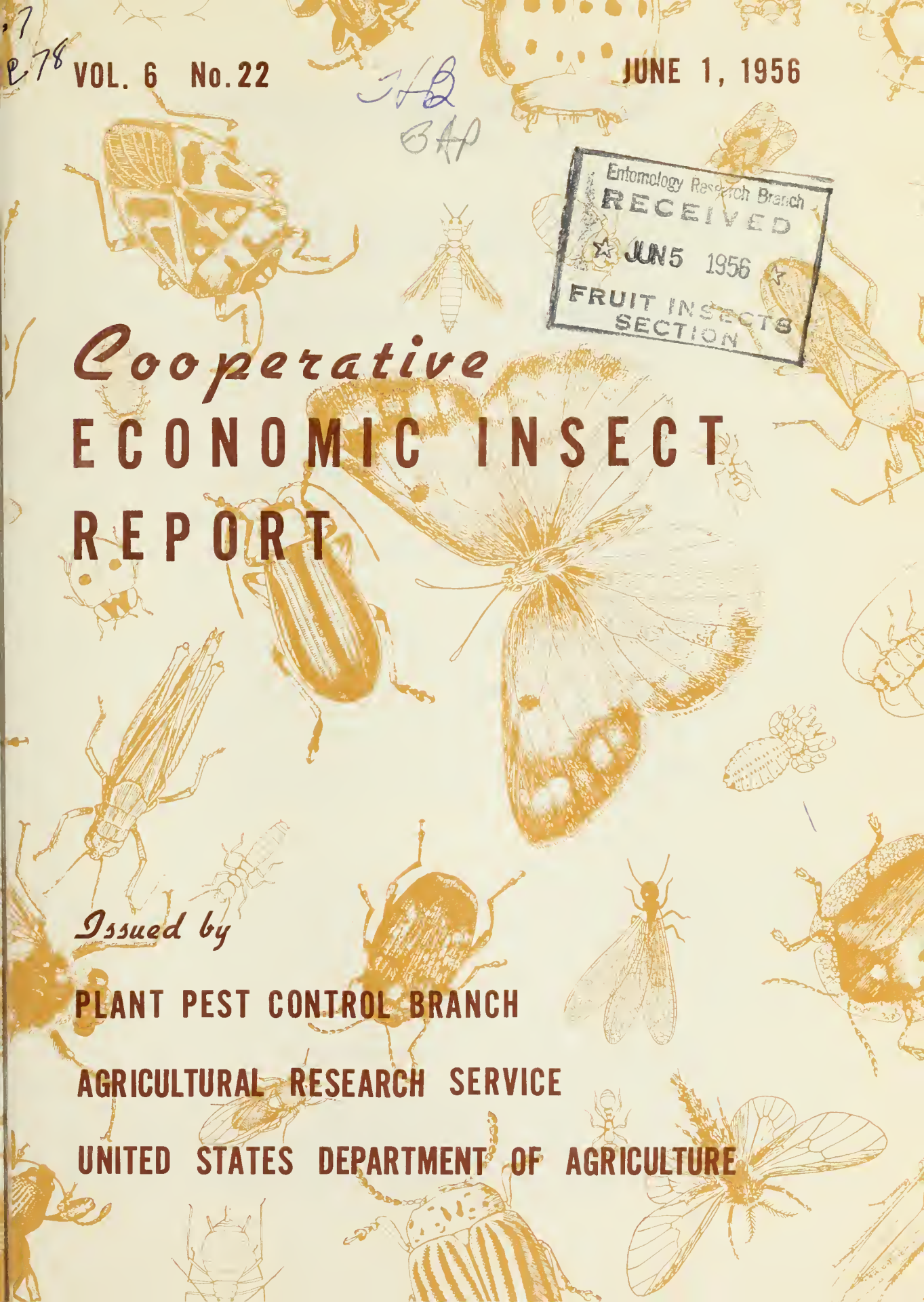


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FRUIT INSECTS
SECTION

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT 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 Branch 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

EUROPEAN CORN BORER moths emerging in southern Illinois, central Missouri and Indiana. Pupation from 12-80 percent in Illinois, 10-50 in central and southern Iowa, 15-50 in New Jersey, 80-95 in Missouri and 10 percent in northeastern Nebraska. (pp. 475, 497). GRASSHOPPERS causing some damage to legumes in northeast Arkansas and Denton and Hunt Counties, Texas. Hatch continues in Missouri and Utah but nearly complete in Ellis County, Oklahoma and southeast Kansas. Nymphs heavy in some areas of south central Kansas and becoming more abundant in sections of New Mexico and Iowa. (pp. 475, 497).

ARMYWORM situation not as serious as last year in Tennessee. Infestations have declined in Louisiana and Arkansas but damage was heavy in some northeast areas of latter State. Economic numbers continue in grains in southeast Missouri, scattered economic infestations in other areas of the State. Light infestations in eastern Kansas. Small larvae in Delaware. (p. 476). CORN EARWORM damaging corn in southern Oklahoma. Larvae reported as far north as eastern North Carolina. (p. 477).

SUGARCANE BORER continues to increase in Louisiana; much heavier than at same time last year. (p. 477). BROWN WHEAT MITE damaging in some Colorado counties and in southeastern and south central Nebraska. (p. 477). SUGARCANE BEETLE has been most important pest of corn this spring in Arkansas. Slight damage in Tennessee. (p. 478). CHINCH BUG nymphs numerous in barley and wheat in central and southeast Kansas and active in corn and oats in southern Iowa. Some damage to corn in Pontotoc and Okmulgee Counties, Oklahoma. (pp. 478, 497). CORN FLEA BEETLES heavy in southern Illinois and in some areas of Delaware. (p. 478).

ALFALFA WEEVIL damage moderate to severe in Delaware and Maryland. Serious damage on untreated alfalfa in south central Pennsylvania. First report of severe damage from North Carolina. Damage declining in Virginia. Injury becoming evident in Utah but populations are generally lighter in southern Idaho. (p. 479). SWEETCLOVER WEEVIL extremely abundant in clover in northern Idaho; severe damage some fields in Washington. (p. 479). CLOVER APHID is numerous in east central Kansas. (p. 479). PEA APHID reported from 18 states across the country. Heavy damage continues in some areas. (p. 480).

SPOTTED ALFALFA APHID has declined to low levels in areas of Arizona, Nevada, Kansas, Oklahoma, Missouri and Arkansas. New Mexico, however, reports increase in recently-cut fields and Utah has general infestations in Kane and Washington Counties. (p. 481). YELLOW CLOVER APHID continues heavy on red clover in northern two-thirds of Missouri. (p. 481).

CODLING MOTH emergence well underway as far north as Delaware. Larvae noted in Delaware and Columbia, Missouri. (p. 483). EUROPEAN RED MITE abundant at Amherst, Massachusetts and in untreated orchards of south central Pennsylvania; slowly building up where not controlled at Vincennes, Indiana. (p. 483).

Another specimen of MEXICAN FRUIT FLY collected at San Ysidro, California; first since August 1954. (p. 486). MEDITERRANEAN FRUIT FLY found in additional areas of Florida. (p. 486). ROSY APPLE APHID very abundant in Payette and Washington Counties, Idaho. (p. 484).

MEXICAN BEAN BEETLE unusually heavy in Duplin County, North Carolina and infestations earlier than normal in Harrison County, Mississippi. Some oviposition at Norfolk, Virginia. (p. 487). COLORADO POTATO BEETLE abundant in southern Idaho, eggs abundant at Zillah, Washington. Also active in other areas. (p. 488). CABBAGE MAGGOT egg laying heavy in Massachusetts and New Jersey. (p. 488).

First HORNWORM eggs of season on tobacco in eastern North Carolina. (p. 490).

BOLL WEEVIL adults unusually numerous in some fields in delta counties of Mississippi. Also numerous on young cotton in Alabama and in Baker and Cook Counties, Georgia. Adults active across Cotton Belt. (p. 491). BOLLWORMS appearing on cotton in North Carolina. (p. 491). PINK BOLLWORM lower than last year in lower Rio Grande Valley, Texas. (p. 491).

PINE SAWFLIES serious in some Maryland counties. (p. 493). FOREST TENT CATERPILLAR becoming active in Minnesota and Wisconsin. (p. 493).

WEATHER SUMMARY. (p. 499).

ADDITIONAL NOTES. (p. 497). CORRECTIONS. (p. 497).

SUMMARY OF INSECT CONDITIONS - 1955 - California. (p. 500).

Reports in this issue are for the week ending May 25, unless otherwise designated.

CEREAL AND FORAGE INSECTS

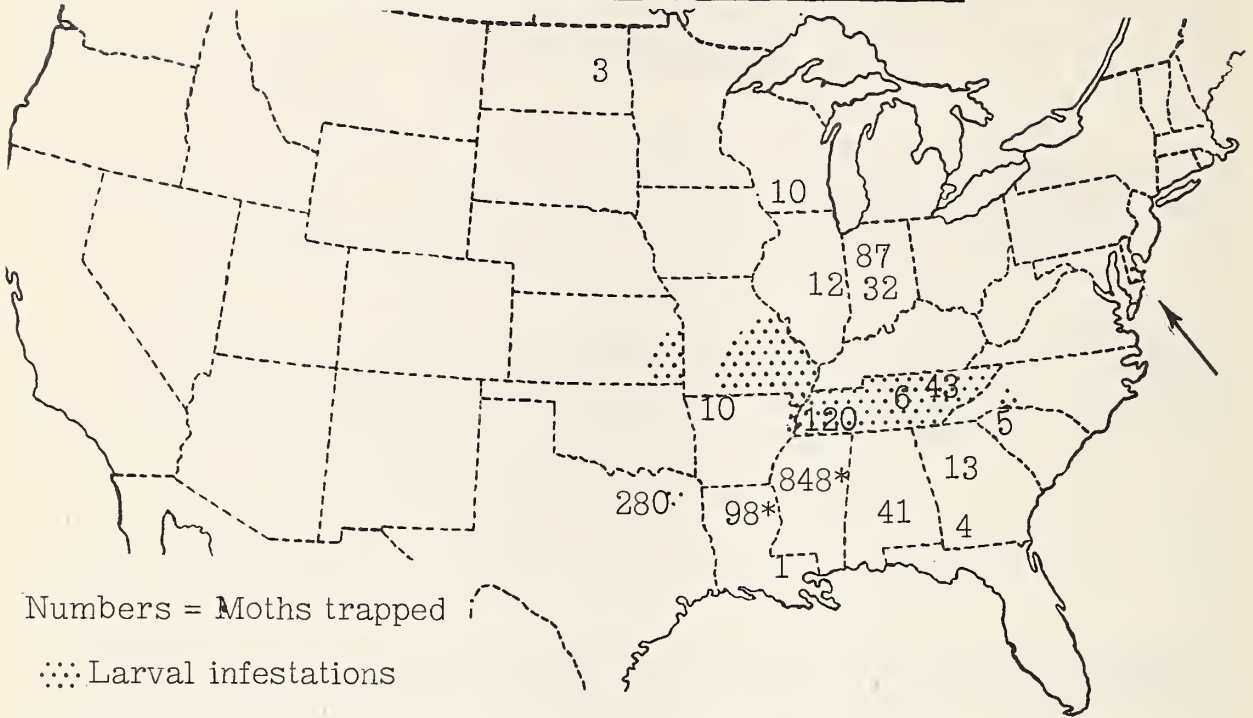
EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Fifty percent pupation in southern area, 15 to 30 percent in central and northern counties. Numbers of over-wintering larvae quite high. (Ins. -Dis. News.). ILLINOIS - Pupation almost 80 percent south of Highway 36, 30 percent between Highways 36 and 6, 12 percent north of Highway 6. Some moths emerging in extreme southern area. (Ill. Ins. Rept.). MISSOURI - Ninety to 95 percent pupation with 25-30 percent emergence in extreme southeast, 80 percent pupation and 20 percent emergence in central area and 80 percent pupation and no emergence in northwest. No corn tall enough to be infested by this early emergence. (Burdett). SOUTH DAKOTA - Found in Corson County, new county record. (Hantsbarger). NEBRASKA - Pupation reached 10 percent in northeastern Nebraska. Moth flight may occur by June 6. (Andersen). IND. - Emergence later than usual. (Deay).

