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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 clearinghouse and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Federal Center Building  
Hyattsville, Maryland 20781

## COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Adults of CEREAL LEAF BEETLE migrating to oats in Indiana and Michigan; hatching of eggs underway. (p. 533). Heavy populations of ARMYWORM still damaging small grains and pastures over wide portion of north and north central Texas, and larvae heavy in some wheat fields in southern Illinois. Armyworm activity also reported in Kansas, Missouri, Wisconsin, Michigan, Indiana and Maryland. (p. 534). EUROPEAN CORN BORER adults flying in sections of Maryland, Delaware and Illinois. Spring survival survey in southeast North Dakota showed number of larvae per acre 3,485 and percent survival 73. (p. 534). ALFALFA WEEVIL activity continues to increase in the Northeast and in the West, and number of counties reported infested for the first time in Ohio, Illinois, Missouri and Arkansas. Control difficulties reported in Pennsylvania. (pp. 536-537).

MEDITERRANEAN FRUIT FLY (single male) caught in Steiner trap at Miami, Dade County, Florida. No evidence of an established infestation found. (p. 541). Population of TEXAS CITRUS MITE in Florida citrus higher than in May of any prior year, and further increase expected with majority of groves having moderate to heavy infestations in June. Increase of CITRUS RUST MITE also underway in Florida citrus and about 10 percent of groves will have heavy infestations. (p. 542). Adults of CODLING MOTH active rather generally; entries appeared in Missouri. Injury to terminal twigs of peach trees by ORIENTAL FRUIT MOTH larvae observed in Ohio, Indiana, Missouri and Kansas; and FRUIT-TREE LEAF ROLLER common in New York, Connecticut and Maryland. (p. 543). PLUM CURCULIO adults and/or injury noted in Northeast and Mid-Atlantic areas, and in Ohio, Wisconsin and Missouri. (p. 544). LESSER PEACH TREE BORER adults appeared in Indiana and Ohio, and reported causing injury in Doniphan County, Kansas. (p. 544).

COLORADO POTATO BEETLE building up in southwest Ohio on potatoes and very numerous in sections of New Jersey and Maryland. Activity also reported in New York, Rhode Island, Massachusetts and Virginia, and damage reported in Alabama. (p. 546).

Feeding by CANKERWORMS evident on foliage of trees in Northeastern States and in Iowa, Minnesota and North Dakota. ELM LEAF BEETLE causing extensive defoliation of elms in Oklahoma and quite heavy in widespread areas of Chilton and other central Alabama counties. (p. 554). First-stage larvae heavy on elms in southeast Missouri. BIRCH LEAF MINER active in Vermont, Connecticut, Massachusetts, New Jersey and Pennsylvania. (p. 555).

MOSQUITOES annoying in sections of Utah, North Dakota, Minnesota, Illinois, Michigan and Rhode Island. (pp. 556-557). Unusually high populations of AMERICAN DOG TICK persisting in many northern counties of Wisconsin; continues bothersome in Lancaster County, Nebraska; and populations still high in Stillwater area of Oklahoma. (p. 557).

CUBAN MAY BEETLE reported from number of new host plants in Miami area of Florida. See CEIR 14(21):524 for additional host records of this species. JAPANESE BEETLE adults reported in North Carolina and Virginia. (p. 561).

DETECTION

ALFALFA WEEVIL (*Hypera postica*) reported in 14 new counties for the first time; 8 in Missouri, 3 in Illinois, 2 in Ohio and 1 in Arkansas. (pp. 536-537). CEREAL LEAF BEETLE (*Oulema melanopa*) found in Monroe County, Michigan; first new county reported in 1964. (p. 533). LARCH CASEBEARER (*Coleophora laricella*) found for first time in Moscow, Latah County, Idaho; indicating a rapid southward spread beginning to occur. (p. 552).

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 558).

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Reports in this issue are for week ending May 22 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING MAY 25

Warm, sunny days brought the hottest week of the growing season to date. Rainfall was limited to a few areas of scattered showers.

**TEMPERATURE:** Though the Pacific Northwest continued cool, temperatures averaged substantially above normal in most other areas. Midperiod maxima soared to 100° levels in the central and northern Plains States boosting averages in these areas to more than 12° above normal. Kansas had 6 days of 90° or higher. East of the Mississippi, 2 or more days of 90° heat pushed averages to 6° above normal from the central Mississippi Valley into southern New England. Many stations from the Rocky Mountains to New England set new daily records and the mercury hit new early season maxima at some locales. On the 21st, while new lows for the date were set in Michigan and Vermont, Fargo, North Dakota, and International Falls, Minnesota, recorded new early season marks of 98° and 95°, respectively. A new May high of 98° was logged at Marquette, Michigan. The weekend brought record heat to the Northeast as 90° readings were observed in northern New England.

**RAINFALL:** Dry weather prevailed over most areas of the Country. Warm air, long sunny days, and brisk winds in many of the main agricultural areas east of the Rockies further depleted moisture supplies. Brief shower periods late in the week, brought totals to over 1 inch at many stations from Lake Superior through western Missouri. Frequent showers over the coastal plain and lower Rio Grande Valley of Texas gave weekly amounts over 1 inch; some totals exceeded 5 inches. General showers early and late in the week deposited 0.5-1 inch amounts from northeast Ohio through northern New England. Heavy showers after midweek wetted the southeast coast of Florida with 2- to 4-inch falls.

**DRY WEATHER:** The principle dry area east of the Mississippi is found over South Carolina and Georgia where little or no rain has fallen in 3 weeks. Over the Country, the most striking deficiency is found over central and eastern New Mexico and parts of west Texas including the Panhandle. Amarillo, Texas, has had only 0.14 inch in the last 17 weeks; Roswell, New Mexico, only 0.17 inch in 15 weeks; Midland, Texas, a trace in the last 9 weeks.

**OTHER ITEMS:** Severe storms dropped golf ball size hail in Stillwater, Minnesota, on the 18th, pelted areas in northern Vermont and near Cleveland, Ohio, with 0.75-inch stones on the 19th, and caused extensive hail damage to cars and crops in Hampton County, South Carolina. On the 22nd, a tornado dipped into a Nebraska field, while another hit Marion, Minnesota, on the 23rd. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

**GRASSHOPPERS - OKLAHOMA** - Threatening nymphal populations present on extensive acreage of rangeland in Carter and Murray Counties, south central; several species involved. Only light counts present in northwest areas, with very little activity in Cimarron County, panhandle area. (Okla. Coop. Sur.). **COLORADO** - Rangeland species low in numbers in Huerfano and Larimer Counties; some nymphs and overwintering adults present. (Blase, Jenkins, Figurski). **KANSAS** - Few first to third instars of Melanoplus spp. noted in some fields in eastern area. (Peters). **MISSOURI** - Early instars of M. sanguinipes found in Buchanan County, northwest. Early instars of several species light in southwest area. (Houser, Thomas, Wood). **SOUTH DAKOTA** - Very light hatch of grasshoppers observed May 14 in Jones, Mellette, Tripp, Gregory and Lyman Counties, south central. Only few first-stage nymphs found at any location; most were Melanoplus bivittatus, with few M. sanguinipes present. Light hatching of cropland and rangeland species observed in western area. (Burge, Zimmerman). First-instar M. sanguinipes averaged 3 per 100 sweeps in alfalfa in Campbell County. (Hintz). **NORTH DAKOTA** - Nymphal survey conducted in Kidder, Logan, Emmons and Burleigh Counties. Marginal infestations ranged from less than 1 to 10 per square yard. Some alfalfa and old stubble fields had up to 6 per square yard. M. bivittatus, M. sanguinipes and M. differentialis dominant species. All nymphs in first and second stages. (Brandvik). **MINNESOTA** - First egg hatch observed in Anoka, Sherburne, Wright, Winona and Rice Counties. Hatch was light, with only Melanoplus spp. being found. If present warm weather continues, egg hatch of earlier species should be well underway week ending May 29 in light sandy soil areas. (Minn. Ins. Rpt.).

**CEREAL LEAF BEETLE (Oulema melanopa) - INDIANA** - In Hudson Township, La Porte County, and Olive Township, St. Joseph County, northwest section, heavy deposition of eggs in seedling oats noted May 18 and 19. Very little hatch in oats. Few fields with egg counts as high as 300-350 per 100 stems. Peak hatch expected May 25 to June 1 in oats. Occasional hatching in oats to May 20. Adult populations leaving wheat for oats; very few eggs being found in wheat. Few third-stage larvae observed on wheat. No loss to wheat expected in State during 1964. (Wilson). **MICHIGAN** - Monroe County is first new county to be found infested in 1964. State-Federal survey crews made positive finds in Whiteford Township, Summerfield Township and Exeter Township. Four additional townships (Thornapple, Irving, Carlton and Woodland) also found infested for first time in Barry County. Adults migrated predominantly into oat fields. In research fields of oats near Gallien, Berrien County, adults, eggs and young larvae all present. Most larvae in first and second stages. Over 90 percent of eggs in wheat and grass fields hatched. Adults extremely rare and larvae scarce in areas treated under State-Federal suppression program. Additional treatments for larvae to start as soon as weather conditions permit. (Boyer, Lovitt, Ruppel, Ring).

**CORN FLEA BEETLE (Chaetocnema pulicaria) - DELAWARE** - Present on young corn in most areas of State. (Burbutis). **MARYLAND** - Heavy on young sweet corn at several localities in Charles, Harford and Worcester Counties. Generally light on field corn in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). **OHIO** - Adults moderate on young sweet corn plants in Brown County, southwest; first of season. (Lyon).

