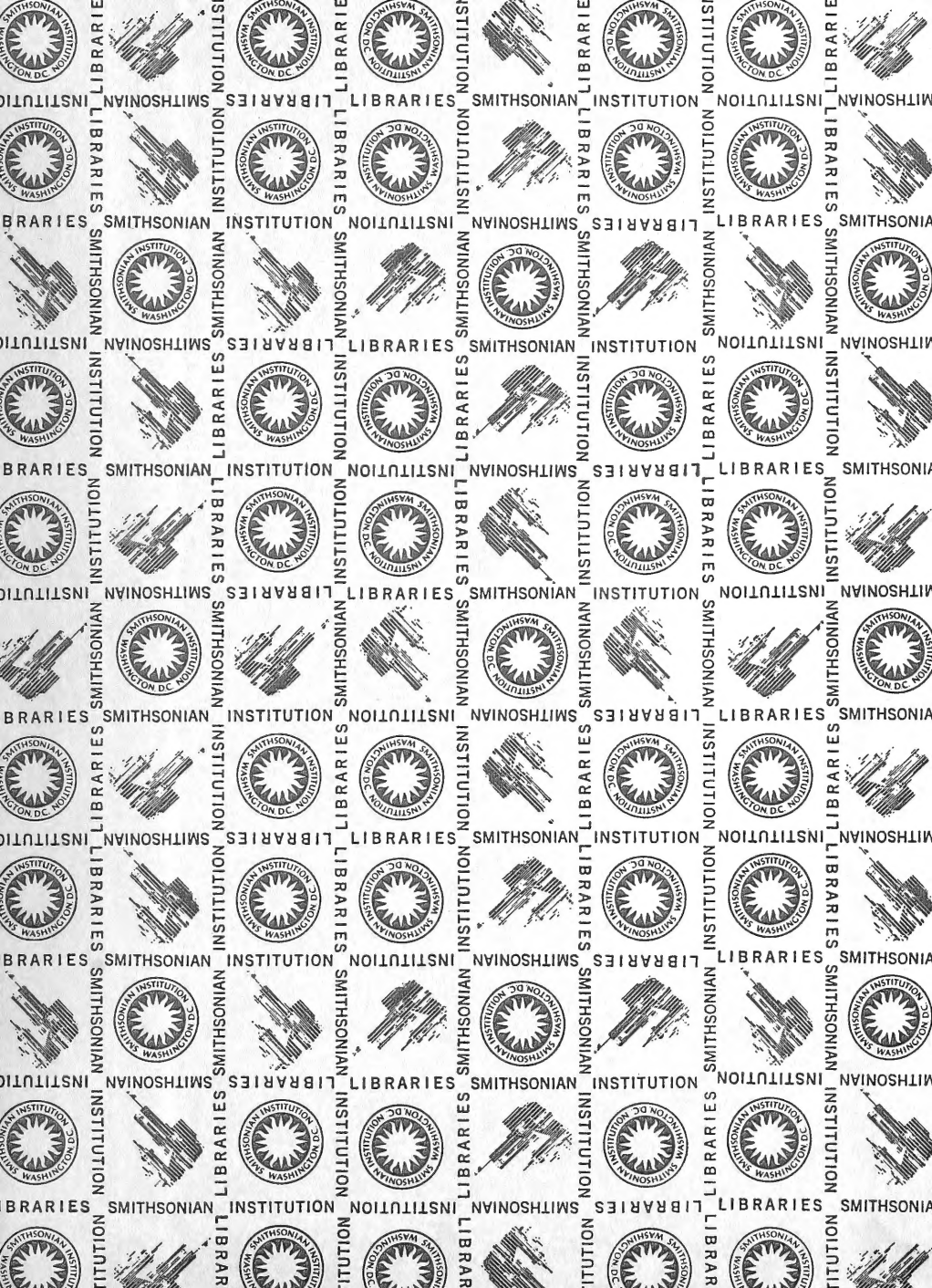
Description: Adult is 4-5 mm. in length. Mesonotum brown, spotted black. Stigma light yellow, base brownish. Head and antennae brownish-yellow without black coloring apart from the eyes. Thorax reddish-yellow, mesonotum somewhat darker with dark streaks on the individual sclerites and on base of scutum. Metanotum black. Mesonotum densely punctured, almost mat. Legs yellow, wing hyaline with yellow veins. Dorsal surface of abdomen black, ventral surface yellow. Egg is white and translucent, measuring 0.7 by 0.26 mm. Fifth-instar larvae is about 7 to 9 mm. long; head with brown spot on frons, otherwise tan; no conspicuous caudal tergites. The body and legs are pale green and claws brown. There is a slight darkening of the dorsal surface of the anal segment, somewhat less on ninth segment and slightly noticeable on eighth segment. The cocoons are dark brown and rough-coated due to sand particles adhering to surface. They vary in length from 5.9 to 6.2 mm. and in width from 2.9 to 3.3 mm. (Prepared in Plant Pest Survey Section in cooperation with other ARS agencies). CEIR 8(26) 6-27-58



Adult and Cocoon of Hoplocampa brevis







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