GRASSHOPPERS - ARKANSAS - Some ragging of soybean leaves in extreme northeastern counties; as high as 6 nymphs per foot of row. (Warren). TEXAS - Heavy in alfalfa in Denton County. (Chada). Light widespread on vetch and alfalfa in Hunt County. (Hawkins). MISSOURI - Hatch well underway. (Kyd, Thomas). WISCONSIN - Indications that Melanoplus femur-rubrum will be dominant economic species in 1956. Eggs of this species still in fluid stage, while some eggs of M. bivittatus are in coagulate stage. Grasshopper egg pods are abundant and egg parasites do not seem abundant enough to significantly reduce the 1956 potential. (Wis. Ins. Bull.). OKLAHOMA - Thirty or more per square yard in Ellis County. Nymphs 10 percent first instar, 45 second, 30 third and about 15 fourth. Hatch near completion. Nymphal populations much lighter in Harper and Beaver Counties. (Frazier). From 10-14 nymphs per square yard in Grady County. (Coppock). KANSAS - Spotted nymphal populations, 8 to 10 per square yard, in areas of Meade County. On rangeland in southwest area 15 percent of nymphs in first instar, 50 in second, 25 in third and 10 in fourth. (Frazier). Heavy nymphal populations, 30 to 100 per square yard some areas* in south central counties. A few adult Melanoplus mexicanus. (Gates). From 12 to 20 nymphs per square yard in southeast; a few adults of M. mexicanus and M. femur-rubrum. Hatch nearing completion in this area. (Matthew). UTAH - Threatening numbers in one area of Sevier County. Hatching continues generally. (Knowlton). NEW MEXICO - Nymphs becoming more abundant in several areas. Irrigated land in Taos County has medium to heavy infestations. Nymphs on rangeland showing up in spotted areas over State. Grasshopper Control Project reports 3 to 25 nymphs per square yard in small areas in Lea County and one 75,000 acre block has fairly heavy infestation. From 5 to 20 nymphs per square yard in large area in Harding and Union Counties. (Durkin, May 18).

ARMYWORMS - VIRGINIA - Beginning to cause noticeable injury to several crops in Norfolk area. (Brubaker, Greenwood, Hofmaster).

* margin and roadsides

Armyworm as Reported Week Ending 5/25



Numbers = Moths trapped

⋯ Larval infestations

* Two traps at Stoneville, Miss.; three at Tallulah, La.

ARMYWORM (*Pseudaletia unipuncta*) - LOUISIANA - Only an occasional larva found over State. (Oliver). ARKANSAS - Armyworm with variegated cutworm (*Peridroma margaritosa*) caused locally severe injury along eastern margin of State to south Mississippi County; heaviest on barley. First-generation larvae maturing and further damage not expected. Moth flights very light indicating good natural control. Some damage to recently-cut alfalfa fields; controls necessary some areas of Mississippi and Crittenden Counties. (Warren). NO. CAR. - Only few in small grains in Cleveland County. (Clapp). Light damage in one oat field in Stanly County. (Scott). TENNESSEE - Control being applied all areas. Infestation spotted. Many fields have a few larvae, occasional fields have 5 or 6 larvae per square foot. General infestation does not appear as serious as in past year. (Mullett). TEXAS - Light to medium locally on sweet corn in Van Zandt County. (Berry). MISSOURI - Economic numbers, 4 to 9 larvae per square foot, continue to damage rank barley, wheat and fescue in southeast and also in widely scattered fields in east central and central areas. Disease and parasites beginning to reduce populations. (Kyd, Thomas). KANSAS - Only light infestations, not over 2 larvae per square foot, in east central and southeast counties. (Matthew). INDIANA - Peak moth flight passed at Vincennes. (Hamilton). DEL. - Small larvae common in grass some areas. (Milliron).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - GEORGIA - Heavy infestations on corn and beans in Athens area May 15. (Jordan).

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - About 80 percent of tassles infested in experimental corn at Faison. (Jones, Farrier). ARKANSAS - Very light, nor more than two per 10 sweeps, on alfalfa in northeast area. (Warren). TEXAS - Light to medium locally on sweet corn in Van Zandt County. (Hawkins, Berry). Heavy spotted populations on grain sorghum foliage in Bell County. (Decker). OKLAHOMA - Moderate to severe damage to corn in southern counties. From 11 per 100 plants in Johnston County to 71 per 100 plants in one field in Bryan County. Common in vetch in southern area also. (Coppock).

ARMY CUTWORM (Chorizagrotis auxiliaris) - SOUTH DAKOTA - Severely damaged 160 acres of barley in Haakon County. Severe damage to some alfalfa in Jackson County. Larvae maturing but still range from 4-6 per square foot in some fields. (Hantsbarger).

SEED-CORN BEETLE (Agonoderus lecontei) - NORTH DAKOTA - Exceptionally numerous in collections this week. (N. D. Ins. Rept.).

A BORER (Chilo loftini) - ARIZONA - Collected in green stems at Phoenix, May 4. Det. U.S.D.A. (Ariz. Coop. Rept.).

A LEAF MINER - GEORGIA - Heavily damaging peanuts in southern area. (Drennon).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Infesting 80 acres of corn at Phoenix May 18; 2 to 3 larvae, some whorls. (Ariz. Coop. Rept.).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Activity continues to increase, 2000 to 5000 deadhearts per acre some fields in St. Mary Parish. Infestations much heavier than at this time last year. (Oliver).

SEED-CORN MAGGOT (Hylemya cilicrura) - DELAWARE - Very destructive to commercial sweet corn at Georgetown; 30 percent reseeded in older plantings. (Milliron).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Damaging numbers in Adams, Weld, Logan and Yuma Counties. Appears connected with lack of moisture. (ARS, Ext. Serv., Expt. Sta.). NEBRASKA - Heavy in wheat fields in southeastern and south central areas. Much browning of leaves. (Andersen). UTAH - Storms reduced spring populations in many localities so that little control has been necessary. (Knowlton).

ENGLISH GRAIN APHID (Macrosiphum granarium) - NEBRASKA - Small numbers appearing on wheat heads in southeast; 1 to 3 aphids per 5 heads. (Andersen).

SUGARCANE BEETLE (Euetheola rugiceps) - TENNESSEE - Slight damage in many areas but heavy in only a very few corn fields. (Mullett). ARKANSAS - Has been most important pest of corn this spring. Infestations general over State; locally severe stand loss in many counties. (Warren). MISSOURI - Forty-three adults taken in light trap in Sikeston. (Adkisson).

GREENBUG (Toxoptera graminum) - COLORADO - None reported to May 22. (Expt. Sta.). NEBRASKA - Light, non-economic, in eastern area in wheat and oats from Gage County to Cuming County. (Andersen). NEW MEXICO - Light and spotty on barley in Eddy, De Baca and Valencia Counties. (Durkin, May 18).

CHINCH BUG (Blissus leucopterus) - KANSAS - Hatch of first generation about completed in central and southeast areas. Nymphs numerous in barley and wheat. Up to 5 adults per linear foot of row in barley. (Matthew). OKLAHOMA - Damaging some early-planted corn in Pontotoc and Okmulgee Counties. (Smith).

FLEA BEETLES - ILLINOIS - Very heavy in east southeastern area, 500 to 100 corn plants, and southern area, 343 per 100 plants. (Ill. Ins. Rept.). OKLAHOMA - Light in scattered areas of southern counties. (Coppock). DELAWARE - Chaetocnema pulicaria numerous on corn some areas. (Milliron).

FALSE WIREWORMS - IDAHO - Adults extremely abundant in dryland wheat in northern Franklin County. (Gittins).

WIREWORMS - NORTH DAKOTA - Damaging wheat in Grand Forks County. (N. D. Ins. Rept.).

SAWFLIES - OREGON - Severe local damage to chewings fescue in northern Marion County, May 24. (Larson).

BLACK GRAIN STEM SAWFLY (Cephus tabidus) - DELAWARE - Adults common in wheat at Little Creek. (Milliron).

WHEAT STEM SAWFLY (Cephus cinctus) - WASHINGTON - Five adults per 25 sweeps on grass at Wawawai (Johansen); also on grass at Waitsburg (Telford).

DATE MITE (Oligonychus pratensis) - TEXAS - Light to heavy local populations on corn in Zavala and Uvalde Counties. (Richardson).

WHEAT CURL MITE (Aceria tulipae) - TEXAS - Found infesting wheat in Denton County. Collected for first time this year April 27. (Chada).

A BUG (Thyridius pacificus) - WASHINGTON - Severe damage to small grains and grasses at Waitsburg. (Telford). One adult per 2 sweeps on grass at Wawawai. (Johansen).

A GROUND PEARL (Margarodes meridionalis) - FLORIDA - Averaging 2000 per pint of soil on centipede grass at Gainesville. Females active May 15. Det. S. H. Kerr. (Denmark).

ALFALFA WEEVIL (Hypera postica) - DELAWARE - Moderately heavy to severe damage over State. Early cutting to prevent further loss at many places. Hairy vetch heavily infested at Georgetown. (Milliron). MARYLAND - Damage to untreated alfalfa moderate to heavy in most sections. Average 112 larvae per sweep on unsprayed alfalfa in Harford County. First-generation adults emerging in Montgomery County. (U. Md., Ent. Dept.). VIRGINIA - Damage to alfalfa, at least in northern and eastern areas, declining but many reports from infested areas of heavy damage to alfalfa by large populations. (Morris). Larvae of spring season mature or nearly mature. Growers who have followed recommendations have in most instances been well pleased with results. (Muka). NORTH CAROLINA - First crop almost totally destroyed and farmers not treating in Warren County. Larvae eating second cutting into roots. (Jones). IDAHO - Generally lighter, except in some fields, in southern area. (Gittins). UTAH - Appearing generally; injury evident some fields. (Knowlton). NEVADA - From 1 to 8 adults per 10 sweeps on alfalfa in White Pine County. PENNSYLVANIA - Serious damage on untreated alfalfa in south central area. All stages present. (Pepper).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - MICHIGAN - Numerous in debris around field edges, May 19, but none on clovers. (Hutson). WASHINGTON - First adults on sweetclover at Wawawai, May 23. (Johansen).