**FALSE WIREWORMS - NEBRASKA** - Larvae abundant in many western area wheat fields. One report of damage received from Dundy County. (Pruess).

**WIREWORMS - COLORADO** - Damaged corn in Phillips County, necessitating replanting. (Ext. Serv., Schafer).

**BILLBUGS - NORTH CAROLINA** - Sphenophorus sp. damaging several fields in Union County. (Marsh, Mount). **SOUTH CAROLINA** - Adults of unspecified species damaging corn in Clarendon County. (Nettles et al., May 19). **GEORGIA** - Moderate infestations of S. callosus in southeast. (Gurley).



SOUTHERN MASKED CHAFER (Cyclocephala immaculata) - NEBRASKA - Adult activity very noticeable in Lancaster County. (Walstrom).

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Heavy populations still causing damage to small grains and pastures over wide portion of north and north central areas. Approximately 50,000 acres treated in Grayson and Denton Counties. (Texas Coop. Rpt.). OKLAHOMA - Heavy populations reported previous week at scattered locations throughout eastern half of State considerably reduced. (Okla. Coop. Sur.). KANSAS - Counts 0-15 (average 3-9) per foot of row in Crawford County, southeast. Controls to be initiated in heavier infested fields. (Gates). Counts in northeast and east central areas range 0-2 per foot of row. About 75 percent of wheat fields in these areas infested with second and third-stage larvae in light numbers. Occasional parasitized larva noted. (Peters). MISSOURI - Building up in down spots of small grains; 11-30 per square foot in Bates and Vernon Counties, west central area. (Houser, Thomas, Wood). ILLINOIS - Larvae heavy in some wheat fields, up to 25 per linear foot, in southern half of State; most larvae about two-thirds grown in southern tip of State and in central region most in second instar. (Ill. Ins. Rpt.). WISCONSIN - Larvae 5 per 100 sweeps in field of barley in Green County; damage not apparent. (Wis. Ins. Sur.). INDIANA - One of 6 wheat fields surveyed in Knox and Greene Counties, southwest, infested with 3.7 first to third-stage larvae per linear foot of row. (Bram, Matthew). MICHIGAN - Moderate numbers of adults taken at blacklight traps recently in Livingston, Kalamazoo, Branch and Ingham Counties; few larvae swept from wheat in Berrien County. (Newman, Bailey, Tundevald, Ruppel). MARYLAND - Light to moderate numbers of larvae up to one inch in length infesting barley and rye in Worcester County. Heavier outbreaks may occur. (U. Md., Ent. Dept.). SOUTH CAROLINA - Appearing at usual time in well-fertilized oat plantings in Calhoun County. Excellent control being obtained. (Nettles et al., May 19).

AN ARMYWORM - GEORGIA - Heavy infestations on wheat and oats in Peach and Crawford Counties. (Harvey, May 18).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - Results of spring survival survey conducted in Cass, Richland, Sargent and Ransom Counties showed 73 percent survival, with average number of live larvae per square yard 0.72. Number of larvae per acre 3,485. One field in Fargo area showed 37.5 percent of larvae alive and 62.5 percent dead. (Frye). NEBRASKA - Majority of larvae in fifth stage; beginning stages of pupation evident in most northeast areas. (Bergman). IOWA - Pupation 10 percent at Ankeny and in Boone County May 14. Early planted corn on Ankeny farm 4 inches high. (Brindley, Iowa Ins. Inf.). ILLINOIS - Pupation complete in southern area, ranges from 50 to 90 percent complete in central area and from 25 to 70 percent in northern area. Moth emergence well underway in southern area and begun in central area. No moth emergence recorded in northern area. Some death of overwintering borers noted. (Ins. Sur. Bull.). MARYLAND - Numbers of moths appearing at blacklight traps at Berlin, Centreville, on Eastern Shore, increased considerably over previous weeks. (U. Md., Ent. Dept.). DELAWARE - Total of 80 adults taken in blacklight trap May 13-20 in Sussex County. Egg masses rather common on weeds in this area and on potatoes in Kent County. (Bray).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Surveys in southwest show no pupation, but few larvae beginning to build their cocoons. (Houser, Thomas, Wood).

WHEAT HEAD ARMYWORM (Faronta diffusa) - KANSAS - Counts less than 1 per foot of row in wheat in northeast and east central areas; about 75 percent of fields infested. (Peters). WISCONSIN - Adults appearing in Mazomanie blacklight trap. (Wis. Ins. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - GEORGIA - Light on corn in Tift County. (McMillan).



ARMY CUTWORM (Chorizagrotis auxiliaris) - IOWA - Collected in field seeded this spring to oats, brome, alfalfa, trefoil, and red clover in Adams County. Larvae had eaten all plant growth from high parts of field. Corn has been damaged in State in previous years. (Iowa Ins. Inf.; May 18). NEBRASKA - Some damage to wheat noted in Kimball County and to alfalfa in Scotts Bluff County. Development about 20 days later than normal. (Pruess, Hagen).

BRONZED CUTWORM (Nephelodes emmedonia) - MISSOURI - Causing light damage to blue-grass pastures in Clay County, northwest. (Houser, Thomas, Wood).

CUTWORMS - MARYLAND - Undetermined species caused light to moderate injury to field and sweet corn in Carroll and Harford Counties. (U. Md., Ent. Dept.).

SOD WEBWORMS (Crambus spp.) - NEBRASKA - Adult activity very common in Lancaster County. (Walstrom). KANSAS - Adults active for about 10 days in Doniphan County (Eshbaugh) and noted in lawn in Riley County (Peters). ILLINOIS - Abundant in lawns in Urbana area, May 16. (Ill. Ins. Rpt.). VIRGINIA - Larvae of C. caliginosellus causing heavy damage to seedling field corn in spots in 2 fields of approximately 5 acres each in Pittsylvania County, (Dominick, May 18). Larvae severely infesting field of seedling field corn near Appomattox, Appomattox County; approximately 80 percent of plants infested. (Tarpley, Smith; May 15). Larvae infesting seedling corn on farm near Newport, Craig County. (Tarpley, May 21).

ENGLISH GRAIN APHID (Macrosiphum avenae) - NEBRASKA - Counts in oats less than 1 per 10 sweeps in Cedar and Knox Counties. (Bergman). MINNESOTA - Counts low in small grains, averaged about 40 per 100 sweeps. (Minn. Ins. Rpt.).

WISCONSIN - Populations higher in all grain fields than Schizaphis graminum (greenbug). Winged forms quite common, especially in oat fields examined in Trempealeau County area. Ranged from 3 per 100 sweeps to 3 per sweep. Some disease and/or parasitism appearing. (Wis. Ins. Sur.). ILLINOIS - Varied 0-25 per sweep in wheat in southern half of State. (Ill. Ins. Rpt.). INDIANA - Adults and nymphs averaged 1 per 10 sweeps on wheat in Benton County, northwest, and 3 per 10 sweeps in Greene County, southwest. (Bram). ARKANSAS - Numbers low in small grains in northwest. (Ark. Ins. Sur.).

GREENBUG (Schizaphis graminum) - COLORADO - Ranged 3-5 per linear foot in winter wheat in Phillips County. (Ext. Serv., Schafer). NEBRASKA - Averaged less than 1 per 10 sweeps on oats in Cedar, Knox and Pierce Counties. (Bergman). MINNESOTA - Present, but extremely light, in south central, southeast, east central and central districts. (Minn. Ins. Rpt.). WISCONSIN - Ranged 3-6 per 10 sweeps in early planted oat fields in Trempealeau area. Few colonies forming and few winged forms present. Few colonies also noted forming on early planted oats in La Crosse and Green Counties. (Wis. Ins. Sur.).

CHINCH BUG (Blissus leucopterus) - TEXAS - Counts in Austin County averaged 5 per stalk on young corn. (Texas Coop. Rpt.; McClung). KANSAS - Only an occasional adult noted in wheat and young corn in northeast and east central areas. (Peters).

FALSE CHINCH BUGS (Nysius spp.) - NEW MEXICO - Heavy on barley and lighter on oats on farm near Carlsbad, Eddy County. Counts often averaged 100 adults per head of barley or one pint of adults per 5 sweeps. Controls applied to these fields. (N.M. Coop. Rpt.).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - SOUTH DAKOTA - Populations in north central and northeast areas averaged 200 per 100 sweeps on alfalfa and slightly less on small grains. (Hintz). NORTH DAKOTA - Up to 5 per sweep taken along roadside near Clifford, Traill County. (Frye). MINNESOTA - Counts high in east central and central districts early in week; 400-500 per 100 sweeps in alfalfa and small grain. By May 21, counts down to 0-100 per 100 sweeps and averaged around 20 per 100 sweeps. Migration north with strong southerly winds suspected. (Minn. Ins. Rpt.). WISCONSIN - Adults becoming common in oat fields.

Averaged 3-6 per 100 sweeps in most fields in southern tier of counties. (Wis. Ins. Sur.). MICHIGAN - No adults collected in sweepings taken May 19 in Berrien, Cass, Ingham and Livingston Counties. (Newman, Janes).

SEED-CORN MAGGOT (Hylemya platura) - VERMONT - Adults observed May 16; treated seed corn recommended. (MacCollom). VIRGINIA - Some poor stands of sweet corn on Eastern Shore attributed to this species. (Hofmaster).

