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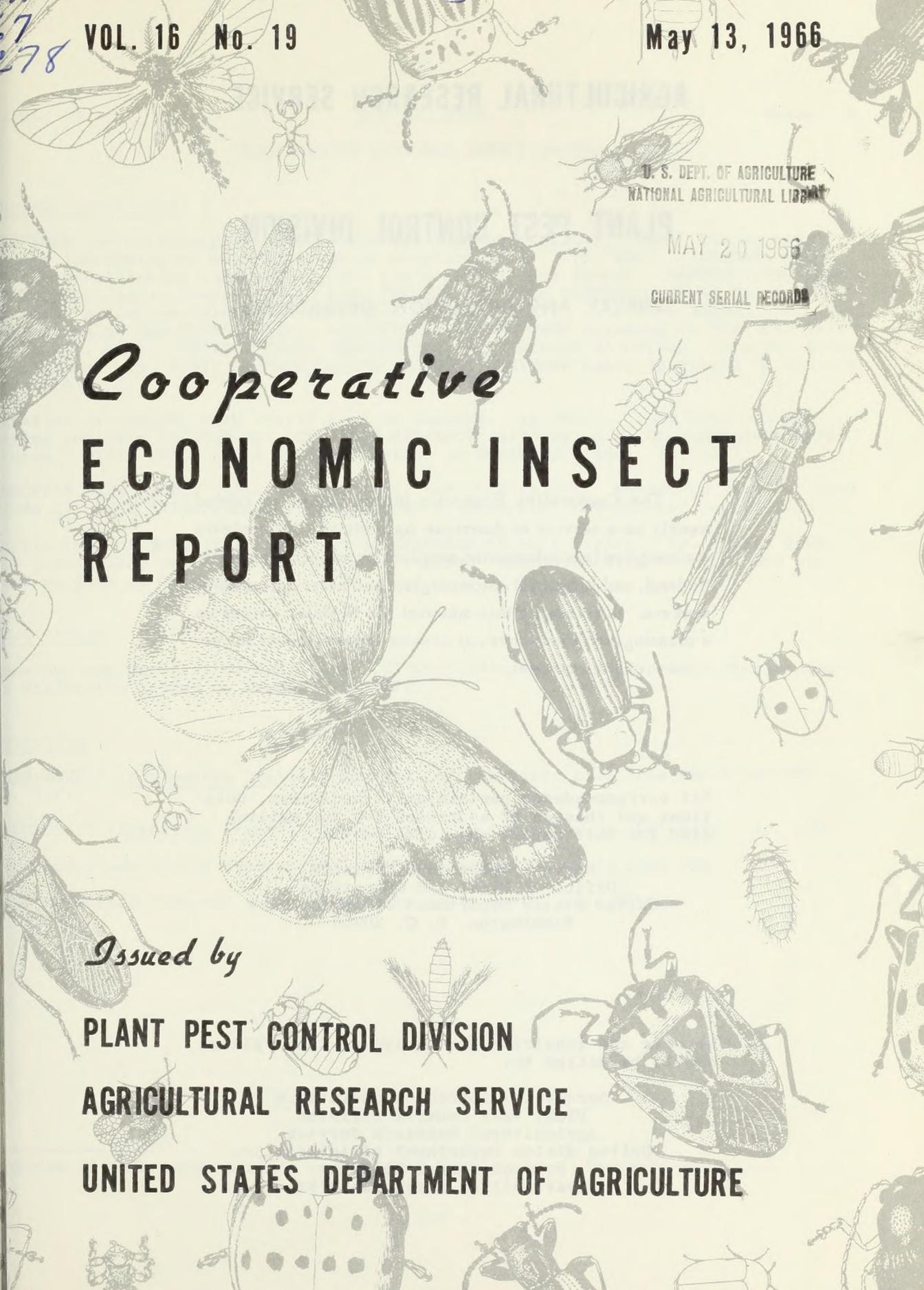
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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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COOPERATIVE ECONOMIC INSECT REPORT

Current Conditions

ARMYWORM larvae appearing in Illinois and Missouri; *Heliothis* spp. larvae and adults increasing on several crops in southern areas. (p. 405). EUROPEAN CORN BORER overwintering survival highest since 1959 in New Jersey. SOUTHWESTERN CORN BORER pupating in Mississippi. ARMY CUTWORM and PALE WESTERN CUTWORM destructive to small grains in Colorado. (p. 406). ALFALFA WEEVIL continues destruction in many areas of the Nation. (pp. 407-408). GRASSHOPPERS hatching in Utah and Oklahoma. (p. 418). WHITE-FRINGED BEETLES destroyed stands of cotton, corn and beans in Alabama. (p. 419). CABBAGE LOOPER and BEET ARMYWORM heavy in cotton in Arizona. (p. 411).

Pupation of CODLING MOTH nearly over in Indiana. (p. 412). PLUM CURCULIO egg laying underway in Alabama. EUROPEAN RED MITE building up on orchards in several States. WHITE PEACH SCALE crawlers active in North Carolina. (p. 413).

EUROPEAN PINE SAWFLY hatched in Ohio but not in Michigan. Damage to various hardwoods by TENT CATERPILLARS very noticeable throughout the Nation. (p. 415).

Populations of MOSQUITOES expected to increase in most States. (p. 416). HORN FLY populations building up in several states. LONE STAR TICK averaged 400 per head on cows in Oklahoma. (p. 417).

Predictions

Numerous egg deposits of VARIEGATED CUTWORM indicate possible heavy infestations in Willamette Valley of Oregon. (p. 411).

Detection

PEAR SAWFLY (*Hoplocampa brevis*) reported for the first time from RHODE ISLAND. (p. 412).

A BRACONID (*Apanteles crambi*) reported for the first time in Delaware. (p. 418).

Additional new county records for other species reported on page 422.

● Detection Reminder - Look for these Apple Pests. (p. 423).

Reports in this issue are for week ending May 6 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING MAY 9

HIGHLIGHTS: (1) Very cold weekend. North Central and Northeast. (2) Heavy showers again in Texas.

TEMPERATURE: The week averaged warm in the West and cool in the East. This followed 2 weeks of rather cool conditions in the Rocky Mountains and northern Plains areas. The strong, warming trend in the West sent temperatures into the 80's and 90's from Mexico to Montana by Friday. Temperatures were at record high levels in the lower Missouri Valley. The East remained cool but at the weekend a new mass of cold air affected the northern Plains and east to New England. Near record low temperatures were occurring late Sunday from Montana to Maine and local snows occurred in Pennsylvania and other areas.

Weather continued on page 422.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - MISSOURI - Adult observed in Columbia, Boone County, April 21. Two larvae observed in pasture in Jasper County on May 4. (Thomas). Hatching in southern Pemiscot and Dunklin Counties May 5. Larvae ranged 0-3 per square foot. (Houser). ILLINOIS - None found in wheat in southern area but occasional small larvae swept from grass. (White, Moore). TEXAS - Light but increasing on small grains in Kaufman, Denton, Collin and Rockwall Counties. (Turney). FLORIDA - Larvae very light on oats at Gainesville, Alachua County. (Mead).

CORN EARWORM (Heliothis zea) - ALABAMA - Numerous larvae 2-15 days old feeding in fields of crimson clover and vetch and along roadsides in Montgomery, Dallas, Marengo and Perry Counties; about 25,000 per acre. Few adults of TOBACCO BUDWORM (H. virescens) in flight around lights in Lee County. Heliothis spp. larvae abundant on various hosts near cotton; about 25,000 to 30,000 per acre based on sweep counts. (McQueen). MISSISSIPPI - First and fourth instars of H. zea light on alfalfa in Holmes County. (Dinks). TEXAS - Heliothis spp. eggs and/or larvae found on following in host plant survey: Indian paintbrush, bluebonnets, wild verbena, Texas star, wild geranium, evening-primrose and spiderwort. Heaviest on Indian paintbrush and Texas star; 73 specimens collected as eggs or larvae from Indian paintbrush and Texas star determined as H. zea when reared to fifth instar. (Cowan et al.). OKLAHOMA - First H. zea adults of season taken in light trap near Altus, Jackson County, May 3. (Okla. Coop. Sur.). H. zea larvae damaged some fruits in grapefruit grove on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

BEEF LEAFHOPPER (Circulifer tenellus) - UTAH - Long-distance movement reached to 5 miles north of Elberta, Utah County, where 6 pale adults including 2 males, taken on Cheririnia repanda and other hosts in 400 sweeps. (Knowlton, Murphy).

GREENBUG (Schizaphis graminum) - MISSOURI - Causing severe damage to bluegrass in small spots throughout western half of State. Apparently originated with overwintering aphids. (Thomas, Craig). MINNESOTA - First record for season April 29 in counties bordering Iowa; collected in windsock trap on same date at St. Paul. Extremely low throughout area. (Minn. Ins. Rpt.).

POTATO LEAFHOPPER (Empoasca fabae) - ILLINOIS - One specimen, apparently this species, swept from alfalfa in southern area. (White).