CLOVER LEAF WEEVIL (Hypera punctata) - RHODE ISLAND - Adults active in clover in Kingston area. (Steve). ILLINOIS - Average 8 per square foot in northeast area; ranged from 0 to 6 elsewhere. (Ill. Ins. Rept.). WISCONSIN - Considerable hatch in alfalfa in southwestern area. (Wisc. Ins. Bull.). KANSAS - Light to moderate in red clover in east central area. One field had 1 weevil per square foot. (Matthew).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - IDAHO - Extremely abundant in clover fields in northern area. One 60-acre field of white clover showed severe stripping in margins. (Manis). NEBRASKA - From 1-4 per 10 sweeps in sweetclover in southeastern area. (Connin). WASHINGTON - One adult per sweep on sweetclover at Wawawai. (Johansen). Severe damage to several fields; probably heaviest since introduction into State. (Telford, Kamal).

VETCH BRUCHID (Bruchus brachialis) - MICHIGAN - Appeared in fields at Lansing May 19. (Hutson). OKLAHOMA - Averaged 60 per 100 sweeps on hairy vetch in Grady County, 65 per 100 in Bryan County. (Coppock).

CLOVER APHID (Anuraphis bakeri) - KANSAS - Numerous in red clover in east central counties. (Matthew).

CLOVER WEEVILS (Sitona spp.) - IDAHO - General, two per square foot, in about 1200 acres of clover seed crops near Donnelly. (Gittins). MINNESOTA - Sitona cylindricollis and S. scissifrons causing some leaf damage in alfalfa, 1 to 5 per sweep in southeast and 1 to 3 in south central district. (Minn. Ins. Rept. Serv.).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - DELAWARE - Destructive to terminals of red clover. (Milliron). PENNSYLVANIA - Larvae active in red clover in south central area. (Pepper). MARYLAND - Light to moderate damage on red clover in northeastern counties. (U. Md., Ent. Dept.). MISSOURI - Most fields of second-year red clover has from 45 to 95 percent of plants infested with one or more larvae. Most larvae near maturity and a few pupae in central areas. (Kyd, Thomas). KANSAS - Light to heavy in red clover in east central area, 0-7 weevils per sweep of 15-inch net. (Matthew).

BLISTER BEETLES - LOUISIANA - Epicauta sp., 150-500 per 100 sweeps, severely damaging white clover in Jefferson Davis Parish. (Oliver).

PEA APHID (Macrosiphum pisi) - RHODE ISLAND - Light infestations in clover fields in Kingston area. Developing slowly, only 1-2 per sweep compared with 20-25 same time last year. (Kerr, Steve). CONNECTICUT - From 5-8 per sweep on alfalfa in Tolland and Windham Counties, more numerous elsewhere. (Quinton, Tunis). NEW JERSEY - Five to eight hundred per sweep causing heavy damage in Cumberland and Salem Counties. (Ins.-Dis. News.). PENNSYLVANIA - Increasing on alfalfa and clover in south central area but not serious. (Pepper). DELAWARE - Abundant on alfalfa and red clover generally and on hairy vetch in some areas of Sussex County. (Milliron). VIRGINIA - Not a problem in northern area. (Rowell). LOUISIANA - Remains heavy, 2000-2500 per 100 sweeps, in alfalfa in Natchitoches and Bossier Parishes. Fungus prevalent. (Oliver). ARKANSAS - Non-economic in alfalfa in northeast counties except north Mississippi where as high as 350-500 per sweep. (Warren). TEXAS - Light to medium widespread on vetch in Hunt County. (Hawkins). ILLINOIS - Migrations have occurred in southwestern counties. Up to 80 percent of aphids killed by fungus in west southwestern area. From 50 to 100 percent of seedling plants infested in several legume fields. (Ill. Ins. Rept.). MISSOURI - Heavy numbers, 400 to 2,000 per sweep, continue to cause heavy damage to alfalfa over northern two-thirds of State. Biological control continues to build up in unsprayed fields and is slowly reducing infestations. (Kyd, Thomas). WISCONSIN - Population increased in southwestern alfalfa about five times over past week and further increase expected. Counts range from 3 to 42 per 100 sweeps. (Wis. Ins. Bull.). KANSAS - Moderate to heavy in some alfalfa in Shawnee and Douglas Counties, 400 to 600 aphids per sweep some fields. Few in southeast area where lady beetles aided by warmer weather controlling populations. (Matthew). MINNESOTA - From 1 to 10 per sweep in alfalfa southeast and south central areas. Some winged forms and movement to peas expected. (Minn. Ins. Rept. Serv.). NEBRASKA - From 150 to 200 per 10 sweeps in southeastern area and building up in alfalfa. (Connin, Andersen). WASHINGTON - Ten per

sweep in alfalfa, hairy vetch and sweetclover at Wawawai. (Johansen). CALIFORNIA - Medium to heavy in alfalfa in Yolo County. Medium to severe in Merced County. (Cal. Coop. Rept.). ARIZONA - Extremely light now in alfalfa in Salt River Valley. (Ariz. Coop. Rept.).

SPOTTED ALFALFA APHID - ARIZONA - Light, 1.2 per trifoliate leaf, in 13 fields in Salt River Valley. Populations slightly lower than for past two weeks, possibly due to higher temperatures and higher predator populations. (Ariz. Coop. Rept.). NEVADA - Dropped to low point in most fields in Clark County recently. Light infestations in Lincoln County showing build-up. Only one specimen collected in White Pine County May 15 where fields had economic damage in 1955. (Gallaway). NEW MEXICO - Increasing in recently cut fields. Heavy in untreated alfalfa in Dona Ana and Eddy Counties. Medium in San Miguel County where infestations are being found farther north and at higher elevations. (Durkin, May 18). UTAH - General in Kane and Washington County alfalfa. Also occurring in southern Iron County. Parasites released in Kane and Washington Counties. (Knowlton). COLORADO - None reported to May 22. (Expt. Sta.). KANSAS - No longer problem in previously infested south central and southeast areas. In general, area south of Kansas River Valley has no spotted alfalfa aphid problem. Elsewhere, heavy populations of lady beetles controlling situation at present. Non-economic infestation, 5 to 40 per 25 sweeps (mostly winged), in east central area. (Matthew, Gates). OKLAHOMA - Decreasing in all areas; less than 5 aphids per sweep in many fields. Lady beetles being reduced in many areas. (Coppock). MISSOURI - Most fields in infested area of southwest have very low populations, 1 to 2 aphids per 10 sweeps, although a few fields in Green County average 10 to 20 per sweep and one field had 200 to 250 per sweep. (Kyd, Thomas). ARKANSAS - None found in Greene, Mississippi, Crittenden and Cross Counties. (Warren). TEXAS - Medium to heavy local populations on alfalfa in Hunt County. (Hawkins). LOUISIANA - Light infestations continue in infested areas. (Oliver).

YELLOW CLOVER APHID (Pterocallidium trifolii) - MISSOURI - Most fields of red clover in northern two-thirds of State continue heavily infested, 75 to over 2,000 aphids per plant. In more heavily infested fields entire plants covered with honeydew. (Kyd, Thomas).

PLANT BUGS - DELAWARE - Adelphocoris rapidus nymphs common in red clover on Primehook Neck. Leptoterna dolabratus nymphs very abundant in grasslands over State. (Milliron). WISCONSIN - A. rapidus and A. lineolatus hatching in Rock County. (Wisc. Ins. Bull.). NEBRASKA - A. lineolatus ranges from 10 to 50 per 10 sweeps in alfalfa in southeast. Few adults. (Connin, Andersen).

LYGUS BUGS - LOUISIANA - Lygus lineolaris, 150 per 100 sweeps, infesting red clover in East Baton Rouge Parish. (Oliver). MINNESOTA - Small numbers, 1-3 per 50 sweeps, of L. lineolaris in southeast and south central districts. (Minn. Ins. Rept. Serv.). MISSOURI - L. lineolaris and other lygus bugs range from 2-5 per sweep (nymphs) in alfalfa over northern two-thirds of State. (Kyd, Thomas). SOUTH DAKOTA - L. lineolaris increasing in alfalfa, up to 4 adults per 25 sweeps. (Hantsbarger).

UTAH - Extremely abundant in some Washington County alfalfa. (Knowlton).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - DELAWARE - Numerous on alfalfa in several areas. Light to moderately abundant on red clover. (Milliron). VIRGINIA - Light in some Clarke County fields. (Gerken). MICHIGAN - Hatching nearly complete at Monroe, Jackson and Coloma, May 21. (Hutson). WISCONSIN - Newly-hatched nymphs common in southwestern alfalfa; 44 per 100 stems in Dane County. (Wisc. Ins. Bull.).

SPITTLEBUGS - ILLINOIS - Maximum population occurs in northeastern area where average is 72 per 100 stems. Average is 27 per 100 stems in northwestern area. Adults in southwestern section. (Ill. Ins. Rept.). NEW YORK - Very few spittle masses on alfalfa, May 21. (Wkly. Rept.). PENNSYLVANIA - Not as abundant as last year in southwest area. (Udine). Masses more evident near top of plants. (Pepper).

LEAFHOPPERS - MINNESOTA - Leafhoppers, probably E. fabae, ranging up to 1 per 100 sweeps in southern tier of counties. (Minn. Ins. Rept. Serv.). WISCONSIN - Empoasca spp. probably E. fabae, found in all but one field in southwestern area; 1 to 5 per 100 sweeps. (Wisc. Ins. Bull.). NORTH DAKOTA - No potato leafhoppers observed. (N. D. Ins. Rept.). OKLAHOMA - Seventeen potato leafhopper adults per 100 sweeps in Payne County alfalfa. This is first generation to develop on alfalfa in this area this year. (Fenton). PENNSYLVANIA - Potato leafhopper adults collected on alfalfa in southeast area. (Menusan).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Abundant throughout State except in northeastern area where population low. (Wisc. Ins. Bull.). NORTH DAKOTA - A few in alfalfa at Fargo. (N. D. Ins. Rept.). SOUTH DAKOTA - Up to 5 per 25 sweeps in wheat in Haakon County. (Hantsbarger). MINNESOTA - From 1-5 per sweep in southeast and 0-2 in south central district. (Minn. Ins. Rept. Serv.).

A NITIDULID - OREGON - A beetle, probably Meligethes nigrescens, quite abundant in Hillsboro area; 6 to 14 adults per head in one clover field. (Prescott).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - SOUTH DAKOTA - Appearing in alfalfa; 1 to 2 beetles per 100 sweeps. (Hantsbarger).