WHEAT STEM MAGGOT (Meromyza americana) - INDIANA - Less than 1 percent of wheat in Knox and Greene Counties (southwest) infested. (Bram, Matthew). MISSOURI - Heavy in bluegrass pastures in Buchanan, Clinton and Clay Counties, northwest. (Houser, Thomas, Wood).

SAWFLIES (Dolerus spp.) - OHIO - D. unicolor, D. collaris and D. nitens found April 10 in northwest area. Det. by B. D. Burks. Larvae now quite plentiful in forage crops throughout same area; 2-3 larvae per sweep in Medina County, northeast. (Thoburn, Lyon).

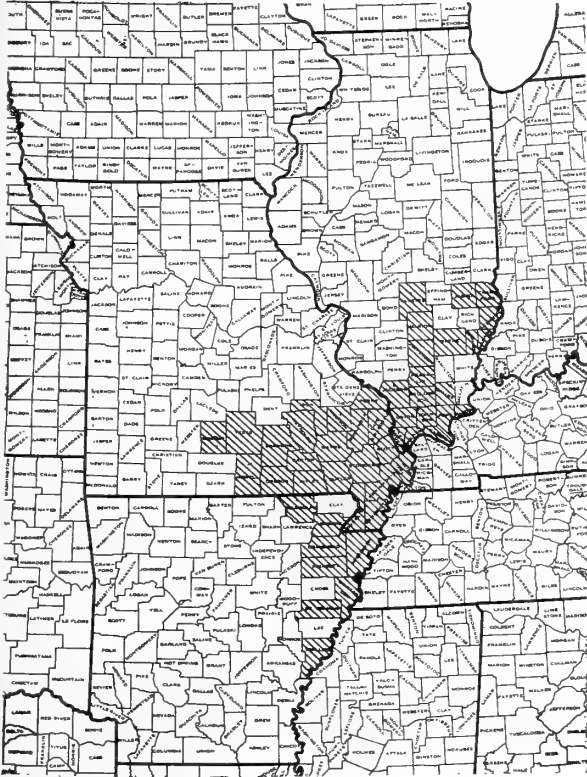
BROWN WHEAT MITE (Petrobia latens) - COLORADO - Up to 20 per linear foot in wheat in Phillips County. Some mosaic evident in Amherst area. (Ext. Serv., Schafer).

THRIPS - MARYLAND - Beginning to infest more advanced field and sweet corn in southern areas. (U. Md., Ent. Dept.). GEORGIA - Light to heavy infestations on peanuts in south central and southwest areas. (Johnson). MISSOURI - Light on oats in southeast and on corn in Newton County, southwest. (Harrendorf, Jones, Houser, Thomas, Wood). NEW MEXICO - Generally light to moderate with occasional heavy infestation in southern area alfalfa. (N.M. Coop. Rpt.). ARIZONA - Chirothrips spp. light in Bermuda grass in Yuma County; no treatments required during week. (Ariz. Coop. Sur.). CALIFORNIA - Medium populations of immature Frankliniella occidentalis occurring on safflower plantings in Huron and Five Points and heavy on alfalfa in Coalinga, Fresno County. (Cal. Coop. Rpt.).

ALFALFA WEEVIL (Hypera postica) - VERMONT - Adults ranged 1-4 per 10 sweeps in Springfield-Bellows Falls area, Windsor and Windham Counties on May 15; no larvae found. (MacCollom). MASSACHUSETTS - Some fields in Hampshire and Hampden Counties had over 1,200 larvae per 100 sweeps; "ragging" of foliage obvious in such fields. (Shaw). RHODE ISLAND - Larval feeding and larvae common in field at Kingston, Washington County; eggs also present. Similar situation reported from Slocum, Washington County. (Mathewson, Wakefield). NEW YORK - Averaged 25 third and fourth-stage larvae per sweep and 1 adult per 3 sweeps about 9 p.m. on May 13 at Fishkill, Dutchess County; injury readily apparent. In another field on hill top, 75 larvae and one adult per sweep taken in severely damaged area in same county. Less than one larva per sweep taken in severely damaged area in same county. One larva or more per sweep taken in portion of field left untreated near Greenwich, Washington County; less than one larva per 3 or 4 sweeps taken in fall treated portion of same field. There appeared to be some resistance to chlorinated hydrocarbon used. Relatively severe damage readily found in alfalfa not sprayed in fall of 1963 in Ulster County; those fields fall sprayed show excellent control. (N.Y. Wkly. Rpt., May 18). PENNSYLVANIA - Very heavy in most areas with spring controls acting merely as a few days check. Fall treatment varies from complete control to very unsatisfactory results. (Udine). MARYLAND - Pupation well advanced on Eastern Shore and first-generation adults appeared May 22 in Howard County. Larvae and adults damaged second-growth alfalfa in Prince Georges County. (U. Md., Ent. Dept.). VIRGINIA - Movement of adults out of alfalfa well underway in Mecklenburg and Prince Edward Counties. (Pienkowski). Most alfalfa cut in Floyd, Patrick, Henry and Franklin Counties, making larval surveys impossible. First cutting well underway in Montgomery and surrounding counties. Infestation in uncut fields light to very severe in Montgomery, Pulaski, Wythe, Carroll and Grayson Counties. (Tarpely). SOUTH CAROLINA - Considerable damage appeared during late April on alfalfa treated during fall of 1963 in Cherokee County. More devastating this spring on old stands of alfalfa than previously noted in Newberry County; only light infestations noted on new

seedings treated with proper insecticide in fall of 1963. (Nettles et al, May 8). OHIO - Adults collected from two fields of alfalfa near Seville, Medina County, northeast area; few larvae also collected. Three adults per 25 sweeps near Mount Orab, Brown County, southwest area, in bottomland alfalfa. These are new county records. (Lyon, Thoburn).

Distribution of Alfalfa Weevil in Arkansas, Missouri & Illinois



INDIANA - Surveys of alfalfa in Denton, Newton, Lake, Porter and La Porte Counties (northwest) and Greene, Knox and Daviess Counties (southwest) were negative. (Bram). ILLINOIS - Adults varied 0-8 and larvae 0-16 per 100 sweeps in second-growth alfalfa in southwest district. All stages of larvae present. Most adults newly emerged. Found in Saline, Edwards and Fayette Counties for first time. (Ill. Ins. Rpt.). MISSOURI - Larvae swept from alfalfa in 8 new counties: Madison, Iron, Reynolds, Shannon, Oregon, Howell, Texas and Wright. Heaviest counts in Reynolds and Shannon Counties, averaging 2-3 and 2-4 per sweep, respectively. Moderate damage found in Shannon County, (Houser, Thomas, Wood). ARKANSAS - Larvae taken from alfalfa in Randolph County (northeast). This is a new county record. (Ark. Ins. Sur.). COLORADO - Counts per 100 sweeps in Larimer County alfalfa ranged 10-30 adults and 100-200 larvae. Some damage appearing on terminal growth. (Jenkins). Larvae as high as 300 per 100 sweeps in Mesa County alfalfa; ranged 30-50 per 100 sweeps in most fields, with 20-30 percent parasitized by Bathyplectes curculionis. (Bulla). WYOMING - Adult activity increasing in Fremont County alfalfa; averaged 8-12 adults per 100 sweeps in 36 fields. No larval activity noted. (Marks). UTAH - Adults

averaged 2 per sweep in area of Box Elder County; few first-stage larvae also present. Adults more active in northern part of State during past weeks. Activity slow this spring in Cache County; no larvae found, but adults taken in moderate numbers during field surveys. More numerous as adults in some Davis, Weber and Salt Lake County fields. (Davis, Knowlton). NEVADA - Adults per sweep averaged 4 in southern Washoe County, 2-3 in Lovelock area, Pershing County, and 8-10 in Fallon area, Churchill County. Eggs present in alfalfa stems and mating adults and gravid females observed in these areas and in Mason Valley, Lyon County, and Douglas County. In all of these areas, larval hatch appeared uneven and very few intermediate instars observed, but some full-grown larvae and numerous newly hatched larvae present. Highest larval counts 30-40 per sweep in Douglas County. (Batchelder, Cooney, Ferraro, Lauderdale, Weaver, York). CALIFORNIA - Larvae light on alfalfa in Gonzales area of Monterey County. (Cal. Coop. Rpt.).

CLOVER LEAF WEEVIL (Hypera punctata) - IDAHO - Adults general in fields of white clover in Boundary County. Due to cold weather, growth of clover slow and resulting damage to plants rather severe. (Ingle). IOWA - Small larvae averaged 2 per plant in eastern area. (Iowa Ins. Inf., May 18). OHIO - Adults 2 and larvae 6 per 50 sweeps on alfalfa in Wayne County, northeast area. (Lyon).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - IDAHO - Larvae causing extensive damage to 1963 fall planted field of red clover north of Notus, Canyon County. Larvae feeding on developing stem and bud growth on estimated 80 percent of all leaf axils. (Waters). SOUTH DAKOTA - Adults averaged 23 per 100 sweeps in

Campbell County alfalfa. (Hintz). IOWA - Overwintered adults noted in east central area. (Iowa Ins. Inf., May 18). OHIO - Adults 8 per 25 sweeps in alfalfa in southeast Fayette County, southwest area. (Lyon).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - UTAH - Notching leaves of sweetclover at Huntsville, Weber County. (Knowlton). NEBRASKA - Averaged 9 adults per 10 sweeps on Cedar County sweetclover; moderate leaf feeding damage evident. (Bergman). NORTH DAKOTA - Moderate damage to clover observed near Kindred, Cass County; averaged 2 per sweep. (Frye).