SIX-SPOTTED LEAFHOPPER (Macrosteles facifrons) - MISSOURI - Averaged 500 per square foot in barley in 2 fields near Newburg, Phelps County, April 28. Ten percent adults. Barley severely stunted and yellowed. Heavy in occasional wheat field in southwestern district. (Houser, Thomas). WISCONSIN - Females range 1-4 per 100 sweeps in grain in Spring Green and La Crosse-Trempealeau regions. (Wis. Ins. Sur.). MINNESOTA - Appeared in alfalfa and small grains after 2 days of strong south winds. Generally low in east central and central districts; highest counts 1 per 10 sweeps in alfalfa in central district. First reported week of April 25 in extreme southern counties. Reported for first time in central and east central counties May 5. (Minn. Ins. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Light buildup noted in alfalfa in most areas of Cochise County, especially in Steward district. (Ariz. Coop. Sur.). OKLAHOMA - Ranged 50-500 per 10 sweeps in most alfalfa in northwest and north central areas. Up to 2,400 per 10 sweeps in Major County field. Heavy in Blaine County. Averaged 5 per 10 sweeps in sweetclover in Garfield County. (Okla. Coop. Sur.). VIRGINIA - Winged form collected from alfalfa in Prince Edward County; also in 2 fields of clover in Cumberland County. First report of season. (Pienkowski, Isakson).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW JERSEY - Average overwintering survival of larvae in 105 corn fields throughout State highest since 1959. (Ins.-Dis. Newsltr.). NORTH DAKOTA - Reported for the first time in Rolette County. Survey in Dickey and Sargent Counties showed 20 percent mortality of overwintering larvae. Mortality appears lower than in 1965. (Brandvik).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - MISSISSIPPI - Pupating in old corn stubble in Oktibbeha County. Emergence beginning. (Davis). First moth of overwintering generation caught in light trap May 5 in county. (Douglas).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - ALABAMA - Larvae noted in isolated fields of young corn in Montgomery and other counties. Entering stalks below ground line and feeding on lower bud section causing center 2 or 3 leaves to die. (McQueen).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - ILLINOIS - Field averages for number of eggs per pint of soil ranged 0.8 to 36.4 in northern area. (Weekman, Petty).

CHINCH BUG (*Blissus leucopterus*) - TEXAS - Heavy on corn 3-12 inches high in following counties: Gonzales, Bastrop, Karnes, Goliad, Live Oak, Jim Wells, Refugio, Victoria, Wharton, Colorado and Austin. Heaviest near good overwintering sites. (Parker).

SMALL GRAINS

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - MINNESOTA - Winged forms and small nymphs in winter grains, roadside grasses and emerging spring grains. Generally low in east central and central districts. Ranged 5-22 per linear foot of row on oats in Scott County. Yellow feeding spots very evident on seedlings. Few lady beetles in some fields. (Minn. Ins. Rpt.). WISCONSIN - Alates and nearly full-grown apterae range 1-10 per 100 sweeps in grain in Spring Green area. Ranged 4-12 per 100 sweeps in La Crosse-Trempealeau area; about 50 percent alates. (Wis. Ins. Sur.). ILLINOIS - Varied 160-1,360 (average 552) per 100 sweeps in wheat just heading in southeast district. (White). OHIO - Low levels in 11 wheat fields in northwestern and western areas. Averaged 4 per 50 sweeps. (Rose). ARKANSAS - Continues numerous in wheat in northeast. Lady beetles building up. (Boyer).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - MINNESOTA - In extreme southern counties April 27. Ranged 1-2 per 100 sweeps in small grain. (Minn. Ins. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Light to moderately heavy in barley fields in Dona Ana County. (Elson, Nielsen).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - COLORADO - Larvae require control in scattered wheat fields in Baca, Bent, Crowley, Otero and Prowers Counties. (Fitzsimmons et al.).

PALE WESTERN CUTWORM (*Agrotis orthogonia*) - COLORADO - Required replanting and controls in barley in Weld County. (Urano).

A THRIPS (*Frankliniella bispinosa*) - FLORIDA - Abundant on oats and rye at Gainesville, Alachua County. (Mead).

TURF, PASTURES, RANGELAND

A CHINCH BUG (*Blissus insularis*) - TEXAS - Medium to heavy on St. Augustine lawns throughout Travis County area. Earlier than usual this year with rapid buildup. (Thompson).

A LEAFHOPPER (*Dikraneura carneola*) - UTAH - Very numerous on range grasses and lighter on fall wheat about 10 miles north of Elberta in Utah County. (Knowlton).

A CERAMBYCID BEETLE (*Derobrachus brevicollis*) - GEORGIA - Large numbers in some Bahia grass pastures in south section. (Jordan, May 1).

FRIT FLY (*Oscinella frit*) - CONNECTICUT - Larvae attacking developing whorls of reed canarygrass at Storrs. (Savos).

A MAY BEETLE (*Phyllophaga congrua*) - MISSOURI - Emerging in Columbia, Boone County. Det. by W. S. Craig. (Peters).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - IDAHO - Adults and egg deposition general in Cherry Lane and Lenore, Nez Perce County. Third instars indicate continual activity in spite of plant-damaging freeze April 18. (Kambitsch, O'Keefe, Portman). WYOMING - Adult activity increasing in alfalfa fields of Hot Springs, Washakie, Big Horn and Park Counties. Ranged 2-3 adults per sweep. Mating noted in all areas. (Pfadt, Marks). UTAH - Adults ranged 1-5 per 25 sweeps in Cache County alfalfa fields. (Knowlton). COLORADO - Larvae light to moderate; 0-250 per 100 sweeps in scattered alfalfa fields in Baca, Bent, Crowley, Otero and Prowers Counties. (Colo. Ins. Sur.). MISSOURI - Nearly all alfalfa fields in "delta" area of southeastern district treated. Early to late instars ranged 200-500 per 10 sweeps. Pupation well underway; adults ranged 5-10 per 10 sweeps in Pemiscot County. First cutting in some fields destroyed. In all other fields, 80-100 percent of terminals damaged. Larvae ranged 100-150 per 10 sweeps near Cape Girardeau; 50-70 percent of terminals damaged. Larvae ranged 10-15 per 10 sweeps near Farmington, St. Francois County. Ten percent of terminals damaged. Larvae ranged 0-15 per 10 sweeps in Jefferson, Washington, Crawford, Gasconade, and Franklin Counties. Less than one percent of terminals showed damage in those counties. St. Francois, Jefferson, Washington, Crawford, Gasconade and Franklin are new county records. (Houser). ILLINOIS - Adults 0-69 per 100 sweeps in alfalfa in southern half of State. Larvae varied 0-80 per sweep. Heaviest in southern two tiers of counties where estimated 75 percent of first cutting lost. Badly damaged square foot in Hardin County revealed 144 cocoons. Larvae in that field averaged 80 per sweep. All stages found in most fields. Adults still mating and laying eggs. Examination of 25 cocoons showed 4 percent contained dead larvae, 48 percent living larvae or prepupae and 48 percent contained living pupae. (White, Petty, Moore). INDIANA - Following new county records reported: Putnam, Warren, Marion, Hamilton, Hancock, Union and Fayette. (Matthew, Huber). Untreated alfalfa severely damaged in Harrison County; first cutting total loss in many instances. Heavy (70-100 percent terminal injury) in areas of Washington, Vanderburgh, Knox and Switzerland Counties. (Huber, Wilson). All populations reaching economic proportions in fields in southern quarter of State. Northernmost measurable infestations in Greene County (33 percent terminal injury in one field) and Franklin County (25 percent terminal injury). (Huber, Matthew).