CLOVER MITE (Bryobia praetiosa) - IDAHO - Very abundant in lawns and gardens in southeastern and south central areas. (Gittins).

SPIDER MITES - ARIZONA - A mite, possibly Tetranychus telarius, light but increasing in alfalfa fields in Salt River Valley. (Ariz. Coop. Rept.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - TENNESSEE - Damaging newly-sprouting soybeans in western Tennessee. (Mullett).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - IDAHO - Adults abundant in many alfalfa fields in southeastern area. (Gittins). MINNESOTA - Small numbers, 3-4 per 50 sweeps, in southeast and south central districts. (Minn. Ins. Rept. Serv.).

CUTWORMS - ILLINOIS - Minor importance in clover but cutworms and wireworm damage necessitating replanting in occasional corn field. Most cases injury less than 5 percent. (Ill. Ins. Rept.). OREGON - Considerable damage to crops including wheat, clover and alfalfa in Deschutes and Jefferson Counties, May 16. (Goeden). IDAHO - About two per square foot on 1200 acres of clover seed fields near Donnelly. (Gittins).

WEBWORMS (Loxostege spp.) - NEBRASKA - Very small numbers in alfalfa in southeastern area; 1 to 2 per 10 sweeps. Some webbing. (Connin, Andersen).

THRIPS - GEORGIA - Light to moderate infestations on peanuts throughout south Georgia. (Drennon). TEXAS - Heavy on peanuts in one field of Frio County. (Hunt).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - DELAWARE - About 25 percent emergence at Woodside. First small larva at Bridgeville. (Stearns). PENNSYLVANIA - First emergence in cages, Adams County. (Asquith). INDIANA - Adult emergence especially high, May 16 and 17 and steady May 18-21, in Vincennes area. Oviposition heavy in cages May 16-17. (Hamilton). ILLINOIS - In cages at least 75 percent of moths emerged in Villa Ridge, 60 percent at Anna and about 40 percent at Carbondale. Large hatch expected. (Chandler). KANSAS - Appearing in small numbers in northeast orchards. (Eshbaugh). MISSOURI - More adults taken in Cape Girardeau area and a single entry reported from Columbia. The first brood of moths is well underway. (Wkly. Rept. Fr. Grow.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - RHODE ISLAND - Several egg masses on apple trees in Kingston area. (Steve). PENNSYLVANIA - Few moths, eggs nearly all hatched, larvae feeding on water sprouts of apple in south central area. (Pepper). NEW JERSEY - Activity still strong on apple. (Ins.-Dis. News.). DELAWARE - Active on apple in Dover-Bridgeville area generally. (Stearns). ILLINOIS - In all orchards in Centralia area in appreciable numbers but spotty. Control effective. (Chandler). WISCONSIN - Active in orchards. (Wisc. Ins. Bull.).

EUROPEAN RED MITE (Metatetranychus ulmi) - MASSACHUSETTS - In large numbers in several orchards in Amherst area. (Crop Pest Cont. Mess.). PENNSYLVANIA - This species and two-spotted spider mite plentiful on untreated apple in south central area. (Pepper). NEW JERSEY - Adults found throughout the State on apple. Some oviposition. (Ins.-Dis. News.). INDIANA - Slowly building up where control not applied in Vincennes area. (Hamilton).

PLUM CURCULIO (Conotrachelus nenuphar) - NEW YORK - Feeding punctures and oviposition scars on sweet cherries in Orange County, cutting on pears in abandoned block in Dutchess County, and feeding punctures in Columbia County. (Wkly. Rept.). PENNSYLVANIA - Cutting cherries at Huntingdon. (Udine). NEW JERSEY - Considerable numbers found on several varieties of blueberry. (Ins.-Dis. News.). GEORGIA - Peak of emergence of larvae from peach drops on May 16 and peak of adult emergence expected June 20 although second generation egg deposition could start before that date. General infestation light. (Snapp). ILLINOIS - Small numbers from jarring peach and apple in Carbondale area. Apparently first brood on peach and apple over. Although generally light on apple, in favorable places, injury could be considerable. (Chandler). KANSAS - Light but some damage in most orchards in northeast. (Eshbaugh). ALABAMA - Several reports received indicating extreme scarcity on peaches. (Arant).

ROSY APPLE APHID (Anuraphis roseus) - IDAHO - Extremely abundant generally in orchards throughout Payette and Washington Counties. (Gittins). INDIANA - Continues troublesome in some untreated apple orchards in Vincennes area. (Hamilton).

FRUIT TREE LEAF ROLLER (Archips argyrospila) - NEW MEXICO - Infestations general in apple orchards in Taos County and range from light to heavy. Light and spotty in Rio Arriba County. (Durkin, May 18).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - VIRGINIA - Medium damage to wild cherry and apple trees in eastern Fairfax County. (Beard). Considerable populations all through northern part of State on wild cherry, plums and apples. (Rowell).

UNSPOTTED TENTIFORM LEAFMINER (Callisto geminatella) - MISSOURI - Infested leaves at Cape Girardeau. (Wkly. Rept. Fr. Grow.). DELAWARE - First brood nearing completion at Georgetown. (Kelsey).

EUROPEAN APPLE SAWFLY (Hoplocampa testudinea) - CONNECTICUT - Adults active and egg laying heavy on early blooming varieties of apples. (Tunis).

CURCULIOS - NEW JERSEY - Active and severely damaged apple plantings adjacent to wooded areas. In southern part of State major activity will probably occur within next 10 days. During week of May 14 spread throughout entire peach plantings in southern area but population controlled by insecticides. On May 21 curculios again entered orchards and control necessary. (Ins.-Dis. News.).

LEAFHOPPERS - NEW MEXICO - Light on apples in Taos and Rio Arriba Counties but damage noticeable. (Durkin, May 18).

GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Heavy on peach trees in Rio Arriba County. (Durkin, May 18).

CATFACING INSECTS - CONNECTICUT - Active in peach. (Tunis).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - MISSOURI - Fresh injury to terminal twigs in the southeast. (Wkly. Rept. Fr. Grow.). NEW YORK - One adult in bait jar, May 25, Monroe County. (Wkly. Rept.).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - Quite numerous in Ukiah Valley of Mendocino County. This valley not known to have an infestation in 1955. (Cal. Coop. Rept.). NEW YORK - More eggs in Oswego County. (Wkly. Rept.).

FLATHEADED APPLE TREE BORER (Chrysobothris femorata) - FLORIDA - Larvae averaging 5-15 per plant on few small pecan trees at Monticello, Jefferson County. (Phillips).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Of 300 pecan tips examined in Johnston County 4.6 percent destroyed by larvae. Most first generation already pupated. No eggs seen. (Coppock).

PECAN BUD MOTH (Gretchena bolliana) - MISSISSIPPI - A very heavy infestation on small pecan trees in Harrison County. (McGehee).

PECAN PHYLLOXERA (Phylloxera devastatrix) - MISSISSIPPI - On pecan twigs from Leake County May 21. Unusual for this species to attack pecan trees in a hilly section of State. (Hutchins).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Infesting pecan trees in several southern areas. (Oliver).

A SCALE (Lecanium pruinosum) - CALIFORNIA - An increase over other years in walnut orchards in Merced County. Control used. (Cal. Coop. Rept.).

FIG SCALE (Lepidosaphes ficus) - CALIFORNIA - Moderate infestation in 700 acres of figs in Merced County. Control used. (Cal. Coop. Rept.).

A BEETLE (Hoplia oregona) - CALIFORNIA - Severe in some vineyards in Merced County. (Cal. Coop. Rept.).

BLACK CHERRY APHID (Myzus cerasi) - MICHIGAN - Eggs hatching at Coloma, May 14. (Hutson). OREGON - Winged forms first observed in Benton County, May 23. (Jones).

OBLIQUE-BANDED LEAF ROLLER (Archips rosaceana) - OREGON - Fairly prevalent in filberts, prunes, apples and blueberries near Forest Grove. (Prescott).

CLOVER MITE (Bryobia praetiosa) - CALIFORNIA - General over Lake County in pear and prune orchards. (Cal. Coop. Rept.). NEW MEXICO - Heavy in untreated orchards in Taos and Rio Arriba Counties. Light in treated orchards. (Durkin, May 18).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - A single adult male captured in trap in a sapote tree at San Ysidro in San Diego County, May 25. This is the second Mexican fruit fly captured in California and first since August 9, 1954 when a female fly was taken in a trap at San Ysidro. (Cal. Coop. Rept.).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - Recent extensions include the following areas: Denaud, Hendry County; Immokalee, Collier County; Fort Myers, Lee County; Englewood, Sarasota County; Hicoria and Lake Placid, Highlands County; and an infestation 20 miles east of Lake Wales in Polk County. (P. P. C.)

TRUCK CROP INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MISSISSIPPI - Infestations earlier than usual in Harrison County. (McGehee). SOUTH CAROLINA - Overwintered adults numerous in Charleston area, May 12. Occasional egg cluster. (Reid). VIRGINIA - Some oviposition in Norfolk area. Adults not very numerous. (Brubaker, Greenwood, Hofmaster). NORTH CAROLINA - Unusually heavy this spring in Duplin County, most untreated plantings completely destroyed. (Reid, Jones, Farrier). Damage to beans in Columbus County. (Owen). RHODE ISLAND - First overwintering adult found in garden debris week of May 14. No sign of extensive activity. (Steve).

BEAN LEAF BEETLE (Cerotoma trifurcata) - DELAWARE - Heavy damage in Georgetown area. (Milliron). VIRGINIA - Heavy damage to beans in Grayson and Patrick Counties. (Simpson, Olinger). Sufficient numbers to cause considerable damage to early beans in Norfolk area. (Brubaker, Greenwood, Hofmaster). NORTH CAROLINA - Present generally on beans in Duplin and Sampson Counties but damage light. (Jones, Farrier). ILLINOIS - Attacking early beans. (Ill. Ins. Rept.). MISSOURI - Beginning to show up in gardens in southeastern area. (Wkly. Rept. Fr. Grow.).

PEA APHID (Macrosiphum pisi) - DELAWARE - Light in most commercial plantings in Lincoln area, moderately abundant on Primehook Neck. (Milliron). VIRGINIA - Some growers still treating peas on Eastern Shore. (Brubaker, Greenwood, Hofmaster).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Continues to deposit eggs on potatoes, Dover southward. (Milliron).

POTATO FLEA BEETLE (Epitrix cucumeris) - DELAWARE - Troublesome on potatoes throughout State. (Milliron). PENNSYLVANIA - Adults plentiful on potato, tomato and tobacco in York and Lancaster Counties. Injury apparent. (Pepper).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - NORTH CAROLINA - County-wide infestations in Alamance and Granville Counties. Attacking tomato and potato as well as tobacco. (Corbett, Chamberlin).

TOMATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adult counts on matrimonyvine average 90 per 100 sweeps. Of concern to potato and tomato growers. Control recommended, Larimer County. (Exp. Sta.).

GARDEN SPRINGTAIL (Bourletiella hortensis) - CONNECTICUT - Generally abundant at Mt. Carmel and feeding on foliage of spinach seedlings. (Quinton). DELAWARE - Troublesome generally on potatoes and tomatoes. Attacking spinach at Newark. More abundant in State than for past several years. (Milliron).

CUTWORMS - DELAWARE - Agrotis ypsilon destructive to cabbage in several areas. (Milliron). PENNSYLVANIA - Damaging large planting of tomatoes in Dauphin County. Controls necessary. (Gesell). NEW JERSEY - Damaging in Great Meadows area. (Ins. Div. News.). UTAH - Damaging tomato and cabbage sets in number of counties. (Knowlton). WASHINGTON - Euxoa ochrogaster damaging potatoes near Zillah. (Landis).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - IDAHO - Adults abundant in many potato fields throughout southern area and especially heavy in some fields of Canyon and Payette Counties. (Gittins, Bechtolt). WASHINGTON - Eggs unusually abundant on early-crop potatoes at Zillah. (Landis). OKLAHOMA - Building up rapidly in Okmulgee County. (Smith). MISSOURI - This species along with flea beetles and a tortoise beetle (Gratiana pallidula) severely injured Irish potatoes in the Columbia area. (Wkly. Rept. Fr. Grow.). NORTH CAROLINA - County-wide infestations on potatoes in Columbus County. (Owens). SOUTH CAROLINA - First-brood adults emerging at Charleston, May 12. (Reid). DELAWARE - Active on untreated potatoes throughout State. Feeding on tomatoes and laying eggs in several areas. (Milliron).

BLISTER BEETLES - TEXAS - Light to medium widespread on tomatoes in Van Zandt County. (Berry).

CABBAGE MAGGOT (Hylemya brassicae) - NEW JERSEY - Moderately heavy oviposition on cabbage in Warren County. Expect untreated plants will be destroyed or heavily damaged. (Ins. Dis. News). MASSACHUSETTS - Egg laying heavy in Amherst area. (Crop Pest Cont. Mess.). NORTH CAROLINA - Local infestations in Yancey County. (Dillingham). PENNSYLVANIA - Six puparia per square foot on cabbage in Luzerne County. (Gesell).

IMPORTED CABBAGEWORM (Pieris rapae) - MICHIGAN - First adult, May 11. (Hutson). DELAWARE - Moderate damage generally. (Milliron). SOUTH CAROLINA - This species and cabbage looper abundant on late spring cabbage at Charleston May 16. (Reid).

CABBAGE SEEDPOD WEEVIL (Ceutorhynchus assimilis) - IDAHO - Adults extremely abundant in turnip seed fields of Canyon County. Populations as high as 8 per sweep. (Gittins).

CABBAGE APHID (Brevicoryne brassicae) - TEXAS - Heavy local populations on cabbage in Uvalde County. (Richardson). DELAWARE - Serious near Georgetown. (Milliron).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - NORTH CAROLINA - Unusually numerous and persistent on squash in Duplin County this spring. (Reid). DELAWARE - Abundant in untreated squash, cucumbers and watermelons throughout Sussex County. (Milliron).

LEAF MINERS (Liriomyza spp.) - ARIZONA - General but light in all fields of cantaloup and honeydew melons in the Salt River Valley, May 17-22. (Ariz. Coop. Rept.). NEW MEXICO - Damaging tomato plants in Lea County and cucumbers and alfalfa in Dona Ana County. (Durkin, May 18).

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) - LOUISIANA - Infesting sweetpotato plant beds at 300 per 100 sweeps, St. Landry Parish. (Oliver).

RHUBARB CURCULIO (Lixus concavus) - WISCONSIN - Active and puncturing rhubarb petioles. (Wis. Ins. Bul.).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - COLORADO - Peak emergence, May 18, Weld County. (Exp. Sta.).

BEEF WEBWORM (Loxostege sticticalis) - COLORADO - Heavy flights in Larimer County, May 19-20. (Exp. Sta.).

BEEF LEAFHOPPER (Circulifer tenellus) - TEXAS - Medium to heavy local populations on beets in Dimmit and Zavala Counties. Breeding on beets and Russian-thistle. (Richardson).

THRIPS - CALIFORNIA - Thrips tabaci fairly heavy in Imperial County onion fields. (Cal. Coop. Rept.). NEW MEXICO - Frankliniella sp. Thrips tabaci damaging onions in Las Cruces area. Most growers spraying. (Durkin, May 18).

ONION MAGGOT (Hylemya antiqua) - IDAHO - Damage common in many onion fields throughout Canyon County. (Bechtolt).

ASPARAGUS BEETLE (Crioceris asparagi) - DELAWARE - Destroying spears at Slaughter Beach. Adults prevalent generally. (Milliron). UTAH - Infesting asparagus at Hunter and Ogden. (Knowlton).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WASHINGTON - Appearing much earlier than usual on hops near Moe, week ending May 18. (Landis).

CUTWORM ON STRAWBERRIES - WEST VIRGINIA - Feltia sp. destroyed two-thirds of plants in 2 acres of strawberries, Greenbrier County. (Dorsey, Hansen).

STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) - MICHIGAN - Adults and larvae numerous in strawberry plants in vicinity of Coloma, Watersmeet and Benton Harbor. (Hutson). IDAHO - In strawberry fields in Parma area. (Walz, Gittins).

STRAWBERRY WEEVIL (Anthonomus signatus) - WISCONSIN - Puncturing strawberry blossoms in Dane County. (Wis. Ins. Bul.). NEW YORK - Injury in one planting, Wayne County and fairly heavy population in 6 fields in Herkimer County. (Wkly. Rept.).

SPIDER MITES - VIRGINIA - Serious populations on strawberries in Norfolk area reduced by rains. (Brubaker, Greenwood, Hofmaster).

A NITIDULID (Lobiopa insularis) - LOUISIANA - Heavily infesting strawberry fields over strawberry belt. This was one factor causing the closing of the cold pack season of strawberries in Tangipahoa, St. Tammany and Livingston Parishes. (Oliver).

FLOWER THRIPS (Frankliniella tritici) - MICHIGAN - Adults abundant on strawberries at Millburg. (Hutson).

FLEA BEETLES - SOUTH CAROLINA - Damage to eggplant very serious in Lancaster May 15. (Cannon, Nettles). NEW MEXICO - Damaging tomato seedlings in Lea and Dona Ana Counties. (Durkin, May 18).

TOBACCO INSECTS

WIREWORMS - NORTH CAROLINA - Attacking 5 acres of newly-set tobacco in Northampton County. (Jameson). VIRGINIA - Medium infestation in 5-acre field of newly-set tobacco in Pittsylvania County. (Dominick).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - NORTH CAROLINA - Generally abundant on newly-set tobacco in Granville and Yancey Counties. (Chamberlin, Dillingham). Present but not serious in Northampton County. (Jameson). Moderate damage to one acre of aromatic tobacco and some damage in plant beds, Richmond County. (Scott).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - NORTH CAROLINA - Damaging 4 acres of field tobacco but not seriously in Northampton County. (Jameson).

TOBACCO BUDWORM (Heliothis virescens) - GEORGIA - General in fields checked in Cook County. (Smith). FLORIDA - Averaging one larva per sun tobacco plant at Quincy, Gadsden County. Several properties in county reported infested, May 10. (May, Tappan).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Light on tobacco in beds, week ending May 18, in St. Marys County. (U. Md., Ent. Dept.). FLORIDA - Adults lightly infesting 10 acres of tobacco at Bland, Alachua County, May 2. (Hunter).

HORNWORMS (Protoparce spp.) - NORTH CAROLINA - First egg of season on tobacco, May 19, near Whiteville. (Guthrie, Lawson). First moths taken in light traps at Faison, May 17 and at Clayton, May 21. This is 2-3 weeks later than usual. (Rabb, Farrier).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Numerous adults appearing on young cotton. Population counts in central area ranged from 376 to 1,984 per acre. Average was 1,073. (Robertson, Arant).

TEXAS - Twenty-four per acre in 10 fields in McLennan and Falls Counties compared with 90 per acre in 10 fields at same time last year.

(Parenica et al.) Activity increasing in lower valley, light to heavy infestations with some fields having 70-80 percent infestations. (Deer).

A few overwintered weevils in Brazoria and Jackson Counties. Light infestations in Lavaca County and Bell County. (Fuller, Martin, May 22).

ARKANSAS - Adults emerging in southwest area and in Desha County; some terminal injury. (Warren). LOUISIANA - Found in 19 of 32 fields examined in Tallulah area at rate of 117 weevils per acre for all fields.

This compares with 133 for same time in 1955 and 242 in 1954. Survival in cages to May 23 was 1.08 compared with .76 to same date in 1955.

(Gaines, Pfrimmer et al.) From 5-10 per 100 feet of row in Natchitoches Parish. Occasional weevil in several other parishes. (Oliver).

MISSISSIPPI - More weevils in some cotton fields in delta counties than ever recorded before on young cotton; as high as 13 per 50 feet of row. Damage to terminals and leaf feeding common in many fields. Treatment to reduce populations continues in older cotton. (Merkl, Furr et al.).

GEORGIA - Heavy in Baker and Cook Counties. (Smith, Drennon).

TENNESSEE - No evidence of carryover in western counties having infestations last year. (Locke). NORTH CAROLINA - Average 2.5 per 100 cotton seedlings in Scotland County. (McMahan). One to 3 per 100 plants in 3 fields in Cleveland County. (Mistic).

BOLLWORMS - TEXAS - Medium infestations in Jim Wells and Kleberg Counties. (Fuller, Martin). Some increase in lower Rio Grande Valley. (Deer). NORTH CAROLINA - Appearing on cotton in Scotland County. (McMahan).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Bloom inspection in lower Rio Grande Valley shows reduction in population and percent of fields infested compared with 1955. For example, Hidalgo County had 9 pink bollworms per 100,000 blooms and 7 percent of fields infested against 40 per 100,000 blooms and 17 percent last year. (PBW Cont. Proj.).

OKLAHOMA - Inspection of 813 bolls from standing stalks and 1,087 bolls from surface debris from the counties of Cleveland, Grady, Cotton, Jackson, Jefferson, Love, and Tillman yielded 21 live and 81 dead pink bollworm larvae from standing stalks, and one live and 53 dead larvae from surface debris. (Coppock et al.).

BROWN COTTON LEAFWORM (Acontia dacia) - TEXAS - A few small larvae in several fields in Waco area. (Parenica et al.). LOUISIANA - Decreased in cotton in Natchitoches Parish; only occasional larva. (Oliver).

SPIDER MITES - NEW MEXICO - Light in Eddy County. (Durkin, May 18). TEXAS - Building up in lower Rio Grande Valley. (Deer).