CLOVER ROOT CURCULIO (Sitona hispidula) - OHIO - Adults 6-10 per 50 sweeps on red clover-alfalfa forage in Medina County, northeast. (Lyon).

CLOVER ROOT BORER (Hylastinus obscurus) - IDAHO - Heavy adult flight occurred for 10 days in Canyon County. (Waters).

CLOVER STEM BORER (Languria mozardi) - MISSOURI - Few adults found in red clover in Chariton County, north central. (Houser, Thomas, Wood).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - WASHINGTON - First adults obtained in soil emergence traps over grass and plant duff adjacent to white Dutch clover seed field at Pullman, Whitman County, on May 20. (Hutt). IDAHO - First adult of season obtained May 18 by sweeping Symphoricarpos spp. in swale alongside field of white clover east of Moscow, Latah County. (Y. Unus).

ALFALFA SNOUT BEETLE (Brachyrhinus ligustici) - NEW YORK - Large migrations found near Clayton, Jefferson County; this area and area near Sacketts Harbor are areas of greatest infestation. Baiting of ditch banks, fallow and plowed fields continues with good results evident. (N.Y. Wkly. Rpt., May 18).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NEBRASKA - Averaged 1 adult per 10 sweeps of sweetclover in Cedar County. (Bergman). WISCONSIN - Appearing in alfalfa in southern part of State. (Wis. Ins. Sur.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Adults 1-3 per 25 sweeps in alfalfa near Los Lunas, Valencia County. (N.M. Coop. Rpt.).

ASH-GRAY BLISTER BEETLE (Epicauta fabricii) - ILLINOIS - Adults 0-70 per 100 sweeps in alfalfa in southwest district; first of season. (Ill. Ins. Rpt.).

PEA APHID (Acyrtosiphon pisum) - WASHINGTON - All stages damaging alfalfa grown for seed at Yakima and vicinity, Yakima County; ranged 1-25 per sweep. Ranged 4-220 per sweep (mostly 10-20) at Gardena Bench, Lowden area of Walla Walla County. (Featherstone, Halfhill). WYOMING - Averaged 150 per 100 sweeps in alfalfa in Fremont County. (Marks). COLORADO - Populations low in alfalfa in Larimer County; averaged 200 per 100 sweeps. (Jenkins). UTAH - Active but not serious in alfalfa at Ogden, Weber County. (Knowlton). NEVADA - Varied 3-60 per sweep in southern Washoe County alfalfa. (Cooney). Light, spotted infestations in Lovelock, Pershing County. (Ferraro). ARIZONA - Populations diminishing in alfalfa in Graham, Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Remains light in most alfalfa in southern counties. (N.M. Coop. Rpt.). OKLAHOMA - Generally fewer than 50 per 10 sweeps noted in alfalfa checked in south central and southwest areas. (Okla. Coop. Sur.). MISSOURI - Counts low in northwest and southwest; 150-300 per sweep in Wright and Webster Counties, south central area, with predator and parasite counts high also. (Houser, Thomas Wood). IOWA - Averaged 8-10 per 10 sweeps; only few immature forms noted, indicating stem mothers just beginning to produce living young. (Iowa Ins. Inf., May 18). NEBRASKA - Averaged 370 per 100 sweeps in Saunders County alfalfa. (Calkins, Jarvis). Ranged 15-75 per 10 sweeps on alfalfa and sweetclover in Cedar, Knox, Pierce and Wayne Counties. (Bergman). NORTH DAKOTA - Beginning to build up on alfalfa; up to 5 per sweep in southeast. (Frye). MINNESOTA - Range

per 100 sweeps in alfalfa 50-500 in southeast, 50-600 in south central, 150-400 in east central and 280-800 in central district. Winged forms found in all fields. Predators, primarily lady beetles, present in low numbers. (Minn. Ins. Rpt.). WISCONSIN - Very little population change noted; about 10 percent winged forms in most fields. Varied 30-75 per 10 sweeps on alfalfa in Iowa County; 27-70 per 10 sweeps in southern Grant County; and 3-45 (averaged about 20) per sweep in southern Dane, Green and Rock Counties. (Wis. Ins. Sur.). ILLINOIS - Building up on alfalfa in west-southwest and southwest districts; 100-200 per sweep common. Hay harvest underway and treatments unnecessary. (Ill. Ins. Rpt.). INDIANA - Nymphs and adults averaged 150 per sweep on alfalfa in Posey County, southwest. (Everly). Ranged 5-30 (averaged 20) per sweep on alfalfa and 6 per sweep on red clover in Greene County and 10 per sweep on alfalfa in Daviess County, southwest. Ranged 2-20 per 10 sweeps in Newton, Lake, Porter and La Porte Counties, northwest. (Bram). VERMONT - Populations exceptionally high on alfalfa May 14 in Bristol area, Addison County. Humid weather caused sharp decline in population due to disease, but some stunting of alfalfa noted. (MacCollom). RHODE ISLAND - Very numerous on alfalfa locally at Kingston, Washington County. Accompanied by numerous lady beetles. Parasitized aphids also common. (Mathewson). ALABAMA - Damaging caley peas in Marengo County. (Jones)

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Ranged 3-70 per sweep in Brodhead area; 50 percent winged and 35 percent with wing pads in one field and 37 percent winged and 45 percent with wing pads in another field. Parasitism appears quite low. Alfalfa being cut in some areas which may be strong influential factor. Considerable dispersion expected. (Wis. Ins. Sur.). ILLINOIS - Varied 0-8 per sweep in Bond-Madison-St. Clair County area, 0-4 per sweep in McDonough-Fulton-Mason County area and few observed in Massac County. None observed elsewhere. (Ill. Ins. Rpt.). MISSOURI - Average per sweep 20-25 in Vernon County and 10-15 in Greene County, southwest. (Houser, Thomas, Wood). NEBRASKA - Counts of 2 per 10 sweeps noted in Cedar County. (Bergman). ARKANSAS - Ranged 75-100 per 100 sweeps on alfalfa in Washington County (northwest). (Ark. Ins. Sur.). OKLAHOMA - Averaged 25 per 10 sweeps in Cotton County, southwest. None noted in fields checked in south central areas. (Okla. Coop. Sur.). NEW MEXICO - Populations remain light in most alfalfa in southern counties. (N.M. Coop. Rpt.).

SWEETCLOVER APHID (*Therioaphis riehmi*) - NEBRASKA - Averaged 1 per 10 sweeps of sweetclover in Cedar County. (Bergman).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MINNESOTA - Found in Winona County, averaged less than one per stem. (Minn. Ins. Rpt.). IOWA - Hatched in large numbers May 13 in east central area. Small nymphs ranged 2-10 per sweep in alfalfa and red clover in Scott, Clinton, Cedar, Jones and Linn Counties. (Iowa Ins. Inf.). INDIANA - Nymphs ranged from less than 1 to 4 per 10 stems on alfalfa in Greene, Knox and Daviess Counties, southwest. Nymphs in area in advanced stage of development; adults should appear soon. Ranged 1-7 per 10 stems on alfalfa in Newton, Lake, Porter and La Porte Counties, northwest. (Bram). OHIO - Fourth and fifth instars observed in many southwest area forage fields. Most nymphs approaching adult stage. Twenty nymphs collected on wild carrot plant in Fayette County, southwest. (Lyon). NEW YORK - Readily found throughout Jefferson, Oswego and Wayne Counties; infestations do not appear great at present. (N.Y. Wkly. Rpt., May 18). VERMONT - Not yet heavy on trefoil; may be due to open winter. (MacCollom, May 19). DELAWARE - Nymphs rather common in some New Castle County alfalfa. (Burbutis). VIRGINIA - Adults present in Prince Edward County. (Pienkowski).

POTATO LEAFHOPPER (*Empoasca fabae*) - NEBRASKA - Averaged 7 per 100 sweeps on Saunders County alfalfa. (Calkins, Jenkins). IOWA - Averaged 1 per 10 sweeps throughout east central area; presumably migrant adults from south. (Iowa Ins. Inf., May 18). ILLINOIS - Adults per 100 sweeps in alfalfa were 380-1,260 in west, 980-1,540 in central, 260-1,640 in west-southwest, 20-1,740 in east-southeast, 40-660 in southwest and 60-150 in southeast. (Ill. Ins. Rpt.). INDIANA - Adults averaged 3 per sweep on alfalfa in Knox, Greene and Daviess



Counties (southwest) and 5 per sweep in Newton, Lake, Porter and La Porte Counties (northwest). (Bram).