OHIO - Spread of economic populations evident in counties with moderate damage to crop last year. Clinton and Brown Counties in southwest now may require treatment. (Fladt). Stand in Brown County averaged 25 larvae per sweep. Adult numbers low (9 per 50 sweeps). All instars present in southern area. (Rose). In Washington County, larvae built up at very rapid rates past week. Where spraying at recommended rates, some excellent control obtained. High on untreated alfalfa; 300 larvae and 30 adults per 10 sweeps. Feeding caused estimated 50 percent leaf damage and whitish-gray cast. (Gehres). Larvae active in Fairfield County; many farmers spraying. (Taylor). Heavy rain past weekend washed some insecticide off treated alfalfa in Jackson County. (Mar Hoover). MASSACHUSETTS - Adults, first instars and eggs in 4 fields in Hampden and Hampshire Counties first week of May. In spite of low temperatures, activity appears normal. Some adult feeding damage noted. (Miller). First, second and fourth instars present in West Bridgewater area; fourth instars badly hurt by frost last week. (Wave). RHODE ISLAND - No foliage feeding evident. Examination of 50 stems in field in Kingston yielded one batch of eggs; 45 adults per 100 sweeps of same field; no larvae. (Mathewson). CONNECTICUT - Adults appearing on alfalfa in Storrs; 3 adults collected in 75

sweeps. (Savos). NEW YORK - Small larvae found at base of 3 to 5-inch alfalfa in Ulster County; adults found occasionally. (N. Y. Wkly. Rpt., May 3). NEW JERSEY - Larval injury more apparent in many Salem and Gloucester County alfalfa fields. Larvae ranged 100-1,000 (averaged 402) per 100 sweeps in 14 fields. Larvae ranged from newly hatched to third instars. In same fields, adults ranged 2-250 per 100 sweeps. Larval feeding varies, but generally 50-75 percent terminal buds show damage. In field near Cranbury, larvae averaged 10 and adults 40 per 100 sweeps. Feeding injury on about 25 percent of terminal buds. (Ins.-Dis. Newsltr.). DEL-AWARE - Larval populations increased greatly on alfalfa in Kent and Sussex Counties. Averaged 100 per 10 sweeps; feeding injury moderate to rather heavy in areas. Larvae much less numerous on alfalfa in New Castle County. Adults very common on alfalfa throughout State; daytime counts averaged 10 per 10 sweeps. (Burbutis). MARYLAND - Hatch reached peak in central sections. Terminal injury from larvae ranged 30-100 percent of plants in Frederick County. (U. Md., Ent. Dept.). VIRGINIA - All stages in alfalfa in Cumberland and Buckingham Counties. Larvae ranged 11-120 per sweep, averaged 40. Fields badly damaged with tops turning white. Alfalfa 10-12 inches high (Isakson). Larvae averaged 10 per sweep in several locations in Bedford County. Few adults noted. (Saucier). NORTH CAROLINA - Caused moderate damage to one-half of 13-acre field of ladino clover in Union County. Det. by D. A. Mount. (Simpson). MISSISSIPPI - Larval populations dropped to very low level in Holmes and Leflore Counties. Newly emerged adults increased; very high in both counties. (Dinkins).

CLOVER LEAF WEEVIL (Hypera punctata) - VIRGINIA - Averaged 5 larvae per 10 sweeps in clover in Cumberland County. (Isakson). Larvae severe in spots of red clover in Northumberland County. (Isakson, Coggsdale). OHIO - Larvae noted in Mercer, Columbiana, Madison, Greene, and Preble Counties. (DeBrosse et al.). Reports during last few weeks indicate that either populations have increased this year or concern over spread of H. postica brought pest to repeated inquiry. (Rose). UTAH - Occasionally found in alfalfa fields in northern section. (Knowlton).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - ILLINOIS - Adults varied 0-80 (average 27) per 100 sweeps; larvae infested 100 percent of stems in 3 red clover fields in the southeast district. (White). IDAHO - Overwintering adults occasionally in sweeping alfalfa fields in Cherry Lane and Lenora, Nez Perce County. (Kambitsch, O'Keefe, Portman).

CLOVER HEAD WEEVIL (Hypera meles) - ALABAMA - Larvae continue heavy in crimson clover fields where blooming delayed due to late grazing in Greene, Geneva and other central counties. Controls applied in some fields where harvested seed crop anticipated. (Johnson et al.).

SWEET CLOVER WEEVIL (Sitona cylindricollis) - UTAH - Conspicuously damaging sweet-clover at Penrose, Box Elder County, and moderately damaging at Camp Williams, Salt Lake County. (Knowlton). IDAHO - Few adults and some leaf feeding in several alfalfa fields near Cherry Lane Bridge and Lenore, Nez Perce County. (Kambitsch, Portman, O'Keefe).

CLOVER ROOT CURCULIO (Sitona hispidula) - IDAHO - Adults general in all sweep collections in alfalfa in Cherry Lane and Lenore areas, Nez Perce County. (Kambitsch, O'Keefe, Portman).

PEA LEAF WEEVIL (Sitona lineata) - CALIFORNIA - Adult light on vetch in Dublin, Alameda County. This is a new county record. (Cal. Coop. Rpt.).

WEEVILS (Sitona spp.) - MINNESOTA - In alfalfa in east central and central districts. First activity this season; counts very low. (Minn. Ins. Rpt.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - VIRGINIA - Averaged 20 per sweep in Cumberland County. Light on alfalfa in Buckingham and Roanoke Counties. Ranged 10-25 per sweep. (Isakson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSOURI - Adults ranged 0-3 per 10 sweeps in alfalfa in southern two-thirds of State. (Jackson, Houser, Thomas).

THREE-LINED POTATO BEETLE (Lema trilineata) - INDIANA - First adult of season on alfalfa May 4 in Hancock County. (Huber).

VETCH BRUCHID (Bruchus brachialis) - CALIFORNIA - Single adult, collected at San Ramon, Contra Costa County, April 13, 1966, by F. L. Blanc, is a new county record and the first find in central section of State. Also known in Del Norte, Siskiyou and Butte Counties. (Cal. Coop. Rpt.).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Increasing rapidly in alfalfa fields in all areas of Cochise County. Averaged 1,200 per 100 sweeps. Heavy in old stands in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Building up in alfalfa fields in Chaves and Valencia Counties; mostly light. (Mathews, Kloefer). TEXAS - Heavy in untreated vetch in Rockwall County. (Turney). ARKANSAS - Low in alfalfa in Miller County; apparently reduced by extremely heavy rains; 18-20 inches in April. (Boyer). OKLAHOMA - Ranged 175-800 per 10 sweeps in most fields of unsprayed alfalfa in Major, Alfalfa, Grant, Garfield, and Payne Counties. Field in Major County averaged 1,550 per 10 sweeps. Averaged 450 per 10 sweeps in sweetclover in Garfield County. Ranged 5-45 per 10 sweeps in alfalfa in Woods, Harper, and Woodward Counties. Parasites and predators very numerous in all areas. (Okla. Coop. Sur.). MISSOURI - Ranged 100-500 per 10 sweeps in alfalfa in the east central, southeastern and southwestern districts. Syrphid fly larvae ranged 200-300 per 10 sweeps in red clover in east central and southeastern districts. (Houser, Thomas). ILLINOIS - Low, 10-600 per 100 sweeps in 10-12 inch clover and alfalfa in the southeast district. (White). MICHIGAN - Adults and nymphs widely distributed but low. Expected rapid buildup on alfalfa. (Dowdy). WISCONSIN - Remains low; parasitism high, better than 30 percent in many fields. Mummies evident in southern counties. (Wis. Ins. Sur.). MINNESOTA - In alfalfa in east central and central districts. First activity of season; counts very low. (Minn. Ins. Rpt.). SOUTH DAKOTA - Low, 50 per 100 sweeps in early alfalfa field near James River at Olivet, Hutchinson County. At least 2 percent parasitism by Hymenoptera in sample. Alfalfa generally behind growth compared with 1965. (Jones). WYOMING - First appearance of season in alfalfa fields of Hot Springs County. (Pfadt, Marks). IDAHO - Surprisingly low numbers in Canyon County, alfalfa fields. Lacewings, lady beetles and parasitized aphids in numbers. (Homan). VIRGINIA - Averaged 20 per sweep in Cumberland County. Light on alfalfa in Buckingham and Roanoke Counties. Ranged 10-25 per sweep. (Isakson). MARYLAND - Ranged 5-25 per sweep on alfalfa in Ann Arundel and Talbot Counties. (U. Md., Ent. Dept.). DELAWARE - Increased considerably on alfalfa in most areas; ranged 20-300 per 100 sweeps; highest in Kent County. (Burbutis).

COWPEA APHID (Aphis craccivora) - OKLAHOMA - Continues in isolated fields. Averaged 100 per 10 sweeps in alfalfa field in Major County and 35 per 10 sweeps in sweetclover in Garfield County. (Okla. Coop. Sur.).

YELLOW CLOVER APHID (Therioaphis trifolii) - ILLINOIS - Ranged 0-1,240 (averaged 413) per 100 sweeps in 10 to 12-inch red clover in southeast district. (White).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults rather common on alfalfa throughout State. (Burbutis). VIRGINIA - Adults ranged 3-6 per 10 sweeps of alfalfa and clover in Cumberland County. (Isakson). ILLINOIS - Adults ranged 0-60 per 100 sweeps in clover and alfalfa in southeast district. (White). WISCONSIN - Adults of L. lineolaris and recently hatched nymphs, possibly Adelphocoris lineolatus, becoming common in more advanced alfalfa fields. (Wis. Ins. Sur.). ARKANSAS - L. lineolaris increased in legumes in southwest but noneconomic. Adults ranged 50-100 per 100 sweeps. No nymphs found. (Boyer).

LYGUS BUGS (Lygus spp.) - MINNESOTA - In alfalfa in east central and central districts. First activity of season; counts very low. (Minn. Ins. Rpt.). UTAH - Ranged 1-5 per 25 sweeps in Cache County alfalfa fields. (Knowlton). ARIZONA - Nymphs increased but remain below normal in alfalfa and safflower fields in Maricopa, Yuma, Pinal, Cochise and Graham Counties. (Ariz. Coop. Sur.).