GEORGIA - Light in Henry County. (Hinton).

COTTON FLEAHOPPERS - TEXAS - Increase in adults over last week, occasional nymph in McLennan and Falls Counties. Counts of 1.1 per 100 feet of row in 10 fields compared with 6.1 for same time last year. (Parenica et al.). Light damage on older cotton in Maverick County. Increasing many parts of coastal bend area; heavy some fields in Kleberg County. Light in south central and several other areas. Light to medium infestations in Bell and Williamson Counties. (Fuller, Martin). ARIZONA - P. seriatus adults and nymphs numerous on globemallow in Pinal County, May 22. (Ariz. Coop. Rept.). ARKANSAS - From 0-5 P. seriatus per 10 sweeps in roadside vegetation in Greene and Clay Counties. (Warren). MISSISSIPPI - Common in many fields not treated for thrips in delta counties. (Merkl, Furr et al.). GEORGIA - P. seriatus light in Henry County. (Hinton). TENNESSEE - Small numbers in southwest Tennessee. (Locke).

THRIPS - ARIZONA - Frankliniella spp. generally light May 18 but increasing in areas of Yuma and Cochise Counties. (Ariz. Coop. Rept.). NEW MEXICO - Frankliniella sp. and Thrips tabaci light to heavy on cotton in Dona Ana and Eddy Counties. Damage in some untreated fields. (Durkin, May 18). TEXAS - Light in southwest, coastal bend areas. Light to medium some fields in upper coastal and north central areas. Light damage in south central area. Some heavy infestations in east, central and north central counties. (Fuller, Martin). MISSOURI - Average of 1-2 thrips per 10 plants in 10 fields of early cotton in New Madrid and Pemiscot Counties. (Adkisson). ARKANSAS - Non-existent to light. (Warren). LOUISIANA - Light to medium in many fields in Tallulah area, severe in a few fields. (Gaines, Pfrimmer et al.). MISSISSIPPI - Large numbers in many fields but cotton about past thrips damage stage in delta counties. (Merkl, Furr et al.). GEORGIA - Light to moderate in Elbert, Madison, Jackson, Newton and Spalding Counties. (Beckham, Johnson). TENNESSEE - Very light in west Tennessee. (Locke). NORTH CAROLINA - Severe damage in a few widely-scattered fields in Cleveland County. (Mistic). Population variable in Union County, some feeding evident. (Spyhalski).

APHIDS - ARIZONA - Aphis gossypii generally light on cotton May 18. Parasites effective at Tempe and Bowie. (Ariz. Coop. Rept.). NEW MEXICO - A. gossypii and A. medicaginis light in Eddy and Dona Ana Counties. (Durkin, May 18). TEXAS - Increasing some fields upper coastal area. (Fuller, Martin). ARKANSAS - Infestations spotty. (Warren). GEORGIA - Light in Jackson County. (Sell). TENNESSEE - Generally light in west Tennessee. (Locke). NORTH CAROLINA - Light in Union County. (Spyhalski).

FLEA BEETLES - GEORGIA - Moderate infestations of Systema in Elbert, Madison, Jackson, Newton and Spalding Counties. (Beckham, Sell, Johnson). TENNESSEE - Cotton infested with several species. Flea beetles unusually prevalent. (Mullett). SOUTH CAROLINA - Damage in some areas. (Nettles).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE SAWFLIES (Neodiprion spp.) - MARYLAND - Serious infestations of N. pratti on Virginia pine in Montgomery, Howard and Prince Georges Counties. (U. Md., Ent. Dept.). DELAWARE - Somewhat more abundant at Petersburg but decreasing at Georgetown. (Milliron). WISCONSIN - N. nanulus hatching in south central area, May 19. (Wisc. Ins. Bull.). MICHIGAN - N. pinetum hatching in Berrien County May 18. First larvae of N. sertifer in Ingham County May 13. (Hutson).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MICHIGAN - Spinning webs and active May 1 to 10 south of line running from Muskegon to Bay City. (Hutson). WISCONSIN - Feeding on new growth at Janesville. (Wisc. Ins. Bull.). PENNSYLVANIA - Problem in some areas. (Guyton).

CANKERWORMS - PENNSYLVANIA - More abundant in northern section of southeast area. (Menusan). WISCONSIN - Newly-hatched larvae on deciduous trees in southern area. (Wisc. Ins. Bull.).

GEOMETRIDS - WEST VIRGINIA - Heavy feeding on broadleaf trees in Greenbrier County. (Dorsey, Hansen).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - PENNSYLVANIA - Serious this year in southern half of State. Now migrating. (Guyton). Very abundant in northeast and southwest areas. (Gesell, Udine).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MINNESOTA - Hatching complete as far north as Two Harbors on north shore of Lake Superior. (Minn. Ins. Rept. Serv.). WISCONSIN - First-instar larvae active in north central area. (Wisc. Ins. Bull.).

TENT CATERPILLARS - OREGON - Not causing serious damage. Infestations on roadsides spotty. Malacosoma disstria heavily parasitized. M. fragilis has appeared in large numbers, 5 tents per roadside shrub for 5 mile distance. (Gentner).

ELM LEAF BEETLE (Galerucella xanthomelaena) - TENNESSEE - Appearing across State. (Mullett). ARKANSAS - Eggs and larvae of first generation found as far north as Paragould. Larvae will be heavy and controls warranted. (Warren).

BIRCH LEAF MINER (Fenusa pusilla) - RHODE ISLAND - Adults very active and abundant on birches in Kingston area. (Steve).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Total of 11,000 acres sprayed in Wayne and Pike Counties. (Guyton).

PINE BARK APHID (Pineus strobi) - VIRGINIA - Severely damaged young pines in Grayson County. (Rowell).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - COLORADO - Moderately heavy flight on May 19, Larimer County. (Exp. Sta.).

PINE SPITTLEBUG (Aphrophora parallela) - PENNSYLVANIA - Very heavy in 15-year old pine planting in Indiana County. Light in a 7-year planting. (Udine). DELAWARE - Numerous on loblolly pine at Petersburg. (Milliron).

ASH PLANT BUG (Neoborus amoenus) - CALIFORNIA - Medium infestations in ash trees in Tehama County; medium to heavy in Yolo County. (Cal. Coop. Rept.).

SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - Larvae mining needles of balsam fir in northeast area. All larvae have emerged from hibernacula. (Minn. Ins. Rept. Serv.).

COTTONY-MAPLE SCALE (Pulvinaria innumerabilis) - WASHINGTON - Considerable damage on silver maple at Pullman. (Telford).

A TINGID - WASHINGTON - Seriously damaging serviceberries and wild hawthorn near Pullman. (Telford, Kamal).

A HOLLY BUDMOTH (Rhopobota naevana ilicifoliana) - OREGON - Considerable damage in Multnomah and Clackamas Counties. Larvae nearing maturity. (Larson).

TULIPTREE SCALE (Toumeyella liriodendri) - NORTH CAROLINA - Heavy on Japanese magnolia in Robeson County. (Wray).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - NORTH DAKOTA - Heavy infestations on cotoneaster in LaMoure and Steele Counties. (N. D. Ins. Rept.).

EUROPEAN EARWIG (Forficula auricularia) - RHODE ISLAND - Adults active at Kingston. (Steve).

ROSE-SLUGS - MISSOURI - Causing much injury to roses in central areas. (Wkly. Rept. Fr. Grow.).

APHIDS - COLORADO - Continue to develop into damaging numbers on ornamentals, alfalfa, fruits. Favorable conditions. (Exp. Sta.).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (Siphona irritans) - OKLAHOMA - Rapidly increasing in Okmulgee County, serious in some localities. (Smith). Heavy, widespread infestations in most western areas. (Coppock). LOUISIANA - Attacking cattle, averaging about 200 per head on 280 steers, West Feliciana Parish. (Oliver). ALABAMA - Abundant throughout most of State. (Blake). VIRGINIA - Light to moderate on cattle at stock yards in Christiansburg (Turner), and light to moderate on cattle at Charlotte Courthouse (Morris). PENNSYLVANIA - Light infestation on cattle at Lucerne, Indiana County. (Gesell).

HOUSE FLY (Musca domestica) - ALABAMA - Increasingly numerous in many parts of State. (Arant). NORTH CAROLINA - A nuisance in Richmond, Stanly and Chatham Counties. (Scott).

HORSE FLIES (Tabanus spp.) - LOUISIANA - T. atratus, T. americanus and Tabanus (prob. lineola) very numerous about cattle late in the evening in West Feliciana, Pointe Coupee and Iberville Parishes. (Oliver).

SCREW-WORM (Callitroga hominivorax) - NORTH CAROLINA - Infestation in cow and lamb in Davie County. (Jones, Dogger).

SECONDARY SCREW-WORM (Callitroga macellaria) - FLORIDA - Adults averaged 100 per swarm in Franklin County, May 11. (Duggar).

MOSQUITOES - VIRGINIA - A problem in homes in Cumberland County. (Seay). NORTH CAROLINA - Psorophora howardi biting near Surf City. (Cromroy). SOUTH CAROLINA - More numerous in homes at York than during past few years. (Nettles, Lawrence). LOUISIANA - Populations of Aedes spp. heavy in Pointe Coupee, Iberville, West Feliciana and Assumption Parishes. (Oliver). COLORADO - All stages of Culex tarsalis, vector of equine encephalomyelitis, in Weld County, May 16. (U. S. Pub. Health Serv.). NORTH DAKOTA - Aedes spencerii appearing in Fargo area. (N. D. Ins. Rept.). RHODE ISLAND - Adults of Aedes cantator emerged in Point Judith area and A. canadensis in Kingston area. First spring brood of Culex pipiens adults in Kingston area. (Steve).

AMERICAN DOG TICK (Dermacentor variabilis) - VIRGINIA - Heavier than usual in Blacksburg area, Montgomery County. (Turner). PENNSYLVANIA - On children and dogs in Montgomery, Chester and Northampton Counties. (Menusan). NORTH DAKOTA - Infesting lawns and attacking children on farm near Niagara, Grand Forks County. (N. D. Ins. Rept.).

LONE STAR TICK (Amblyomma americanum) - MARYLAND - Two specimens found on a man operating a bird-banding station, West Ocean City, Worcester County, May 12. Det. W. E. Bickley. (U. Md., Ent. Dept.). NORTH CAROLINA - In Carteret County. (Cromroy).

FOWL TICK (Argas persicus) - NORTH CAROLINA - Extremely severe local infestation on chickens in Catawba County. (Harkema).

STORED PRODUCTS INSECTS

KHAPRA BEETLE (Trogoderma granarium) - WISCONSIN - Survey of five seed houses, five feed dealers and two malting establishments in Milwaukee, Madison, Beaver Dam, Brandon, Oshkosh and Berlin yield no specimens. (Wisc. Ins. Bul.).