LEAFHOPPERS (*Empoasca* spp.) - VIRGINIA - Adults recently arrived; specimens encountered in Mecklenburg, Prince Edward, Roanoke and Rockbridge Counties. (Pienkowski).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - SOUTH DAKOTA - Counts 50 per 100 sweeps in Campbell County alfalfa. (Hintz). FLORIDA - Counts per 100 sweeps in alfalfa recently cut in Gainesville, Alachua County, 18 adults and 2 nymphs. (Mead).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Slowly increasing in alfalfa; average per 100 sweeps 10 in Graham County, 35 in Yuma County and 30 in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

A BLACK FLEAHOPPER (*Spanogonicus albofasciatus*) - FLORIDA - Adults 9 per 100 sweeps in alfalfa recently cut in Gainesville, Alachua County. (Mead). ARIZONA - Beginning to appear in Graham County alfalfa; averaged 10-20 per 100 sweeps. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - FLORIDA - Adults 20 per 100 sweeps in alfalfa recently cut at Gainesville, Alachua County. (Mead). MICHIGAN - Adults moderate on various crops in Lower Peninsula; 6 per 10 sweeps in alfalfa in Cass County. (Janes, Carpenter, Lincoln, Newman). ILLINOIS - Adults 20-120 and nymphs 0-100 per 100 sweeps in alfalfa in southwest district. (Ill. Ins. Rpt.). IOWA - Averaged 1 per 10 sweeps in alfalfa and red clover. (Iowa Ins. Inf., May 18). NORTH DAKOTA - Appearing on alfalfa; up to 2 per sweep observed. (Frye). NEBRASKA - Adults and nymphs ranged 3-8 per 10 sweeps in alfalfa in northeast areas. (Bergman). MISSOURI - Counts low in southwest; 1-7 per sweep on alfalfa and 7-10 per sweep in field of red clover in Newton County. (Houser, Thomas, Wood). ARKANSAS - Reproduction continued in legume and small grain fields checked. Adults and nymphs of all sizes present in most fields. (Ark. Ins. Sur.). KANSAS - This species and *Adelphocoris lineolatus* in mature alfalfa in northeast and east central areas ranged from 100 to over 1,000 per 100 sweeps. (Peters). WISCONSIN - Adults common and range as high as 5 per 10 sweeps in alfalfa in southwest. (Wis. Ins. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Increasing in alfalfa in Maricopa, Pinal, Yuma and Graham Counties except in fields that have been cut. Counts in uncut fields averaged 10 per sweep. (Ariz. Coop. Sur.). NEVADA - Averaged 1-2 per sweep in southern Washoe County and Lovelock area of Pershing County in alfalfa fields. (Cooney, Ferraro). UTAH - Becoming numerous on alfalfa near Ogden, Weber County, with few nymphs present. Largely *L. elisus*. (Knowlton). COLORADO - Average 100 per 100 sweeps in Larimer County alfalfa. (Jenkins). WYOMING - Adults in alfalfa averaged 30 per 100 sweeps in Fremont County. (Marké).

RAPID PLANT BUG (*Adelphocoris rapidus*) - ILLINOIS - Adults 10-80 and nymphs 0-200 per 100 sweeps in alfalfa in southwest district. (Ill. Ins. Rpt.). WISCONSIN - Nymphs prevalent in some alfalfa fields; as high as 6 per sweep with some nymphs half grown in warmer areas of State. (Wis. Ins. Sur.). NEBRASKA - Ranged 3-6 nymphs per 10 sweeps of alfalfa in Cedar and Knox Counties. (Bergman). MINNESOTA - This species and *A. lineolatus* hatching in southeast, south central, east central and central districts. (Minn. Ins. Rpt.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - ILLINOIS - Adults 0-140 and nymphs 0-500 per 100 sweeps in alfalfa in southwest district. (Ill. Ins. Rpt.). WISCONSIN - Nymphs not as common as *Lygus lineolaris* and *A. rapidus* but forming wing pads in more advanced areas of State. (Wis. Ins. Sur.).

VARIEGATED CUTWORM (*Peridormia saucia*) - KANSAS - Counts in alfalfa in northeast and east central ranged 25-400 per 100 sweeps in mature alfalfa. Occasional larva found under trash in recently cut fields. Occasional parasitized larva

noted. (Peters). MISSOURI - Averaged 1-4 per square foot in northwest and southwest areas on small grains and legumes. (Houser, Thomas, Wood). OKLAHOMA - Heavy populations reported from scattered locations throughout east half of State previous week have been considerably reduced. (Okla. Coop. Sur.).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Light numbers of early stage larvae noted in alfalfa in Murray and Garvin Counties, south central; 0-1 per 10 sweeps. (Okla. Coop. Sur.). ARKANSAS - Second to fourth-stage larvae ranged 20-25 per 100 sweeps in Washington County alfalfa. (Ark. Ins. Sur.). GEORGIA - Light infestation in whorls of corn in Tift County. (McMillan). FLORIDA - Scattered and lightly infesting bloom of corn at Zellwood, Orange County. (Musgrove, Brown; May 7).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Light, scattered counts present in south central areas and counties; 0-3 per 10 sweeps. (Okla. Coop. Sur.). ARKANSAS - Small numbers, 10-20 per 100 sweeps, noted in Washington County alfalfa. (Ark. Ins. Sur.). ILLINOIS - Larvae 10-80 per 100 sweeps in alfalfa in southwest district. (Ill. Ins. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - WYOMING - Considerable activity noted in Fremont County alfalfa fields. (Marks). ARIZONA - First appearance of larvae noted in alfalfa in Graham County. Scattered fields show 2-8 larvae per 100 sweeps. (Ariz. Coop. Sur.).

OMNIVOROUS LEAF TIER (Cnephasia longana) - CALIFORNIA - Light larval populations occurring on alfalfa plantings in Watsonville area, Santa Cruz County, in San Juan Bautista, San Benito County, and Soledad area, Monterey County. (Cal. Coop. Rpt.).

GARDEN SPRINGTAIL (Bourletiella hortensis) - OHIO - Extremely heavy numbers continue to be collected throughout State on forage crops. Many thousands per 10 sweeps of alfalfa in Medina County, northeast. (Thoburn, Lyon).

A SEED CHALCID (Bruchophagus sp.) - IDAHO - First adults of season observed working on experimental plot of crimson clover at Parma, Canyon County, May 19. (Waters).

#### FRUIT INSECTS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - Single male caught in Steiner trap at Miami, Dade County, May 20, 1964, along shore of Biscayne Bay at Pier No. 3, a commercial dock. Trap suspended in Melaleuca tree. (DeHaven). Men and equipment ready if spraying becomes necessary. More traps being set up in area so trap density of 100 per square mile within a 2-mile radius will be maintained. These traps will be checked daily. Within an additional 3-mile radius, trap density will be 60 per square mile and will be checked semiweekly. (Fla. Coop. Sur.). No additional adults trapped as of May 27. There is strong evidence that the trapped fly was possibly a "hitchhiker", since a ship from an infested area docked at Pier 3 on May 18. (PPC).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Continues heavy in Yuma County; controls applied for second time. (Ariz. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Moderate infestation on milkweed in citrus grove known to have tristezia in Yuma County. (Ariz. Coop. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Remains a serious problem to citrus nurseries in Yuma area, Yuma County. (Ariz. Coop. Sur.).

A SWALLOWTAIL BUTTERFLY (Papilio zelicaon) - CALIFORNIA - Larvae causing light damage to citrus in Clovis, Fresno County. (Cal. Coop. Rpt.).



WOOLLY WHITEFLY (Aleurothrixus floccosus) - FLORIDA - Moderate; generally infesting Citrus aurantium at Miami, Dade County. (Knowles, May 14).

Citrus Insect Situation in Florida - Mid-May - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 30 percent of groves (norm 54 percent); 19 percent economic (norm 31 percent). Statewide population below average and in low range. Increase expected in scattered groves, becoming more general in June. Highest districts west and north. TEXAS CITRUS MITE (Eutetranychus banksi) infested 53 percent of groves (norm 30 percent); 34 percent economic (norm 16 percent). Population higher than in May of any prior year. Further increase expected with majority of groves having moderate to heavy infestations in June. Highest districts central, east and north. CITRUS RED MITE (Panonychus citri) infested 53 percent of groves (norm 65 percent); 27 percent economic (norm 42 percent). Although population below average, increase underway and about 10 percent of groves will have heavy infestations. Highest districts north and central. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) infested 8 percent of groves (norm 21 percent); 2 percent economic (norm 3 percent). Very few important infestations expected after May. PURPLE SCALE (Lepidosaphes beckii) infested 82 percent of groves (norm 82 percent); 5 percent economic (norm 20 percent). Below normal and decreasing. Highest district south. GLOVER SCALE (L. gloverii) infested 72 percent of groves (norm 73 percent); 23 percent economic (norm 1 percent). Above normal; infestations becoming heavier in localized areas. Highest districts south and east. CHAFF SCALE (Parlatoria pergandii) infested 81 percent of groves (norm 40 percent); 26 percent economic (norm 1 percent). Above normal in all districts; little change expected. YELLOW SCALE (Aonidiella citrina) infested 51 percent of groves (norm 10 percent); 14 percent economic (norm 1 percent). Above normal; little change expected. Highest district central. BLACK SCALE (Saissetia oleae) infested 28 percent of groves (norm 24 percent); 15 percent economic (norm 9 percent). Recently increased to above normal level. Strong increase expected through June. Highest districts south and west. MEALYBUGS infested 28 percent of groves (norm 19 percent); 8 percent economic (norm 3 percent). Rapid increase since late April has taken statewide population above normal level. Further increase expected through mid-June. WHITEFLY population above normal and will continue high. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

EUROPEAN RED MITE (Panonychus ulmi) - VERMONT - Active in most areas but recent wet weather slowed activity. (MacCollom, May 19). CONNECTICUT - Matured in Cheshire and Southington and near maturity in Niantic. Infestations expected to increase rapidly; controls recommended. (Savos, May 20). NEW YORK - Adult males found near Hudson, Columbia County, May 12; many males and females present in same orchard May 14 with considerable number of summer eggs laid. Population varies from orchard to orchard and from light to very heavy in Orleans County. (N.Y. Wkly. Rpt., May 18). PENNSYLVANIA - Severe to very few, depending upon treatments on apples in south central area. (Pepper). Egg laying underway in northeast area. (Adams). DELAWARE - Increasing in some areas of State on apples. (MacCreary). MARYLAND - Adults generally decreased at Hancock, Washington County, in check plots but large numbers of eggs remain. (U. Md., Ent. Dept.). VIRGINIA - Active in apple orchards in Winchester area, Frederick County. (Rock, May 13). OHIO - Motile mite populations average up to 0.4 per leaf and eggs range up to 4.3 per leaf on check apple trees at Wooster, Wayne County, northeast. (Forsythe). INDIANA - Damaging populations not yet reported in Vincennes area, Knox County; however, mites active and trees should be carefully checked to determine extent of current numbers. Special attention should be given blocks receiving no miticide other than oil earlier in season. (Cleveland, May 19). MICHIGAN - Egg laying heavy in some southwestern apple and plum orchards. (Carpenter).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Populations high in a few Mesa County peach orchards; 10-30 per leaf. (Bulla). CONNECTICUT - Active in orchard ground cover but not into trees. (Savos).