RAPID PLANT BUG (Adelphocoris rapidus) - ILLINOIS - Nymphs varied 10-20 per 100 sweeps in 3 red clover fields in southeast district. (White).

SUPERB PLANT BUG (Adelphocoris superbus) - ARIZONA - Nymphs ranged 30-60 per 100 sweeps in alfalfa fields of Graham County. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - First of season taken in alfalfa in Garfield County; averaged 0.5 per 10 sweeps. (Okla. Coop. Sur.). NEW MEXICO - Common in alfalfa fields in most southern counties. Ranged 3-14 per 50 sweeps in Dona Ana County alfalfa. (Elson, Neilsen). Ranged 0-4 per 50 sweeps in Chaves County alfalfa. (Mathews). ARIZONA - Continues light in alfalfa in Cochise and Pima Counties. Some increases noted in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - WISCONSIN - Hatching in southern counties. (Wis. Ins. Sur.). IDAHO - Third instars in several alfalfa fields near Cherry Lane Bridge and Lenore, Nez Perce County. (Kambitsch, Portman, O'Keefe).

ARMY CUTWORM (Chorizagrotis auxiliaris) - WYOMING - Larvae ranged 0-0.75 per square foot in alfalfa fields of Hot Springs, Washakie, Big Horn and Park Counties. (Pfadt, Marks).

VARIEGATED CUTWORM (Peridroma saucia) - MISSOURI - Early instars ranged 0-2 per 20 sweeps in alfalfa in Montgomery and Gasconade Counties. (Houser).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae ranged 2-5 per 50 sweeps in southern Dona Ana County alfalfa fields. (N. M. Coop. Rpt.). UTAH - Small numbers near Salt Lake City, Salt Lake County. (Knowlton).

CLOVER HEAD CATERPILLAR (Grapholitha interstinctana) - ILLINOIS - Adults varied 0-20 per 100 sweeps in clover and alfalfa in southeast district. (White). MICHIGAN - Few adults and larvae in Monroe County alfalfa. (Dowdy).

GREEN CLOVERWORM (Plathypena scabra) - ILLINOIS - Larvae varied 0-30 per 100 sweeps in clover and alfalfa in southeast district. (White).

A SPIDER MITE (Petrobia apicalis) - TEXAS - Attacking 20-acre field of white clover near New Boston, Bowie County. Lower leaves of most plants killed; many top leaves lost considerable color. (Lynch).

BROWN WHEAT MITE (Petrobia latens) - COLORADO - Numerous in some alfalfa in Otero County. No damage evident. (Schweissing, Hantsbarger, Jenkins).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - One specimen found in field of seedling cotton in McLennan and Falls County area; 7 weevils collected from 12 flight screens installed April 11. First weevil collected April 18. In 1965, 14 weevils collected during this period. Only 1 weevil collected during entire 1964 season. Weevils removed from hibernation cages beginning May 2; survival percentage as follows: 0.2 in 2 cages containing 1,000 field collected weevils installed November 1, 1965; 0 in cage containing 137 weevils removed from ground trash and re-hibernated on December 15, 1965; and 9.1 in a cage containing 33 weevils removed from ground trash and re-hibernated in March 1966. Two weevils were removed from 3 cages containing green bolls collected in November and placed on soil surface and 2 from 3 cages containing green bolls placed on screens 6 inches above the soil surface in November. Two weevils removed from 6 cages containing bollie cotton collected from standing stalks in March. (Cowan et al.). ALABAMA - Surveys on 4 cotton demonstration farms in Dallas County where overwintering weevil counts made in March show farm A - 0, farm B - 0, farm C - 1 per 1,000 feet or 13 per acre, and farm D - 11 per 1,000 feet or 143 per acre. Cotton in 2-5 leaf stage; oldest cotton on farm D. (McQueen).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Heavy in scattered areas throughout Pinal and Maricopa Counties. Some replantings necessary; controls used on many fields. Heaviest in West Chandler and Buckeye areas, Maricopa County. (Ariz. Coop. Sur.).

BET ARMYWORM (Spodoptera exigua) - ARIZONA - Heavy damage in 10 percent of cotton fields of Pinal and Maricopa Counties. Light to moderate in Yuma County. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Inspections of croton and horse-mint plants during March, April and first week of May show gradual buildup on these hosts. Inspections in 5 fields of seedling croton plants showed 5 per 100 plants; averaged 5.7 per 100 horse-mint plants and 2 per sweep. Average in 4 fields of evening-primrose 3.4 per 100 plants. Average of 2.9 per sweep found in field of wild verben. (Cowan et al.).

FLEAHOPPERS - TEXAS - Increased in Rio Grande Valley especially in areas of Hidalgo County. (Parker, Hanna).

COTTON APHID (Aphis gossypii) - ALABAMA - Light to extremely heavy on 2 farms where no controls applied. None on 2 farms where systemic insecticides applied. (McQueen).

APHIDS - NEW MEXICO - Aphids, probably Aphis craccivora, appearing on seedling cotton in most cotton fields in southern Dona Ana County. Small number parasitized. (Elson, Nielsen). ARIZONA - Aphids present on seedling cotton in Graham and Pima Counties. Natural enemies giving controls in most fields. (Cott. Ltr.). TEXAS - Increasing in some fields in Rio Grande Valley. (Parker, Hanna).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - ARIZONA - Moderate to heavy damage in Pinal and Maricopa Counties. Serious damage in Queen Creek, Picacho, West Chandler and Casa Grande areas. Lighter in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Thrips, mostly F. occidentalis, relatively light on emerging cotton foliage in southern Dona Ana County. (Elson, Nielsen).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - VIRGINIA - Very light to medium damage to tobacco seedlings around margins of several plant beds in Pittsylvania County. (Dominick, Apr. 28). NORTH CAROLINA - Damaging tobacco in beds and fields throughout Columbus County. (Read).

FLEA BEETLES - GEORGIA - Heavy on tobacco throughout growing area. (Jordan). SOUTH CAROLINA - Damaging tobacco in Clarendon County. (Benton).

TOBACCO WIREWORM (Conoderus vespertinus) - NORTH CAROLINA - Damaged few fields of tobacco in Columbus County April 29. First reports of damage this season. (Read).

SUGAR BEETS

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - COLORADO - Pupae found in 1965 sugar beet fields; adults expected soon in new plantings. (Horn, Urano).

MISCELLANEOUS FIELD CROPS

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Numerous deposits of eggs in Willamette Valley field crops indicate possible heavy infestation later. (Morrison).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - OREGON - Moderate on hops in Josephine County. (Westgaard).

GARDEN SYMPHYLAN (Scutigerella immaculata) - OREGON - Appearing in some areas of Willamette Valley for first time this year. (Morrison).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MARYLAND - First adults of season noted May 5 on small potato plants in Anne Arundel County. (U. Md., Ent. Dept.).

FLEA BEETLES (Epitrix sp.) - MARYLAND - Adults moderate to heavy on newly set tomatoes and young potato plants in Anne Arundel County. (U. Md., Ent. Dept.).

COLE CROPS

DIAMONDBACK MOTH (Plutella maculipennis) - UTAH - Numerous on wild mustards in Thatcher-Penrose area, Box Elder County, Elberta and north in Utah County, and Camp Williams, Salt Lake County. (Knowlton).

CABBAGE SEEDPOD WEEVIL (Ceutorhynchus assimilis) - CALIFORNIA - Adults medium on radish plants in Redding, Shasta County. (Cal. Coop. Rpt.).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - ALABAMA - Heavy and damaging on cucumbers in Perry and De Kalb Counties. (Bates, Smith).

TOBACCO WIREWORM (Conoderus vespertinus) - NORTH CAROLINA - Damaged 20 percent of 1.25 acres of cucumbers in Nash County. Plants 2-3 inches high. Feeding on sides of stems allowed disease organisms to enter. This is first report in State of this species attacking cucumbers. (Hughes, Mount).

DECIDUOUS FRUITS AND NUTS

PEAR SAWFLY (Hoplocampa brevis) - RHODE ISLAND - Adult female taken from sticky board trap in pear orchard May 3 in Providence, Providence County. Det. by D. R. Smith. This is a new State record. (Mathewson).

CODLING MOTH (Carpocapsa pomonella) - INDIANA - About 90 percent of overwintering larvae pupated by May 3 in Knox County area. (Dolphin).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - WISCONSIN - Larvae feeding on opening buds of apples in Dane County. (Wis. Ins. Sur.). MICHIGAN - Early instars infesting 25 percent of apple buds checked in Monroe County home orchard May 2. (Dowdy).

TENT CATERPILLARS (Malacosoma spp.) - OREGON - Larger number of tents of M. pluviale than last year on apples, pears, sweetgum, hawthorn, rose and alder throughout the Willamette Valley. (Larson, Bluhm). MICHIGAN - Six to eight larval colonies of M. americanum per 7-foot wild cherry tree noted May 4; all first instars. (Newman). NEW YORK - Larvae observed in young orchard in Essex County April 27. (N. Y. Wkly. Rpt.).