BENEFICIAL INSECTS

LADY BEETLES - MINNESOTA - Common in southeast district. (Minn. Ins. Rept. Serv.). ARIZONA - High populations of Hippodamia convergens developing in many alfalfa fields in Yuma correlated with decrease of spotted alfalfa aphid. (Ariz. Coop. Rept.). IDAHO - Several species especially abundant in all alfalfa fields throughout southeastern and south-central areas. (Gittins).

PREDATORS - OKLAHOMA - Collops quadrimaculatus very abundant, 58 per 100 sweeps; Hippodamia convergens 11 per 100 sweeps compared with 36 last week; Orius tristicolor 46 compared with 11 last week. All collected in Payne County. (Fenton).

A KLAMATHWEED BEETLE (Chrysolina hyperici)-WASHINGTON - Eggs to third instar on klamathweed near Pullman. (Telford, Kamal).

A BRACONID PARASITE (Ascogaster quadridentata) - WASHINGTON - Thirty percent parasitism of overwintering codling moth larvae on untreated apple tree at Pullman, March 17. (Johansen).

A DAMSEL BUG (Nabis sp.) - SOUTH DAKOTA - Increasing in alfalfa; 3 adults per 25 sweeps. (Hantsbarger).

MISCELLANEOUS INSECTS

OLD HOUSE BORER (Hylotrupes bajulus) - PENNSYLVANIA - Numerous requests from householders in Northampton, Lebanon and Berks Counties. (Menusan). SOUTH CAROLINA - Reported from Columbia. Det. D. Dunavan. (Nettles).

MAYFLIES - VIRGINIA - Interfering with business at tourist court near Roanoke River, at Shawsville. (Raffenperger).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - MARYLAND - Larvae migrating from wild cherry and fruit trees and causing annoyance to residents in Baltimore suburbs. (U. Md., Ent. Dept.). VIRGINIA - Leaving nests and crawling over lawns and porches in large numbers in eastern Fairfax County. (Beard). Larvae crawling on lawns, across streets and on highways and so thick in some towns in northern part of State that people had to avoid stepping on them. (Rowell).

ELM LEAF BEETLE (Galerucella xanthomelaena) - PENNSYLVANIA - Severe nuisance in eastern half of State. (Guyton).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - MICHIGAN - Reports of swarms numerous, May 10 to 18 in area south of the line Manistee to Bay City. (Hutson).

ADDITIONAL NOTES

IOWA - Spot infestations of WIREWORMS damaging corn in Hamilton, Hancock, Marion, O'Brien and Polk Counties. Sod webworms, cutworms, seed-corn maggots, imbricated snout beetles and timothy billbugs reported active in localized areas. CORN FLEA BEETLES damaging corn in O'Brien County. EUROPEAN CORN BORER pupation reached the 50% point over southern half of Iowa for the week ending May 26; 10-20% pupation in central Iowa. CHINCH BUGS active in both corn and oats in southern third of State. Up to 12 adults per corn plant in some fields and 2-4 adults per square foot of oats. GRASSHOPPERS becoming more numerous as hatching proceeds. PEA APHIDS on alfalfa increasing to damaging point in south and central area. LADY BEETLES and LACEWING FLIES increasing. LESSER CLOVER LEAF WEEVIL larvae evident in scattered areas. GRAPE BERRY MOTHS emerging in south and central Iowa. PEACH TREE BORERS pupating at Knoxville. SPIDER MITES beginning to cause damage in berries in drought area. HORN FLIES continue to increase in numbers. Some herds in southern Iowa averaging 300 flies per animal. SQUASH VINE BORERS pupating in central Iowa. DIAMONDBACK MOTH and CABBAGE APHIDS present on cabbage generally over State. POTATO FLEA BEETLES damaging recently set tomato, egg plants, and other hosts. SPOTTED CUCUMBER BEETLES generally evident over southern half of State. ROSE APHIDS and LEAFHOPPERS present in numbers. (Harris).

CORRECTIONS: CEIR 6(21):453. Under codling moth in Oregon (Hood River), change May 14 to read May 16. Also on page 456 under cherry fruit fly in Oregon, change to read "emerged at The Dalles on May 16" in place of Hood River on May 14. (Capizzi).

CEIR 6(19):405. Under light trap collections at Tallulah, Louisiana, change Trichoplusia ni to read Rachiplusia ou.

CEIR 6(21):468. Under predators, Nevada, change damselflies to read damsel bugs. Under LIGHT TRAPS p. 470, delete Indiana records; these records from bait traps. Also delete Indiana records under LIGHT TRAPS in CEIR 6(20):432.

LIGHT TRAP COLLECTIONS	Pseud. unipun.	Agrotis ypsilon	Prod. ornith.	Perid. marg.	Feltia subt.	Heliothis zea viresc.	Protoparce sexta	Protoparce quinq.	Chor. Auxil.
ALABAMA									
Auburn 5/20-26	41	9	16			12			
ARKANSAS (Counties)									
Hope 5/18-24	7	8		2					
Stuttgart 5/17-23	6	2		3					
Fayetteville 5/19-25	10	4		6					
TEXAS									
Ferrell 5/7-21	280	6	24	13		12			
SOUTH DAKOTA									
Brookings 5/22-25	16								44
TENNESSEE (Counties)									
Shelby 5/15-21	120		4				10	1	
Madison	64					8			
Lawrence	5							2	
Maury	8	3	1			2	2	6	
Robertson	12		1						
Cumberland	6		2						
Knox	5	12				9			
Greene	43	6	4	5		4	1		
Blount	11	4		3		3			
Marion	21								
Johnson	27	19		8		4			
FLORIDA									
Sanford 5/15						4			
Homestead 5/17							21		
Quincy 5/16							4		
Monticello 5/16							1		
KANSAS									
Manhattan 5/25									17
NORTH CAROLINA									
Clayton 5/23-24			2		1		1	1	
INDIANA (Counties)									
Lawrence 5/14-22	32	6	10						
Tippecanoe	87	13	3						
GEORGIA (Counties)									
Tift 5/13-19	4	30	10		65	13	3	18	5
Spalding 5/12-18	13	11	2	2	27		21	1	9
MISSISSIPPI (Counties) 5/25									
Coahoma		7		11	3	2			
Humphreys	41	4	2	5	3	3			
Lauderdale						9			
Oktibbeha	21	2	3	6	4	12	2		
*Washington 5/18-24	848	240		613		58			
LOUISIANA									
*Tallulah 5/19-25	98	23	13	35	23	66	3	22	
Curtis 5/17-21	1	8	19	14	21	28			
Baton Rouge 5/19-25	1	9	42	5	73	29			
Franklin 5/18-23		10	18	8	22	20			
ILLINOIS									
Urbana 5/18-24	12	4							
SOUTH CAROLINA									
Charleston 5/13	1	3	4		3	2	1	3	
Clemson 5/20-26	5	7	28		12	6		13	9
Florence 5/12-18		24	21	3	51	42			3
NORTH DAKOTA									
Fargo 5/20-21	3								
WISCONSIN									
Deforest 5/18-23	10	1							

*Two traps, Washington; three traps, Tallulah.

WEATHER FOR THE WEEK ENDING MAY 28, 1956

Last week's weather was similar in many respects to that of the previous week as temperatures for both weeks averaged much below normal in the Northeast, much above in the northern Rockies, and about normal elsewhere, and moderate to heavy precipitation fell in a wide belt from Missouri northeastward through the Ohio Valley. The chief differences, lower temperatures in the Northeast, and the extension of the belt of generous rainfall over extensive areas of the Great Plains with additional moderate to heavy amounts over large portions of Colorado and Wyoming and the central and northern Great Basin, were the outstanding features of last week's weather.

As a cold air mass from Canada moved across the northeastern quarter of the country on the 24th and 25th, minimum temperatures fell below the freezing level from Michigan to New England and in scattered areas as far south as Kentucky and Virginia. In northern New England on the morning of the 25th minima were 6° to 12° below freezing with a low of 19° at Cavendish, Vt., and nearly all stations in the section reported their lowest temperatures for so late in the season. Some of these late season lows were: Nantucket, Mass., 27°; Harrisburg, Pa., and Cleveland, Ohio, 35°; Hartford, Conn., Providence, R. I., and Charleston, W. Va., 33°; Caribou and Portland, Maine, 27°; Burlington, Vt., 28°; Albany, N. Y., 30°; Richmond, Va., 41°; and Raleigh, N. C., 43°. Preliminary estimates of damage in New England were placed at \$10,000,000 with fruit losses accounting for one-half the total. Crop losses in New Jersey were estimated at hundreds of thousands of dollars. Additional losses, less severe and of unestimated extent, were reported from New York, Michigan, Pennsylvania, Maryland, and Delaware.

Drought areas in the Great Plains which received moderate to heavy rains were central and western Nebraska, all of Kansas except the northcentral, northeast, and extreme southeast portions, virtually all of Oklahoma, western Texas except the extreme southwest, the eastern third of New Mexico, and Colorado except the northeastern portions.

In the Great Basin of the Far West rains maintained good moisture conditions in northern areas, but increased the flood threat in Idaho, western Wyoming, and northern Utah where streams were already high from melting snow. The first part of the week was relatively warm over nearly the entire country with daytime temperatures at or above the 90° level over all the South and in the Mississippi Valley as far north as Milwaukee, Wis. (Summary Supplied by U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1955

CALIFORNIA

Compiled by Stewart Lockwood

Cereal and Forage Insects

GRASSHOPPERS caused approximately \$1,390,176 in crop and range damage. Control was applied to approximately 78,868 acres protecting 153,582 acres of high valued crops at an estimated savings of \$6,583,695. Melanoplus devastator was dominant foothill species; Oedaleonotus enigma was intermixed with other species in localized areas; and Camnula pellucida predominated at higher elevations. Other species of importance: M. marginatus, M. femur-rubrum, M. differentialis, M. mexicanus, Sticthippus californicus, and Trimerotropis spp. Unidentified species of MITES were injurious to alfalfa and alfalfa seed crops in a number of counties. PEA APHID (Macrosiphum pisi) damage was heavy in scattered localities in 1955. Control was generally successful. SPOTTED ALFALFA APHID - In many areas infestation was so new in 1955 the exact place of this insect in the economics of alfalfa production is still undeveloped. However, in 21 counties crop loss from the aphid on 726,000 acres was estimated by Agricultural Commissioners at \$9,330,000 plus expense of treatments, \$3,521,000 -- total \$12,851,000. Crop losses per acre in counties where infestations were widespread ranged from an estimated \$8.00 to \$36.00 with an approximate average of \$10.00. A number of predatory insects have been observed destroying this aphid. Fungus diseases have been found destroying the pest also.