SPIDER MITES - WASHINGTON - Tetranychus mcdanieli, mainly immature stages, observed as heavy on apples near Grandview, Yakima County, during entomology field trip; light on treated apples in Wenatchee area, Chelan County, and light on prunes near Kennewick, Benton County. (Johansen). CALIFORNIA - Bryobia rubrioculus medium on apple trees in nursery in San Jose, Santa Clara County. (Cal. Coop. Rpt.). MISSOURI - Only few, scattered infestations reported in west central area on apples. If weather continues hot and dry, spider mite problems may increase rapidly. (Wkly. Rpt. Fr. Grs., May 20).

CODLING MOTH (Carpocapsa pomonella) - VERMONT - Pupation 50 percent May 22; first emergence expected this week, with egg laying by May 30. (MacCollom). NEW YORK - Not observed in Monroe County. (N.Y. Wkly. Rpt., May 18). PENNSYLVANIA - Some emergence noted in apple orchards of south central area. (Pepper). NEW JERSEY - Controls recommended in apple orchards. (Ins.-Dis. Newsltr.). MARYLAND - First adults observed May 14 at Hancock, Washington County. (U. Md., Ent. Dept.). INDIANA - More than half of caged, overwintering larvae emerged as adults at Vincennes, Knox County; first emergence from this cage reported May 4. Hatching of eggs anticipated at any time. (Cleveland, May 19). MICHIGAN - First emergence of season occurred May 16 in Van Buren County cage; 9 adults emerged by May 20. (Carpenter). WISCONSIN - Three adults caught night of May 18 and 1 on May 19 at Madison blacklight trap. First catch at this location during 1963 was May 26. (Wis. Ins. Sur.). MINNESOTA - Controls recommended. (Minn. Ins. Rpt.). MISSOURI - First entries of season occurred May 18 in both southeast and central areas; controls important. (Wkly. Rpt. Fr. Grs., May 20). KANSAS - Adults appearing in bait traps in Doniphan County, northeast. (Eshbaugh). COLORADO - Pupating in Larimer County apple orchards. (Thatcher). First adults taken in Clifton area, Mesa County, May 15. High numbers noted May 18 and 19; 30-50 per trap. Spray dates for Palisade area May 27 and for Clifton, Orchard, Mesa and Fruita May 28. (Bulla). UTAH - One adult taken at Logan, Cache County, May 20 in light trap. (Davis)

ORIENTAL FRUIT MOTH (Grapholitha molesta) - KANSAS - First wilted twigs noted on peaches in Doniphan County May 18. (Eshbaugh, Peters). INDIANA - Twig injury found May 18 in peach and almond at Vincennes, Knox County; more found May 19. Damage about 3 days old. (Cleveland, May 19). OHIO - First terminal twig injury noted on peach trees on May 20 in Wayne County, northeast. (Forsythe). MISSOURI - New entries reported in west central area and quite a few entries noted in area north of Kansas City. (Wkly. Rpt. Fr. Grs., May 20). SOUTH CAROLINA - Damage increasing in experimental orchards near Pendleton, Anderson County. (Cochran, May 19). NORTH CAROLINA - Damaged peaches noted on dooryard tree in Halifax County. (Blackwell, Robertson). NEW JERSEY - Surveys in unsprayed peach orchards in Gloucester County revealed 20 specimens May 18 in Pitman and 2 on May 21. Collections in Glassboro for same dates were 11 and 3. (Ins.-Dis. Newsltr.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - VERMONT - Active on unsprayed blocks. (MacCollom). NEW YORK - No hatch observed in Monroe County. Egg masses difficult to find again this year in Orleans County. (N.Y. Wkly. Rpt., May 18). PENNSYLVANIA - Few larvae on apples in south central area but no pupae. (Pepper). NEW JERSEY - Controls recommended in apple orchards. (Ins.-Dis. Newsltr.). MARYLAND - Scarce this season in western fruit-growing sections. (U. Md., Ent. Dept.). VIRGINIA - Active in apple orchards in Winchester area, Frederick County. (Rock, May 13). KANSAS - Very light in apple orchard in Doniphan County, northeast. (Eshbaugh, Peters). MINNESOTA - Hatch appears nearly complete in southeast district. Larval feeding noted on water sprouts near center of trees. Controls recommended. (Minn. Ins. Rpt.).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - NEW YORK - Most conspicuous insect in Ulster County orchards to date. (N.Y. Wkly. Rpt., May 18). CONNECTICUT - Appearing heavily in unsprayed trees in Glastonbury, Woodstock, Cheshire, Southington, New Haven and Storrs. (Savos, May 20). MARYLAND - Larvae common in unsprayed apple orchards in Hancock area, Washington County. (U. Md., Ent. Dept.). VIRGINIA - Active in apple orchards in Winchester area, Frederick County. (Rock, May 13).

PEACH TREE BORER (Sanninoidea exitiosa) - KANSAS - Can be found in most peach trees (both young and old) in Doniphan in Doniphan County, northeast. (Eshbaugh, Peters). COLORADO - Larvae in peach seedlings causing severe damage in Denver area. (Expt. Sta., Erickson). NEW MEXICO - Sanninoidea sp. seriously weakening or killing peach trees in dooryard plantings of Albuquerque homes, Bernalillo County. (N.M. Coop. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - VERMONT - Active during hot period May 22-23. (MacCollom). MASSACHUSETTS - First cutting of season observed on apple May 19 in Amherst, Hampshire County. (Wave). RHODE ISLAND - First adult of season jarred from tree in Kingston, Washington County, May 22. (Mathewson). CONNECTICUT - Adults recovered first time this year in New Haven; egg-laying scar found also. Increase expected; controls recommended on faster growing apple and peach varieties first. Controls recommended on homeowner trees. (Savos). NEW JERSEY - Surveys in unsprayed peach orchards in Gloucester County showed 18 specimens May 18 and again on May 21 at Pitman. Collections at Glassboro on same dates were 16 and 12 specimens. (Ins.-Dis. Newsltr). DELAWARE - Eggs and very young larvae now present in small, unsprayed peaches in Kent and Sussex Counties. (MacCreary). MARYLAND - First damaged fruit found May 19 in check plots. Adult observed feeding on apple May 15. (U. Md., Ent. Dept.). OHIO - Considerable egg-laying injury noted on unsprayed plums and apples in Wayne County, northeast. (Forsythe). WISCONSIN - Adults feeding on apple blossoms in Door County. (Wis. Ins. Sur.). MISSOURI - Few reported on unsprayed plums in southeast area. (Wkly. Rpt. Fr. Grs., May 20).

CURCULIOS - NEW JERSEY - Controls recommended in apple orchards. (Ins.-Dis. Newsltr.). MINNESOTA - Active; controls recommended. (Minn. Ins. Rpt.). MASSACHUSETTS - Now number one pest on apples, peaches and pears. Egg-laying scars found on apples week of May 17; controls recommended. (Wave).

LESSER PEACH TREE BORER (Synanthedon pictipes) - KANSAS - Causing severe damage to some peach trees in Doniphan County, northeast. (Eshbaugh). INDIANA - First occurrence in field at Vincennes, Knox County, noted May 4. Emergence steady and gradual since that date, with heavy emergence noted May 16-19. (Cleveland, May 19). OHIO - First adult of season emerged May 15-18 in Wooster area, Wayne County, northeast. (Forsythe).

PEACH TWIG BORER (Anarsia lineatella) - WASHINGTON - Moderate in peach; all left twigs near Kennewick, Benton County. (Entomol. Field Trip). COLORADO - Nearly all in pupal stage in Mesa County peach orchards. (Bulla).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - CONNECTICUT - Larvae easily found on unsprayed trees. (Savos, May 20). PENNSYLVANIA - Moderate on small block of apples in Centre County. (Gesell, May 13). MICHIGAN - Larvae caused some injury; nearing pupation on Montmorency cherry in northern part of Lower Peninsula. (McManus). WISCONSIN - Larvae forming nests and feeding in Door County. (Wis. Ins. Sur.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - PENNSYLVANIA - Larvae well developed on cherry and other trees in south central area; infestations quite low. (Pepper).

A TENT CATERPILLAR (Malacosoma sp.) - WASHINGTON - Light on apple and cherry in Vancouver, Clark County. (Shanks).

CANKERWORMS - NORTH DAKOTA - Became a problem on fruit trees in eastern part of State; some treatment underway. (Frye). CONNECTICUT - Abundance very low this year; scattered localities may have trouble. (Savos, May 23).

CLIMBING CUTWORMS - UTAH - Caused light injury in southern Box Elder County orchards. (Knowlton).