APHIDS - ALABAMA - Anuraphis rosea and Aphis pomi continue heavy on many isolated apple trees in Lee and other central Counties. (Bagby et al.). WISCONSIN - Rhopalosiphum fitchii fundatrices producing offspring in more advanced area of western Dane County. Not quite reached maturity in other areas. (Wis. Ins. Sur.). MICHIGAN - Stem mothers of R. fitchii common on apple foliage in Ingham and Monroe Counties. (Dowdy).

PLUM CURCULIO (Conotrachelus nenuphar) - NORTH CAROLINA - Eggs and larvae light on peaches near Ellerbe in Sandhills May 3. (Smith). ALABAMA - Egg laying underway on plums and peaches in home orchards and on wild fruit in Dallas, Greene, Lee and other counties. (McQueen).

SHOT-HOLE BORER (Scolytus rugulosus) - NORTH CAROLINA - Severe on peaches in 2 blocks of trees near Wadesboro, Anson County. Controls recommended. (Smith).

EUROPEAN RED MITE (Panonychus ulmi) - NEW JERSEY - Larvae quite plentiful on trees at Bridgeton and Masonville. (Ins.-Dis. Newsltr.). PENNSYLVANIA - Five percent hatched on apples in Adams County. (Asquith). OHIO - Overwintering eggs hatching over most of State. (Still et al.). INDIANA - Many larvae and proto-nymphs present on apple foliage in Knox County area; majority of eggs unhatched. (Dolphin).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - MICHIGAN - First injury noted May 2 in Monroe County on pear foliage approximately 1.5 inches long. (Dowdy).

PECAN NUT CASEBEARER (Acrobasis caryae) - ALABAMA - Larvae of overwintered generation entering stems of new growth shoots in central counties. (Johnson, Bagby et al.). LOUISIANA - First moth caught in light trap at Shreveport, Caddo Parish, May 8. (Calcote). TEXAS - Larvae continue in Wilbarger County; no pupation. (Boring). Larvae in Brazos County; large numbers of pupae found in shoots and on cardboard bands. (Parker).

PECAN SHUCKWORM (Laspeyresia caryana) - TEXAS - Marked increase during last few days. (Parker).

A PECAN PHYLLOXERA (Phylloxera sp.) - TEXAS - Heavy near Rockwall, Rockwall County. (Corbin).

BLACK-MARGINED APHID (Monellia costalis) - OKLAHOMA - Heavy on pecan trees in Choctaw County. (Okla. Coop. Sur.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - NORTH CAROLINA - Eggs and crawlers on peaches in Sandhills and Wake County areas May 4. Ranged light to heavy. (Smith).

A XYELID SAWFLY (Megaxyela sp.) - SOUTH CAROLINA - Damaging pecan foliage in Allendale County. Det. by R. C. Fox. (Nettles, May 3).

CITRUS

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Continues heavy in citrus areas of Maricopa and Yuma Counties. Controls necessary. (Ariz. Coop. Sur.).

COTTONY CUSHION SCALE (Icerya purchasi) - ARIZONA - Continues spread in citrus groves in Yuma County. (Ariz. Coop. Sur.).

OTHER TROPICAL AND SUBTROPICAL FRUITS

AN ERMINE MOTH (Argyresthia eugeniella) - FLORIDA - Severe on guava at Marco Island, Collier County. (Williams, Apr. 28).

SMALL FRUITS

APHIDS - MARYLAND - Chaetosiphon sp. abundant on new growth of strawberries at Glendale, Prince Georges County. (U. Md., Ent. Dept.). CALIFORNIA - Amphorophora sp. probably rubi medium on Olallie blackberry bushes in Watsonville, Santa Cruz County. Chaetosiphon fragaefolii heavy on strawberry nursery stock in Arroyo Grande, San Luis Obispo County. (Cal. Coop. Rpt.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEVADA - First instars present on grapes in Las Vegas, Clark County. (Zoller). ARIZONA - Adults moderate to heavy on backyard grape plantings in Phoenix area, Maricopa County. Egg colonies numerous. (Ariz. Coop. Sur.).

STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) - OREGON - Adults moderate in Washington County strawberry fields last week of April. (Goeden).

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma) - MICHIGAN - Egg masses common in some blueberry plantings in southwestern area. (Nelson, Newman).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - OREGON - Larvae infesting 5 percent of strawberry field in Washington County. (Torvend, Apr. 28).

RASPBERRY CANE MAGGOT (Pegomya rubivora) - OREGON - Injury to new canes noted in raspberry fields of Linn County. (Rosensteil).

GENERAL VEGETABLES

ASPARAGUS BEETLE (Crioceris asparagi) - DELAWARE - Adult feeding injury and egg laying noted in several areas. (Burbutis). CONNECTICUT - Feeding on emerging asparagus spears. (Savos).

ONION MAGGOT (Hylemya antiqua) - TEXAS - Heavy in several onion fields in Hale County. (Rummel).

ONION THRIPS (Thrips tabaci) - MARYLAND - Infesting onions in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - NEW MEXICO - Ranged 1-20 adults and nymphs per plant in Dona Ana County onion fields. (Elson).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues heavy in lettuce throughout Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Moderate on vegetables and melons in Deer Valley and Goodyear areas, Maricopa County. (Ariz. Coop. Sur.).

ORNAMENTALS

ARMORED SCALES - FLORIDA - Adults of Diaspis boisduvalii and Gymnaspis aechmeae moderate to severe on leaves of 10 bromeliads (Billbergia pyramidalis) and adults of Ischnaspis longirostris moderate to severe on leaves of 5 bromeliads (Aechmea fulgens) in nursery at Miami, Dade County. (Sloan, Apr. 12). All stages of Fiorinia theae severely damaging leaves on 100 of 105 Burford hollies in nursery at Fernandina Beach, Nassau County. (King, Apr. 27). Aonidiella taxus moderate to severe on leaves of 76 of 760 Podocarpus macrophylla at nursery in Hialeah, Dade County. (Sloan, Apr. 25). Diaspis minima found on juniper in nursery at Fort Pierce, St. Lucie County (Campbell, Apr. 19). This is a new county record. (Fla. Coop. Sur.). MARYLAND - Aspidiotus perniciosus heavy on Japanese cherry and pyracantha at Annapolis, Anne Arundel County. (U. Md., Ent. Dept.).

FLORIDA WAX SCALE (Ceroplastes floridensis) - FLORIDA - All stages heavy on Ixora coccinea in nursery at Winter Haven, Polk County. (Eisenschenk, Apr. 26).

A PIT SCALE (Asterolecanium pustulans) - FLORIDA - Adults severe on stems of 36 of 45 Nerium oleander in nursery at Hialeah, Dade County. (Sloan, Apr. 25).

APHIDS - NEVADA - Cinara spp. medium to heavy on several spruce trees in Reno, Washoe County. (Cooney). OKLAHOMA - C. tujafilina continues heavy on evergreens in Stillwater, Payne County. Macrosiphum euphorbiae heavy on iris in Perry, Noble County, for past 3 weeks; probably M. euphorbiae, heavy on roses in Noble County. Hymenopterous parasites numerous. (Okla. Coop. Sur.). ARIZONA - Macrosiphoniella sanborni damaging chrysanthemum plants in Casa Grande and Coolidge areas, Pinal County, and Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

AZALEA WHITEFLY (Pealius azaleae) - MARYLAND - All stages heavy on several large azaleas in Takoma Park, Montgomery County. (U. Md., Ent. Dept.).

SPRUCE NEEDLE MINER (Taniva albolineana) - NEVADA - Five infested spruce trees from 2 out-of-state nurseries found in Winnemucca, Humboldt County. This is a new county record. (Bechtel, Martinelli). Survey negative in Hawthorne, Mineral County. (Cooney).

A LEAF BEETLE (Chrysomela interrupta) - OKLAHOMA - Adults and larvae damaging ornamental willows in Noble County. (Okla. Coop. Sur.).

FOREST AND SHADE TREES

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WISCONSIN - Examination of samples of pine collected in Sheboygan, Manitowoc and Door Counties revealed some winter survival. Populations evidently still low. (Wis. Ins. Sur.). MICHIGAN - Larval mortality 30 percent in 25 infested-shoot samples from Livingston County Scotch pine plantation May 4; most in second instar. (Newman). OHIO - About 60-80 percent of tips infested in stand of red pine near Remington, Hamilton County; 20 trees 15 to 25 years old involved. (Rose).

SPRUCE NEEDLE MINER (Taniva albolineana) - NEBRASKA - Overwintering larvae pupating in southeast. (Roselle, Rhine).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - OHIO - Hatch began in Delaware County about April 25 on Scotch and red pines. (Hay). Larvae about 1 cm. in Hamilton County; some damage apparent. Larvae feeding on 70 percent of needles in block of small pine trees. Damage light. (Rose). Larvae active in Summit County; very small; damage not noticeable. (Rings). MICHIGAN - No hatching apparent May 4 in infested Scotch pine plantation in Livingston County. (Newman).