CLOVER SEED CHALCID (Bruchophagus gibbus) was medium to heavy in alfalfa seed crops in Imperial County. CLOVER ROOT CURCULIO (Sitona hispidula) caused some severe damage to clover during early spring in northern border counties. RUSTY PLUM APHID (Hysteroneura setariae) was first found in California on unidentified grass in Imperial County. ENGLISH GRAIN APHID (Macrosiphum granarium) infestations during May were heavy in some wheat fields in Santa Barbara and San Luis Obispo Counties. APPLE GRAIN APHID (Rhopalosiphum fitchii) was heavy on Merion bluegrass in Kern County. Some heavy infestations of BROWN WHEAT MITE (Petrobia latens) occurred in northern counties. Barley was the principal host crop. TADPOLE SHRIMPS (Aphus oryza-phagus and A. biggsi), while widespread over rice growing areas of the State, these pests were not as abundant as in 1954. A WHEAT SAWFLY (Pachynematus sporax) - 16,800 acres of wheat in San Luis Obispo and Santa Barbara Counties were infested. This acreage was air-sprayed twice. A severe infestation of WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) occurred in seedling corn in San Joaquin Valley. A number of CUTWORMS, principally Crymodes devastator, were responsible for damage to corn.

Stored Grain Insects

KHAPRA BEETLE (Trogoderma granarium) - By end of 1955 there were 233 properties in 18 counties infested with khapra beetle. During the year, 103 premises having a total of 38,479,454 cubic feet were treated,

i. e., fumigated and the surroundings sprayed. Approximately 280,000 pounds of methyl bromide, 1,500 gallons of emulsifiable malathion solution containing 5 pounds actual malathion per gallon, and 90,000 gallons of diesel oil were used during the year.

Cotton Insects

Generally SPIDER MITES during June were much lighter than usual. In July they increased in San Joaquin Valley cotton and medium infestations began to appear in southern California. While generally lighter than in past years, some increases occurred in cotton fields in the San Joaquin Valley. A well distributed and comprehensive sampling of gin trash from the 743,000 acres of cotton planted in 1955 and examination of green cotton bolls from 1,056 fields in six counties was made for PINK BOLLWORM (Pectinophora gossypiella). No pink bollworms were taken in any of the inspections or examinations. BOLLWORM (Heliothis zea) was the most important cotton pest in the State according to reports from principal cotton producing counties. LYGUS BUGS (Lygus elisus and L. Lineolaris) - Damage to cotton, while less than many years, was of considerable importance over much of the cotton areas.

Citrus Insects

CITRUS RED MITE (Metatetranychus citri) - Some locally heavy infestations in citrus orchards in early 1955 in southern California but populations were reduced rapidly by heat wave in late summer. Some heavy infestations of CITRUS BUD MITE (Aceria sheldoni) occurred in coastal lemon orchards in southern California. BLACK SCALE (Saissetia oleae) - By mid-summer infestations were spotted over much of southern citrus belt ranging from light to heavy in density; in some areas seemed somewhat heavier than in 1954. In July a general increase was reported in interior areas. A considerable increase became evident in some groves in double-brooded areas along the coast. CITRICOLA SCALE (Coccus pseudomagnolarium) infestations in central California were spotted. Some severe infestations in southern California were reduced by repeated treatments. CALIFORNIA RED SCALE (Aonidiella aurantii) infestations in early 1955 were generally lighter than in the past in major citrus producing counties. Seasonal buildup occurred but extreme heat during September is credited with a reduction of this scale over much of the southern area.

Deciduous Tree-fruit Insects

CLOVER MITE (Bryobia praetiosa) adults were active all year but overwintering eggs were heaviest in years in many pear orchards in Mendocino County. In El Dorado County this pest was active during entire summer. Heavy infestations occurred in prune orchards in Napa County. In Santa Clara County infestations were reported moderate on 41,000 acres of prune and pear orchards. Light to heavy infestations occurred in Los Angeles, San Bernardino and San Joaquin Counties. From 6 to 10 percent loss of leaves occurred in San Luis Obispo County almond orchards. Light to heavy populations of several species of SPIDER MITES, particularly Metatetranychus ulmi and Tetranychus telarius, continued to cause considerable damage to deciduous fruit orchards over entire State. By the middle of June these two pests were reported infesting 40 percent of

the prune foliage in Napa County. PEAR PSYLLA (Psylla pyricola) infestations were found for first time in a commercial pear growing district in California in 1955. The known infested area was held in Potter Valley, Mendocino County, until in June when a light infestation was found in Lake County. ORIENTAL FRUIT MOTH (Grapholitha molesta) surveys in the San Joaquin Valley showed this insect far more common than in past years in Kings River area near Fresno but not as active or numerous as in 1954, due largely to the intense control efforts. Some heavy infestations of APPLE APHID (Aphis pomi) occurred in apple orchards of central coastal area. A STINK BUG (Euschistus conspersus) caused damage particularly in the Sacramento Valley and foothill orchards. WALNUT HUSK FLY (Rhagoletis completa) caused some heavy damage to peaches in San Bernardino County. CODLING MOTH (Carpocapsa pomonella) - In general this insect has been of much less importance for the past several years since growers have used DDT. Increased difficulty in control was reported during the year. ORANGE TORTRIX (Argyrotaenia citrana) damage to apples continued into harvest season in Santa Cruz County.

Grape Insects

GRAPE MEALYBUG (Pseudococcus maritimus) - Overwintering populations ranged from light to heavy. Severe damage to grapes in August in southern San Joaquin Valley vineyards. GRAPE LEAFHOPPERS (Erythro-neura elegantula and E. variabilis) while much lighter than in past years, damaging numbers occurred in several grape producing areas. ACHEMON SPHINX (Pholus achemon) was heavy in vineyards in Coachella Valley.

Nut Crop Insects

PEACH TWIG BORER (Anarsia lineatella) caused extensive and heavy damage to almonds over much of almond producing areas. NAVEL ORANGE WORM (Paramyelois venipars) damaged almonds in many areas in the Central Valley as far north as Colusa County. Loss from this pest was greater than in past years. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) damaged walnut orchards in northern Sacramento Valley in considerable quantities of sunburned walnuts. WALNUT APHID (Chrom-aphis juglandicola) infestations were medium in some southern California walnut orchards early in the spring. By mid-spring heavy infestations occurred in San Joaquin Valley. Severe infestations in 9,000 acres of walnuts occurred south of San Francisco Bay in October. WALNUT HUSK FLY (Rhagoletis completa) was light in walnut orchards in San Bernardino County; medium to heavy in Riverside County. The known infested area in Sonoma County was enlarged in August by the finding of an adult approximately eight miles north of the previously known infestations. Continuing surveys in Sonoma County showed light general infestations in August in Sonoma Valley extending 15 miles along its length and two miles wide. CODLING MOTH was heavy in Payne variety walnuts in May in Stanislaus County. Infestations light in Glenn County, medium in Riverside County.

Small Fruit Insects

CYCLAMEN MITE (Steneotarsonemus pallidus) continued of more importance than other pests in California strawberry fields. Greatest losses occurred south of San Francisco Bay, however, severe damage was reported from other coastal counties. An increase occurred in the hotter,

dryer San Joaquin Valley. TWO-SPOTTED SPIDER MITE was second only to cyclamen mite in intensity of damage in strawberry fields and more widespread than the cyclamen mite. STRAWBERRY APHID (Pentatrichopus fragaefolii) in some areas was more prevalent than average.

Sub-Tropical Fruit Insect Pests

A FIG RUST MITE (Rhyncaphytoptus ficifoliae) caused partial defoliation of young fig leaves in San Joaquin Valley and SPIDER MITES were responsible for considerable leaf damage to figs in the San Joaquin Valley. FIG SCALE (Lepidosaphes ficus) was heavier than usual in fig orchards in some localities in the San Joaquin Valley; some trees completely defoliated. BLACK SCALE (Saissetia oleae) infestations ranged from light to heavy in the Central Valley. A SCALE (Aspidiotus lataniae) damaged avocados in some southern California localities. OLIVE SCALE (Parlatoria oleae) continued as a limiting factor in economic production of olives for sale as fruits and less responsible for loss to olives grown for oil. Heaviest losses occurred in southern San Joaquin Valley.

Shade Tree, Forest and Ornamental Insects

CALIFORNIA OAKWORM (Phryganidia californica) infested several areas, particularly near central coastal part of the State. ELM LEAF BEETLE (Galerucella xanthomelaena) caused up to total defoliation in many places on untreated elms. A PSYLLA (Psylla uncatoides), new to California, was found at Benecia, Contra Costa County and at Berkeley, Alameda County. Preferred hosts appear to be certain trees of the Albizzia and Acacia group. Fairly heavy infestations caused little discernible damage. A PSYLLA (Psylla flocossa) was heavy in wild ceanothus in San Diego County.

Truck Crop Insects

SPIDER MITES (Tetranychus telarius and others) were not as large a factor in production of beans as in years past though some severe damage occurred in scattered localities in Central Valley. A number of APHIDS were responsible for damage to truck crops and the expense of controls. CABBAGE APHID (Brevicoryne brassicae) was widespread with high populations on all cole crops. Some damage to a number of truck crops over State from GREEN PEACH APHID (Myzus persicae). Damage from transmission of diseases as well as from direct feeding. APHIDS damaged lettuce in coastal counties south of San Francisco and in the Imperial Valley. Much of this by green peach aphid. A LETTUCE ROOT APHID (Pemphigus bursarius) was found on poplar trees in the Santa Clara Valley and in Santa Cruz County. Considerable damage to lettuce and sugar beet roots from an unnamed aphid also occurred in same areas.

BEEF LEAFHOPPER (Circulifer tenellus) damage to sugar beets, melons, tomatoes and cucumbers was kept low in central California by treatment. Approximately 225,000 acres in 8 counties were sprayed by airplane. CORN EARWORM damage to both sweet and field corn continued. In some instances control seemed to be fairly effective. BEEF ARMYWORM (Laphygma exigua) damaged a number of truck crops over much of southern and central California.

Beneficial Insects

KLAMATHWEED BEETLES, principally Chrysolina gemellata and in a lesser degree, C. hyperici, were effective over much of State in reducing Klamathweed infestations. Native PREDATORY INSECTS such as big-eyed bugs, lacewings, lady beetles and syrphid fly larvae continued to aid in reducing populations of aphids. In some areas reduction of the spotted alfalfa aphid was quite apparent until mid-summer. Parasites and predators introduced in California by the University of California or the U. S. Department of Agriculture and distributed from insectaries were responsible for considerable aid on pest reduction, particularly when not affected by chemical controls. Reduction of the fig scale by Aphytis "C" was excellent in central San Joaquin Valley. Here also this parasite reduced the oystershell scale on poplar trees grown near fig orchards. The MEALYBUG DESTROYER (Cryptolaemus montrouzieri) and VEDALIA (Rodolia cardinalis) were not so effective in control of Baker's mealybug or cottony-cushion scale in areas where considerable quantities of organic phosphate sprays were used. PURPLE SCALE PARASITE (Aphytis "X") was credited with reduction of this pest in some coastal citrus orchards.

This summary has been abstracted from the Monthly Cooperative Insect Pest Reports for 1955.

USDA, AGRICULTURAL RESEARCH SERVICE
ENTOMOLOGY RESEARCH BR
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3-7-55 PLANT INDUSTRY STATION
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