APPLE APHID (Aphis pomi) - RHODE ISLAND - Small infestations found with difficulty on trees in West Kingston, Washington County; surphid fly larvae usually present. (Mathewson). CONNECTICUT - Abundance low in most of State but new colonies found in New Haven, Cheshire and Southington; fewer predators being found so increase expected. (Savos, May 20). PENNSYLVANIA - Alates present on apples in south central area. (Pepper). MISSOURI - Very heavy on unsprayed apple trees in southeast area; yellowing leaves. (Wkly. Rpt. Fr. Grs., May 20).

ROSY APPLE APHID (Anuraphis rosea) - INDIANA - Populations rather substantial in some apple blocks in Vincennes area, Knox County. (Cleveland, May 19). VIRGINIA - Active in apple orchards in Winchester area, Frederick County. (Rock, May 13). MARYLAND - Generally present and causing moderate amount of leaf curl on apples in Hancock area, Washington County. (U. Md., Ent. Dept.). PENNSYLVANIA - No alates noted on apples in south central area but expected soon. (Pepper). CONNECTICUT - Colonies observed in Cheshire and Southington). (Savos, May 20).

APHIDS - UTAH - Anuraphis helichrysi curling plum leaves at Willard, Box Elder County. (Knowlton). NEW MEXICO - Eriosoma lanigerum becoming problem in apple orchards in Los Lunas-Belen area, Valencia County, where proper control measures not used. (N.M. Coop. Rpt.). OHIO - Myzus cerasi producing young and curling leaves of sweet cherry in Wayne County, northeast. (Forsythe). PENNSYLVANIA - Some fairly heavy infestations of Myzus persicae present on south central area peaches, even though 2 applications made earlier. Rhopalosiphum fitchii alates present on apples in same area. (Pepper).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - Moderate infestations, especially of fourth and fifth instars and new adults, noted on treated pears in Wenatchee area, Chelan County, during entomology field trip. (Johansen).

EUROPEAN APPLE SAWFLY (Hoplocampa testudinea) - MASSACHUSETTS - Hatching probably began about May 17 at Amherst, Hampshire County. Tunneling on young fruit now visible. (Wave). CONNECTICUT - Active in all areas where normally occurs, controls recommended. (Savos).

PEAR-SLUG (Caliroa cerasi) - ALABAMA - Causing considerable damage to isolated young pear trees in Lee County. (Barwood).

APPLE LEAFHOPPER (Empoasca maligna) - PENNSYLVANIA - Averaged 5 per leaf on apples in Wayne County; leaves well stippled. (Gesell).

CIGAR CASEBEARER (Coleophora serratella) - ALABAMA - Few groups of pecans partially defoliated by heavy larval buildup in Geneva County. (Willams).

PECAN NUT CASEBEARER (Acrobasis caryae) - NEW MEXICO - Many homeowners reporting larvae in terminal growth of pecan trees at Carlsbad, Eddy County. (N.M. Coop. Rpt.). TEXAS - Eggs being found on nuts in Palo Pinto County; infestation appears light. (Turney). OKLAHOMA - Egg laying started in Jefferson and Love Counties, south central; none noted in Bryan County. Expected to spread and increase in intensity. (Okla. Coop. Sur.). GEORGIA - Light to moderate on pecan in south central and southwest. (Johnson).

A CITHERONIID MOTH - TEXAS - Larvae of unspecified species reported over wide area of State feeding on pecan foliage. (Meisch).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Few broods observed on pecans in Mobile County. (Buttram).

GIANT BARK APHID (Longistigma caryae) - NORTH CAROLINA - Present on pecan trees in Gaston County. (Sproles).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on almond trees in Paso Robles, San Luis Obispo County. (Cal. Coop. Rpt.).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - Egg laying and larval activity underway; webbing of clusters in vineyards found in Berrien and Van Buren Counties on May 18. (Carpenter).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Larvae damaging home planting of grapes in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

A GALL MIDGE (Lasioptera vitis) - NEW YORK - Active in Ulster County on May 8; earlier than average. (N.Y. Wkly. Rpt.).

GRAPE FLEA BEETLE (Altica chalybea) - GEORGIA - Light on Muscadine grape foliage in Morgan County. (West).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - ALABAMA - Appearing in home gardens on grapevines and other plants. (Barwood).

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Nymphs, probably this species, heavy on grape leaves in Hanford, Kings County. (Cal. Coop. Rpt.).

A LEAFHOPPER (Erythroneura elegantula) - CALIFORNIA - Medium and causing noticeable feeding damage to grapes in Sanger, Fresno County. (Cal. Coop. Rpt.).

A SPIDER MITE (Oligonychus platani) - CALIFORNIA - Medium populations on grapevines in Fresno, Fresno County, probably this species. (Cal. Coop. Rpt.).

CURRENT BORER (Ramosia tipuliformis) - WASHINGTON - Pupae noted as moderate in currants at Prosser, Benton County, during entomology field trip; adults observed first time this season. (Cone).

A CRANBERRY TIPWORM (Dasyneura vaccinii) - NEW JERSEY - Larvae found in highly advanced portions of cranberry bogs. (Ins.-Dis. Newsltr.).

CHERRY FRUITWORM (Grapholitha packardi) - NEW JERSEY - Adults observed but no larvae found in blueberries. First controls should be applied about May 26 in Atlantic County and few days later for Burlington County. (Ins.-Dis. Newsltr.).

LEAF ROLLERS - NEW JERSEY - Causing some damage to foliage and green fruit of blueberries. Few larvae of Sparganothis spp. found in highly advanced portion of cranberry bogs. (Ins.-Dis. Newsltr.).

LEAFHOPPERS - NEW JERSEY - Eggs hatched but flight period of winged stage which transmits blueberry stunt due about first week of June. (Ins.-Dis. Newsltr.).

#### TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MASSACHUSETTS - Adults actively feeding on newly emerged potatoes; controls recommended. (Wave). RHODE ISLAND - Overwintered adults abundant and attacking emerging potatoes at Kingston and adjacent potato-growing areas in Washington County. (Kerr, Mathewson). NEW YORK - Early planted potatoes emerging in Suffolk County; adults leaving hedgerows on warm days and laying eggs on potatoes. (N.Y. Wkly. Rpt., May 18). NEW JERSEY - Very numerous in some potato fields; egg laying begun. Controls on potatoes and tomatoes recommended. (Ins.-Dis. Newsltr.). MARYLAND - Adults continue generally abundant on potatoes and tomatoes on Eastern Shore. Small larvae causing noticeable injury to commercial potatoes near Pocomoke City, Worcester County. (U. Md., Ent. Dept.). VIRGINIA - Hatching well underway on Eastern Shore and should accelerate; activity of overwintered adults tapered off somewhat, but many eggs being deposited. (Hofmaster). ALABAMA - Causing some damage to commercial and home garden tomatoes in Jefferson County. (Bagby, Johns). Larvae and adults widespread and causing considerable damage to potatoes in Fairview community, Coffee County. (Stephenson). OHIO - Beginning buildup on potato plants in southwest area; 52 young larvae counted on one potato plant in southern Brown County. Adults and eggs on same plant. (Lyon).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adult populations highest in 10 years in Weld County on matrimony-vine. Counts per 100 sweeps as follows: 300 at Ault, 200 at La Salle, 1,200 at Gilcrest, 1,000-4,000 at Platteville, and 1,200 at Fort Lupton. Egg deposition of 1-10 per leaf noted. (Jenkins). NEBRASKA - Survey May 18 showed all stops negative; Lycium in poor condition. (Hagen).

POTATO APHID (Macrosiphum euphorbiae) - DELAWARE - Present on some potatoes in Kent County. (Burbutis). MARYLAND - Light to moderate on commercial potatoes at Pocomoke City, Worcester County. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Present but scarce on some potatoes in Kent County. (Burbutis). NORTH DAKOTA - Trace numbers appearing in weedy areas in northeast. (Frye).

OMNIVOROUS LEAF TIER (Cnephasia longana) - CALIFORNIA - Larvae medium in tomato fields in San Jan Bautista, San Benito County. (Cal. Coop. Rpt.).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Surveys of properties infested in 1963 continue negative. (Newman).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - WISCONSIN - Adults appearing in Dane County blacklight traps. (Wis. Ins. Sur.). DELAWARE - Adults abundant and causing rather heavy injury to young cucurbits in several commercial fields in Sussex County. (Burbutis). MASSACHUSETTS - Out of hibernation and taken in sweepings in alfalfa. (Wave).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - First adults of season taken in blacklight trap in Sussex County, May 20. (Burbutis).

DARKLING BEETLES (Blapstinus spp.) - ARIZONA - Causing some damage to melons at ground level in Yuma County. (Ariz. Coop. Sur.).

SQUASH BUG (Anasa tristis) - TEXAS - Continues heavy on watermelons in Washington, Milam and Franklin Counties. (Texas Coop. Rpt.).

GARDEN SPRINGTAIL (Bourletiella hortensis) - MARYLAND - Adults caused conspicuous injury to newly emerging cucurbits at several locations in Wicomico County. (U. Md., Ent. Dept.).

CABBAGE LOOPER (Trichoplusia ni) - NORTH CAROLINA - Damaging commercial cabbage near Beaufort, Carteret County. (Taylor). GEORGIA - Heavy on cabbage in Spalding County. (Dupree). FLORIDA - Light to severe on 57 percent of 200 cabbage plants at Sanford, Seminole County. (Desin). OKLAHOMA - Heavy and severely damaging cabbage in home gardens in Marshall County, south central. (Okla. Coop. Sur.). NEW MEXICO - Occasional larva found in lettuce fields in Dona Ana County. (N.M. Coop. Rpt.).