A CONIFER SAWFLY (Neodiprion pratti pratti) - MARYLAND - First and second instars on Virginia pines at Laurel, Prince Georges County. (U. Md., Ent. Dept.).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - OREGON - Large numbers on needles of spruce and Douglas-fir in Marion County. (Bluhm). NEW YORK - Heavy on spruce in Orange County April 25. (N.Y. Wkly. Rpt.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - RHODE ISLAND - First hatch in Bristol and Cumberland April 12. More numerous in Providence area. (Veilleux, King, Mathewson). MARYLAND - Widespread and heavy on wild cherry in eastern and southern section. (U. Md., Ent. Dept.). VIRGINIA - Tents numerous statewide, 5-20 webs per tree in some central areas. (Isakson). OHIO - Active in Warren, Hamilton, Clermont and Brown Counties. Apparently widespread over southern third of State. (Rose). ILLINOIS - Very abundant in several southern areas. (White). OKLAHOMA - Pupation completed in northwest. (Okla. Coop. Sur.).

GREAT BASIN TENT CATERPILLAR (Malacosoma fragile) - UTAH - Damage to poplars in Washington County extensive and severe along Virgin River. (Dorst, Knowlton). Severe at Moab, Grand County. (Knowlton).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Medium on oaks in Greene Valley, Solano County. Due to dry season and high daytime temperatures early in year, pest may cause loss of native oak trees. (Cal. Coop. Rpt.).

A CASEBEARER MOTH (Coleophora sp.) - CALIFORNIA - Larvae heavy and severely damaging native madrone trees locally along highway in Garden Valley area near Georgetown, El Dorado County. (Cal. Coop. Rpt.).

A GRACILLARIID MOTH - CALIFORNIA - Larvae probably Gracillaria sp. heavy on oak trees on campus of Stanford University, Santa Clara County. (Cal. Coop. Rpt.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - NEVADA - Larvae heavy and damaging elms in Las Vegas, Clark County. (Zoller).

ELM LEAF BEETLE (Pyrrhalta luteola) - OKLAHOMA - Egg laying underway in Harper and Woodward Counties. Adults moderate on elms in Marshall and Cleveland Counties. (Okla. Coop. Sur.). NEVADA - Laying eggs in Hawthorne, Mineral County, and Reno-Sparks area, Washoe County. (Cooney). Adults active and feeding on elm leaves in Winnemucca, Humboldt County, and Lovelock, Pershing County. No eggs observed. (Bechtel, Martinelli). IDAHO - Larval feeding evident in Parma area, Canyon County; first adult feeding April 19 (Scott).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MISSOURI - Emerging in Columbia, Boone County, April 28. (Williams).

MAN AND ANIMALS

MOSQUITOES - FLORIDA - Mansonia perturbans light in some sections of Gainesville, Alachua County, moderate to heavy in other sections. (Mead). NORTH CAROLINA - Aedes sollicitans no problem along coast at present; however, large numbers of first instars present in Onslow County April 29. Adults expected soon. (Ashton). OHIO - Aedes spp. pupating May 1-5 in Seneca County. First adults expected May 7-12. (Hintz). MICHIGAN - Pupae and late instar larvae of Aedes sp. numerous May 1 in Shiawassee County wooded area; adults expected during coming week. (Dowdy). WISCONSIN - Aedes sp. larvae nearly full grown (no pupae May 4); numerous in pools along Wisconsin River. Estimated 30 per square foot. Sporadic with many pools free of larvae. (Wis. Ins. Sur.). MINNESOTA - During week ending April 30, total of 1,342 larval collections made by Metropolitan Mosquito Control District. Of these 539 samples contained Aedes excrucians, 266 A. fitchii, 248 A. stimulans, 139 A. cinereus, 110 A. riparius, 61 A. abserratus, 55 A. implicatus, 40 A. flavescens, 43 A. canadensis, 20 A. punctator, 7 A. spencerii, 6 A. vexans, 5 A. sticticus, 2 A. dorsalis and one each of A. intrudens and A. trichurus. Total of 406 samples contained second instar Aedes too small to identify. Culiseta minnesotae found in 6, Culiseta morsitans in 2 and Culiseta spp. in 3 collections. Pupation rapid during week of May 6. First emergence of male Aedes spp. May 4. Majority of spring Aedes will emerge by May 13 if present warm weather continues. (Minn. Ins. Rpt.). COLORADO - Adults appearing in many areas of Crowley County. (Wilshusen). UTAH - Moderately numerous in Thatcher-Penrose area, Box Elder County, and north of Elberta, Utah County. (Knowlton). OKLAHOMA - Fourth instars of Aedes nigromaculis taken in ditch in Hunter area, Garfield County. (Okla. Coop. Sur.). MISSOURI - Culiseta inornata heavy in affluent areas of sewage lagoons in Boone County. (Smith). LOUISIANA - Jefferson Parish Department of Mosquito Control larval collection first week of May yielded Aedes vexans, Culex pipiens quinquefasciatus and C. salinarius. Light trap collections increased with flood-water species A. sollicitans, A. vexans and Psorophora confinnis taken. (Stokes).

FACE FLY (Musca autumnalis) - MARYLAND - Adults averaged one per head on dairy herds on 2 farms and 7 per head on beef animals in Montgomery County; adults averaged 2 per head on 2 dairy herds and 13 per head on one dairy herd in Howard County. (Fales, May 6).

HOUSE FLY (Musca domestica) - OKLAHOMA - Increasing rapidly in Payne County; up to 100 per Scudder grid in favorable areas. (Okla. Coop. Sur.). ALABAMA - Large numbers of adults at farm home near cattle barns in Dallas County. Considerable

infestations at public building dairy barn in Lee County. (McQueen).

HORN FLIES (Haematobia irritans) - MISSOURI - Adults ranged up to 300 per animal on cattle which had shed winter coats, in Bollinger County. (Houser). OKLAHOMA - Averaged 1,500 per head on steers and 2,500 per head on bulls in Payne County. Heavy in Noble and Stephens Counties; moderate in Choctaw County. (Okla. Coop. Sur.). SOUTH CAROLINA - Sudden buildup April 24-30 at Pendleton, Anderson County. (Nettles). ALABAMA - Quite heavy on beef cattle in Greene and other western counties. Controls necessary in many instances. (McQueen).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - First of season on cattle in Payne County; averaged 2 per head. (Okla. Coop. Sur.).

COMMON CATTLE GRUB (Hypoderma lineatum) - MISSOURI - Ovipositing in Crawford County. (Houser).

TICKS - OKLAHOMA - Amblyomma americanum averaged 400 per head on cows and 300 per head on calves in Atoka County. Heavy on cattle in Mayes, Sequoyah and Choctaw Counties and light in Stephens County. Dermacentor variabilis ranged up to 14 per head on dogs in Payne County; heavy on dogs in Sequoyah County and averaged 1 per head on cows in Atoka County. (Okla. Coop. Sur.). MISSOURI - First specimen of Dermacentor variabilis this season collected April 30 in Columbia, Boone County. (Wingo).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - ARKANSAS - Specimens from Hempstead County determined this species. This is a new county record. (Ark. Ins. Sur.).

HOUSEHOLDS AND STRUCTURES

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - NORTH CAROLINA - Serious problem in Guilford County school system; 42 schools in system; about half reported spotted infestations. (Kelly).

STORED PRODUCTS

Stored-Product Insects in Nevada - Sitophilus granarius and Oryzaephilus surinamensis infested barley in Lovelock, Pershing County. Rhyzopertha dominica and Tribolium castaneum medium to heavy in stored wheat in same area. (Bechtel, Ferraro, Martinelli).

Stored-Product Insects in California - Adults of Carpophilus lugubris, C. marginellus, C. hemipterus, C. freemani heavy on prunes in storage in Yuba City, Sutter County. C. humeralis and Cadra cautella heavy in dry garlic in processing plant in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

ALMOND MOTH (Cadra cautella) - TEXAS - Heavy in stored cotton seed near La Grange, Fayette County. (Bippert).

BENEFICIAL INSECTS

LADY BEETLES - ALABAMA - Hippodamia convergens adults and larvae extremely heavy and feeding on aphids in clovers and vetch in Covington, Dallas, Greene and other counties. (Stephenson et al.). MISSISSIPPI - Very high numbers of adults in delta wheat fields. Highest concentration in Leflore County wheat. Majority H. convergens. (Dinkins). ARKANSAS - Increasing in all areas; helping control aphids. Buildup should be of value as predators in young cotton. (Ark. Ins. Sur.). ILLINOIS - Adults mostly Coleomegilla maculata fuscilabris varied 0-100 per 100 sweeps in clover and alfalfa in southeast district. No larvae observed. (White).

GOLDEN-EYE LACEWING (Chrysopa oculata) - ILLINOIS - Adults varied 0-10 per 100

sweeps in clover and alfalfa; few observed in wheat in southeast district. (White).

DAMSEL BUGS (Nabis spp.) - ILLINOIS - Adults ranged 0-60 per 100 sweeps in clover and alfalfa in southeast district. Occasional nymph observed. (White).

A FLOWER BUG (Orius insidiosus) - ARKANSAS - Increasing in legumes. (Ark. Ins. Sur.).

FLOWER FLIES - ILLINOIS - Larvae varied 0-20 per 100 sweeps in clover and alfalfa in southeast district. (White). ARKANSAS - Continue active in legumes (Ark. Ins. Sur.).

A BRACONID (Apanteles crambi) - DELAWARE - Adult collected from pasture at Milford, Sussex County; July 22, 1964 by P. P. Burbutis and L. P. Kelsey. This is a new State record. Parasite of Crambus spp. det. by P. M. Marsh. (Burbutis).

AN ICHNEUMON WASP (Bathyplectes curculionis) - COLORADO - Emerging in Larimer County. (Simpson).

Beneficial Insects in Utah - Orius tristicolor, Nabis alternatus, Geocoris spp., Collops sp. adults and larvae of 3 species of lady beetles and adults of Chrysopa spp. becoming common in alfalfa in northern section of State. (Knowlton).

Beneficial Insects in New Mexico - Counts per 25 sweeps in alfalfa fields as follows: Belen, lady beetles 5-8 adults and Tucumcari, 1-3; nabids - Belen, 5-10 and Roswell 2-4; and minute pirate bugs 4-7 in Belen area. (N. M. Coop. Rpt.).

Beneficial Insects in Florida - Parasites and predators swept from rye and oats at Gainesville, Alachua County include adults and larvae of Orius insidiosus, Hippodamia convergens, Chilocorus stigma and Cycloneda spp., Chrysopa spp. and crab spiders. (Mead).

FEDERAL-STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - INDIANA - In the La Porte-St. Joseph County area low temperatures and 10-15 m.p.h. winds curtailed adult activity. Little movement of adults from wheat to oats; oviposition very light to May 3. Egg counts per linear foot of row averaged 1.8 in wheat and 0.9 in oats. (Shade). OHIO - Adults appearing in Wood County. (Jones). MICHIGAN - Hatching delayed by general cool weather. No larvae observed in southwestern area fields by May 5. Frosty nights and desiccating winds caused high mortality of early eggs. Adults still most common stage in wheat. General movement to oats anticipated with favorable weather. Oats approaching susceptible state. Egg laying continues at rather low rate. Field-collected females show capabilities of high egg deposition. (Dowdy).

GRASSHOPPERS - MINNESOTA - Melanoplus femurrubrum eggs showed more coagulation in east central and central districts. Few M. sanguipes eggs found in Chisago County; most well-coagulated; few showed early eye-spot stage. M. differentialis eggs in clear stage. Egg predators very rare in areas checked. (Minn. Ins. Rpt.). WYOMING - Cordillacris occipitalis hatched April 28 at Lingle, Goshen County. (Thornley).

UTAH - Early hatching becoming common in many localities (Thornley, Knowlton). Nymphs, 75 percent first instar, numerous in some range areas west of Utah Lake in Utah County and in Penrose area, Box Elder County. Pardalophora haldemanii adults moderately numerous in Elberta area and north in Utah County. (Knowlton). CALIFORNIA - Oedaleonotus enigma fourth instars and adults heavy in range grasses in Coalinga, Fresno County. (Cal. Coop. Rpt.). NEW MEXICO - Grasshoppers averaged 5-12 first and second instars per 25 sweeps in alfalfa fields in Belen area, Valencia County. (Heninger). OKLAHOMA - Nymphal surveys show several species hatching in crop margins and rangeland in Carter, Garvin, Johnson, Murray, Harmon and Beckham Counties. First instars ranged 1-12 per square yard. Predominant species hatching: M. bivittatus, Ageneotettix deorum, Aulocara elliotti,

and Amphitornus coloradus. (Okla. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Larvae severe on wild cotton at Sanibel Island, Lee County. (Williams, Apr. 28). Pupae and adults also found. (Fla. Coop. Sur.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Destroying stand of cotton in Houston County. (West). Larvae destroying stand of corn; replanting necessary in Black community, Geneva County. (Stephenson, Reynolds, Hartzog). Destroying stand of butterbeans in Covington County. (Stephenson).

HAWAII INSECT REPORT

Special Insects of Regional Significance - A STINK BUG (Coptosoma xanthogramma) - All stages medium to heavy in two 6-foot rows of pole snap beans in garden at Makiki Heights, Honolulu, Oahu, elevation 500 feet. Many eggs and recently hatched nymphs throughout plants. Approximately 250-300 adults in each row. Two rows of lima beans and row of bush beans in immediate vicinity not infested. (Higa).

Beans and Tomatoes - A LEAFMINER FLY (Liriomyza sp.)- Larvae and adults heavy in 0.5 acre of tomatoes in Kahuku, Oahu. Medium to heavy on yard-long beans and light on snap beans in Waimanalo, Oahu. (Kitagawa, Nakao).

Fruits - ORIENTAL FRUIT FLY (Dacus dorsalis) light in guava orchards and on wild guavas in Waimanalo, Oahu. Oviposition and hatch occurring in ripe fruits. (Haw. Ins. Rpt.).

General Vegetables - IMPORTED CABBAGEWORM (Pieris rapae) moderately damaging broccoli. Medium to heavy infestations in all onion growing areas. (Haw. Ins. Rpt.).

Ornamentals - A THRIPS (Thrips hawaiiensis) - Heavy infestation continuing on gardenia blossoms in wet regions on Oahu. Also heavy on gardenias in Hilo, Hawaii Island. (Chong, Yoshioka, Shiroma).

Forest and Shade Trees - CITRUS MEALYBUG (Planococcus citri) - Varying numbers of all stages on 90 percent of monkey pod trees along Kapiolani Boulevard, Honolulu, Oahu. Det. by J. W. Beardsley. Large numbers of Cryptolaemus montrouzieri (a lady beetle) were feeding on mealybugs. (Higa). AN ERIOPHYID MITE (Aceria sp.) - Nymphs and adults medium on a native tree Diospyros sp., at the Hawaii Volcanoes National Park, Hawaii Island, elevation 2,000 feet. Det. by F. Haramoto. (Haw. Ins. Rpt.). A MIRID BUG (Orthotylus iolani)- Adults heavy in 5 acres of scattered Erythrina sandwicensis (wiliwili) at 200 feet elevation, along access road to Mount Kaala, Oahu, April 14. Feeding by 50 or more per leaf caused 80 to 100 percent foliar damage to 12 trees. (Haw. Ins. Rpt.).

Beneficial Insects - A CERAMBYCID BEETLE (Plagiohammus spinipennis) - Total of 20 adults noted in one hour on weed, Lantana camara var. aculeata near Pahala, Kau District, Hawaii Island. (Harley). A GALL MIDGE (Zeuxidiplosis giardi) - Appreciable spread observed on Mount Hualalai, Hawaii Island, elevation 8,250 feet. This insect purposely introduced in February, 1965 from New Zealand to aid in control of Klamath weed. (Yoshioka).

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

During the period May 1-7, a total of 23 cases was reported in the Southwestern Eradication Area by States and counties as follows: TEXAS - Culberson 1, Frio 1; ARIZONA - Maricopa 4, Cochise 8, Santa Cruz 3, Yuma 3, Gila 1; NEW MEXICO - Grant 1; CALIFORNIA - Imperial 1. The Republic of Mexico reported 133 cases: Territorio sur de Baja California 4, Sonora 103, Chihuahua 2, Nuevo Leon 6, Tamaulipas 18. A total of 214 cases was reported in Mexico south of the Barrier Zone. Sterile screw-worm flies released: Texas 25,415,850, Arizona 24,804,000, New Mexico 5,040,000, California 1,000,000, Mexico 42,853,600.

Table 1. Comparison of screw-worm samples identified during corresponding weeks in the United States.

Year	Positive Cases	Negative Cases
1964	6	325
1965	22	211
1966	23	140

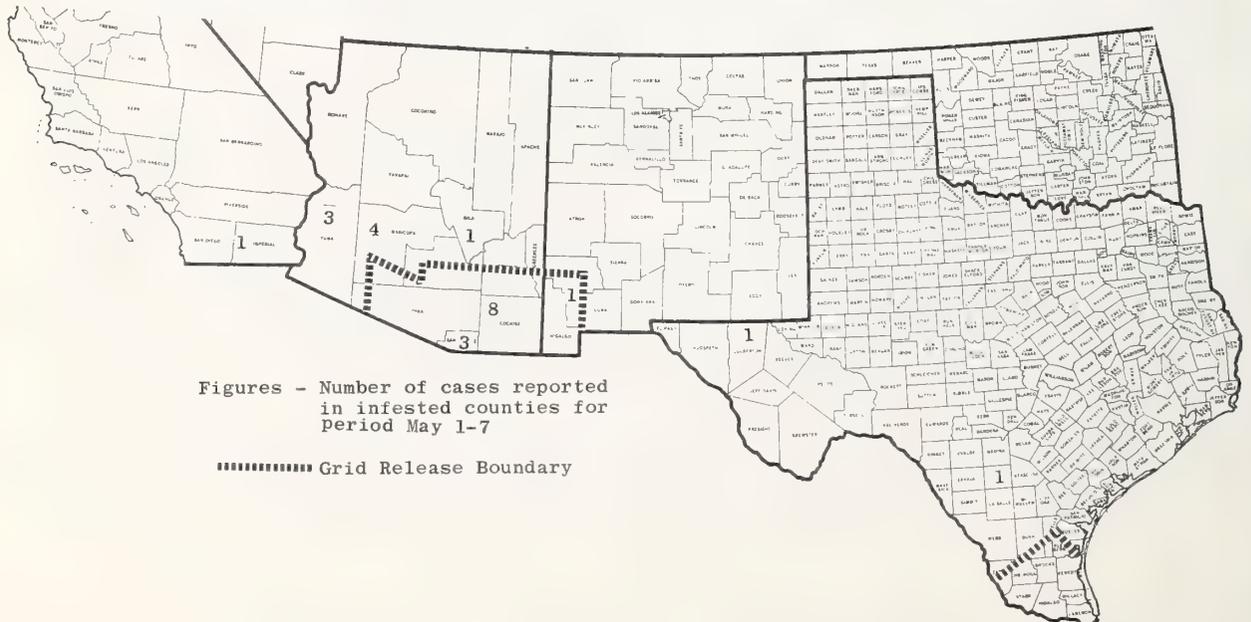
Table 2. Comparison of United States screw-worm cases by State

State	1964	1965	1966
Texas	5	9	2
Ariz.	1	10	19
N. M.	0	3	1
Calif.	0	0	1

Table 3. Comparison of screw-worm cases inside and outside the United States portion of the Barrier Zone.*

Year	Inside Barrier Zone	Outside Barrier Zone
1965	10	2
1966	22	1

* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm populations in the United States. Effective May 23, 1965, portions of Arizona and California were added to the Barrier Zone. (Anim. Health Div.).



Figures - Number of cases reported in infested counties for Period May 1-7

----- Grid Release Boundary

INSECT DETECTION

PEAR SAWFLY (Hoplocampa brevis) - RHODE ISLAND - Reported for the first time in State (p.412).

A BRACONID (Apanteles crambi) - DELAWARE - Reported for the first time in State (p. 418).

ALFALFA WEEVIL (Hypera postica) - INDIANA - Found for the first time in Putnam, Warren, Marion, Hamilton, Hancock, Union and Fayette Counties. MISSOURI - Found for the first time in St. Francois, Jefferson, Washington, Crawford, Gasconade and Franklin Counties. (p. 407).

PEA LEAF WEEVIL (Sitona lineata) - CALIFORNIA - Found for the first time in Alameda County. (p. 408).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - Found for first time in Rolette County. (p. 406).

VETCH BRUCHID (Bruchus brachialis) - CALIFORNIA - Found for the first time in Contra Costa County. (p. 409).

AN ARMORED SCALE (Diaspis minima) - FLORIDA - Found for the first time in St. Lucie County. (p. 414).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - ARKANSAS - Found for the first time in Hempstead County. (p. 417).

SOME FIRST APPEARANCES OF SEASON

Southwestern corn borer moths in Mississippi. Greenbug in Minnesota. Spotted alfalfa aphid in Virginia. Colorado potato beetle adults in Maryland. Smaller European elm bark beetle emergence in Missouri.

Weather continued from page 404.

PRECIPITATION: Except for some northwestern coastal areas, the western half of the Nation had little or no rain during the week. Precipitation was light in much of the Great Lakes area and in the Northeast. Heavy thundershowers drenched the Gulf Coast of Texas for 6 days with weekly rain totals up to 9 inches in the Lower Rio Grande Valley. The Carolina Coast had substantial showers early in the week; Florida received theirs later. Cold air moving southward set off light showers from Nebraska to southern New England on Sunday as snow flurries were reported from the upper Great Lakes to northern New England. Scattered snows also occurred in northern Appalachian Highlands.

STORMS: Tornadoes struck northern Florida early in the week with no reported injuries or damages. On Sunday a tornado caused damage 20 miles southwest of Chicago. (Summary supplied by Environmental Data Service, ESSA).

LOOK FOR THESE APPLE PESTS

Winter Moth

Larvae feed on buds, fruit and leaves of trees in orchards and on other hardwoods during the spring. They can cause complete defoliation. The full-grown larva is about one inch long, green with a dark dorsal line and 3 yellow stripes along each side; head is dark brown. Adults are active in the winter; the male is attracted to lights. Operophtera brumata has been known in Nova Scotia, Canada, since 1949, where it has caused serious damage in outbreak years. It occurs in most of Europe, parts of North Africa, and Japan. This defoliator has been regarded as an important pest in Europe for many years.



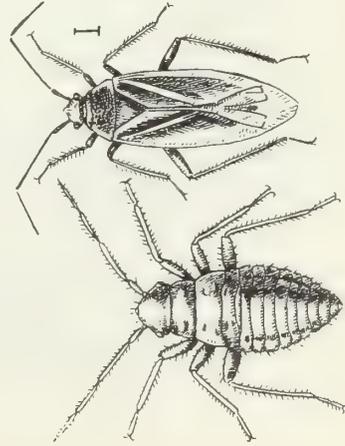
Apple Sucker

Large quantities of honeydew on foliage in apple orchards may indicate presence of this psyllid. The pale yellowish green nymphs feed in opening buds, fruit stems (peduncles) and leaves. Adults are active throughout summer. The general appearance is pale green. Psylla mali is small, about 4 mm. from head to tip of folded wings. P. mali is a serious pest in Europe and it has caused trouble in some years in Nova Scotia and New Brunswick, Canada. The pest also occurs in Australia and Japan. As much as 70 percent damage to an apple crop has been recorded in England. Infestation causes shriveling of blossoms and loss of foliage. Apple is the preferred host.



Apple Capsid

Severely deformed fruit, dead shoots and deformed ragged leaves in apple orchards may be caused by this mirid. Nymphs and adults are active from early spring into summer. The adult is 6 mm. long, bright green with yellow head, pronotum and legs. Nymphs resemble the adults. Plesiocoris rugicollis has been recorded on several kinds of trees and shrubs, but apple, currant and willow are preferred. It has been called the most serious pest of apple in Britain. Its range includes the more northern areas of Europe and Asia. In North America, it has been recorded in Alaska.



Preparation of Notes for Cooperative Economic Insect Report

Requests have been received relative to the type of information desired for the Cooperative Economic Insect Report and suggestions made for revision in the format.

The report will be reorganized on a principal crop basis. This will simplify present format and make the material more accessible and useful. It is hoped this approach will also stimulate greater participation by pointing out lack of reporting on individual crop problems. Efforts will be made to evaluate and present the information in ways to make it more useful in insect control.

Forecasting statements will be developed wherever field reports support such action. Reporters are encouraged to include this vitally important information in their notes. Emphasis of the Cooperative Economic Insect Report will be on the important insect problems of a regional nature, notes on routine insect occurrence will be kept to a minimum. Routine notes submitted on common insects will be added to the National insect files as warranted, however.

The following guidelines are suggested for preparation of notes. It is realized that all of the information outlined will not be available in each situation, but give the following information when possible.

1. Common (if available) and scientific name of species involved. Stages of insect involved. (If a taxonomic problem exists, it should be noted).
2. Location (definite, recognized area within state, such as region, county or town), date, name of observer or reporter. If note is for period other than current reporting period, give date of observation.
3. Host involved, scope and extent of infestation in number of counties, acres, trees, animals, etc. Also stage of host.
4. Quantitative evaluation of infestation according to recognized survey methods. Where such methods are not available, give numerical data such as number per linear foot, per plant, per sweep or per animal. These data should be based on a representative sampling. An adjectival rating should be accompanied by a numerical rating.
5. Estimation of extent of injury or damage.
6. Comparisons with previous infestations, outlook or predictions for future infestations, unusual influences.
7. Status of natural or applied control.
8. When reporting new State, United States, or North America records, include the above information insofar as applicable, as well as name of taxonomist making determination.

Examples of notes including these data are as follows:

EUROPEAN RED MITE (*Panonychus ulmi*) - Egg populations have reached point where protective sprays are warranted in 10 percent of apple orchards in Knox County. Counts on June 30 showed 0 to 4.8 live mites per leaf and 0 to 37.6 eggs per leaf. Further increase and spread expected with continued favorable weather. (Jackson, July 2).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - Oviposition and hatch practically complete in central counties. Fifty egg masses per 100 stalks in northwest area. In southern counties, all corn 35 inches or taller, 70 to 100 percent infested with 2 to 22 larvae per stalk. Larvae from first to third instar. (Smith).

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