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Larvae appearing rather heavy on cabbage in Lee County; many adults in flight and depositing numerous eggs. (Barwood). NEW YORK - Adults noted in flight in Monroe County. (N.Y. Wkly. Rpt., May 18).

CABBAGE MAGGOT (Hylemya brassicae) - MICHIGAN - Larvae heavy in radishes in research plots in Clinton County. (Wells). NEW JERSEY - Four traps at Great Meadows, Warren County, yielded 25 adults May 20; 2 traps at Cedarville, Salem County, yielded 2 adults same date. Surveys made in cabbage and other cole crops. (Ins.-Dis. Newsltr.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - KANSAS - Injured 100 percent of snap bean leaves where controls not applied. (Eshbaugh). OHIO - Adults feeding on garden beans in Highlands County, southwest. (Lyon). MARYLAND - Adults causing light to moderate foliage injury on snap beans at several locations on Eastern



Shore. (U. Md., Ent. Dept.). GEORGIA - Moderate on lima and snap beans in Spalding County. (Dupree).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - First adults of season present on snap beans in eastern Sussex County; causing slight injury. (Burbutis). GEORGIA - Light to moderate on beans in south central area. (Johnson).

SEED-CORN MAGGOT (Hylemya platura) - VERMONT - Adults observed May 16; treated seed recommended. (MacCollom). VIRGINIA - Cool, wet and late spring afforded optimum conditions for development on Eastern Shore. Some reports of poor stands of snap beans received. (Hofmaster, May 19).

PEA APHID (Acyrtosiphon pisum) - DELAWARE - Increase continues on untreated peas in areas of Sussex County. (Burbutis). WISCONSIN - Ranged 0-3 per 10 sweeps on peas in Dane, Rock, Walworth, Iowa, La Crosse and Sauk Counties. (Wis. Ins. Sur.).

ASPARAGUS BEETLES (Crioceris spp.) - VERMONT - Active in all areas; controls recommended. (MacCollom). MARYLAND - Adults and eggs of C. asparagi and C. duodecimpunctata heavy on asparagus foliage at Snow Hill, Worcester County. (U. Md., Ent. Dept.). UTAH - C. asparagi and C. duodecimpunctata caused light to moderate damage in Davis County fields. (Knowlton). IDAHO - Adult damage by C. asparagi and C. duodecimpunctata little heavier this spring on roadside and ditchbank asparagus than in past few years in Canyon County. (Waters).

THRIPS - NEW JERSEY - Causing trouble in some asparagus fields; controls recommended. (Ins.-Dis. Newsltr.).

ONION MAGGOT (Hylemya antiqua) - NEW JERSEY - Survey in Cedarville area, Cumberland County, yielded 297 adults from 8 traps on May 20. Total of 195 previous week. Four traps at Great Meadows, Salem County, yielded 52 adults on May 20 and 8 on May 14. (Ins.-Dis. Newsltr.). MICHIGAN - Some adults observed; larval populations apparently low. No commercial problems reported. (Janes).

ONION ROOT MITES - NEW YORK - Continue active in several areas in Orange County. (N.Y. Wkly. Rpt., May 18).

BEEF LEAFHOPPER (Circulifer tenellus) - COLORADO - Taken May 14 in Loma, Mack and Fruita districts, Mesa County; populations light. (Bulla).

SPINACH LEAF MINER (Pegomya hyoscyami) - WASHINGTON - Eggs and larvae on sugar beets in most fields in Walla Walla and Yakima Counties; eggs abundant with some hatching noted. (Wallis).

RED-BACKED CUTWORM (Euxoa ochrogaster) - WASHINGTON - Severe damage on small sugar beet plants observed during entomology field trip probably caused by this species in Grandview, Yakima County. (Johansen).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Young nymphs and wingless adults on prickly lettuce (Lactuca serriola) along drainage canal. Only wild host colonized at Winchester, Grant County. (Powell). Apteræ and alatae appearing in small numbers in all eastern sugar beet-growing areas. (Wallis).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - High numbers noted. (Minn. Ins. Rpt.). MICHIGAN - No adults taken in sweepings May 19 in Berrien, Cass, Ingham and Livingston Counties. (Newman, Janes).

TOMATO FRUITWORM (Heliothis zea) - NEW MEXICO - Increasing numbers of eggs found in Dona Ana County lettuce fields. Numbers of adults appearing in light traps in Mesilla and Pecos Valleys increasing. (N.M. Coop. Rpt.).



- CARROT BEETLE (Bothynus gibbosus) - IDAHO - First flying adult observed in Canyon County May 19. (Waters).
- A WEEVIL (Hyperodes texana) - TEXAS - Surveys for this carrot pest negative in Zavala and Uvalde Counties. (Tapscott, Cox, Meisch).
- STRAWBERRY LEAF ROLLER (Ancylics comptana fragariae) - KANSAS - Light on strawberries in Doniphan County, northeast. (Eshbaugh, Peters). NEW JERSEY - Active on strawberries; controls recommended. (Ins.-Dis. Newsltr.). VERMONT - Reported in Charlotte, Chittenden County. (MacCollom).
- STRAWBERRY APHID (Pentatrachopus fragaefolii) - NEW JERSEY - Flight period which transmits virus disease now at peak and will remain high for next 2 weeks. Controls recommended. (Ins.-Dis. Newsltr.).
- WHITEFLIES - NEW JERSEY - Now active on strawberries; controls recommended. (Ins.-Dis. Newsltr.).
- MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Infesting strawberries at location near Blacksburg, Montgomery County. (Tarpley).
- SPITTLEBUGS - NEW YORK - Appearing on strawberries in Oswego County. (N.Y. Wkly. Rpt., May 18).
- LEAFHOPPERS - NEW JERSEY - Now active on strawberries; controls recommended. (Ins.-Dis. Newsltr.).
- VEGETABLE WEEVIL (Listroderes costirostris obliquus) - CALIFORNIA - Adults causing light damage to strawberry fruit in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).
- A SAWFLY (Empria maculata) - INDIANA - Defoliated strawberries in eastern Tippecanoe County May 14. (Dobson).
- SPIDER MITES (Tetranychus spp.) - NORTH CAROLINA - Extremely numerous on strawberries in Buncombe County. (Palmer, Robertson).
- GOLDEN TORTOISE BEETLE (Metritona bicolor) - MARYLAND - Adults causing conspicuous foliage injury to sweetpotatoes at several localities in Wicomico County. (U. Md., Ent. Dept.).
- RHUBARB CURCULIO (Lixus concavus) - OHIO - Several adults collected throughout State; severe boring damage to rhubarb observed in Pickaway County, central area. Averaged 15 punctures per stalk. (Lyon). Controls necessary in Pike County, south central area. (Fladt). Damaged rhubarb and adults observed in Meigs County, southeast. (Blakeslee). Controls necessary in Ross County, south central. (Glass).
- FLEA BEETLES - NEVADA - Heavy on seedling sugar beets in Lovelock, Pershing County; treatments underway. (Ferraro). Light, spotted infestations present in Fallon, Churchill County. (York). UTAH - Additional damage reported on very young sugar beets in Salt Lake, Box Elder and Cache Counties. (Knowlton). KANSAS - Damaging radishes, spinach and beets in Doniphan County, northeast. (Eshbaugh). NORTH DAKOTA - Trace numbers of Epitrix cucumeris in weedy areas in northwest. (Schulz). WISCONSIN - E. cucumeris overwintered adults causing noticeable injury to potato and tomato plants in home gardens in Dane County. (Wis. Ins. Sur.). MICHIGAN - Adults of unspecified species and feeding injury moderate to heavy on radishes in Lenawee County and on some potato plants in Monroe County. (Bless, Newman). NEW YORK - Flea beetles appearing on newly set plants in Westchester County. (N.Y. Wkly. Rpt., May 18). MARYLAND - Epitrix spp. continue to injure unprotected potatoes and tomatoes in all sections. Phyllotreta spp. common on cabbage, radish and mustard greens at several places

in State. Chaetocnema confinis adults abundant and causing conspicuous foliage injury to newly transplanted sweetpotatoes at several localities in Wicomico County. (U. Md., Ent. Dept.). VIRGINIA - Activity of E. cucumeris has been very light on Eastern Shore. (Hofmaster, May 19). E. hirtipennis adults active on potatoes in home garden in Pittsylvania County. (Dominick, May 15). ALABAMA - E. fuscata locally heavy in gardens on eggplants in Florala area, Covington County; some plants killed. (Stephenson).

APHIDS - NEW MEXICO - Minor problem in lettuce fields in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - Heavy, localized populations in Franklin County damaging watermelons. (Texas Coop. Rpt.). ALABAMA - Causing some damage to commercial and home garden tomatoes in Jefferson County. (Bagby, Johns).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - MINNESOTA - Infestations appear serious in South St. Paul, Dakota County. (Minn. Ins. Rpt.). ARIZONA - Light to heavy on cantaloups in Yuma County. (Ariz. Coop. Sur.).

SLUGS AND SNAILS - VERMONT - Active in home gardens. (MacCollom).

#### TOBACCO INSECTS

WIREWORMS (Conoderus spp.) - SOUTH CAROLINA - Causing concern in Berkeley County; C. vespertinus quite active in some areas of county. (May 8). Damage from unspecified species heavy in several tobacco fields in Dillon County; controls reasonably successful in Williamsburg County. (Nettles et al., May 14). NORTH CAROLINA - C. falli and C. vespertinus caused considerable injury in several Carteret and Craven County fields. Most larvae collected were C. falli but sample small. (Mount).

FLEA BEETLES - OHIO - Moderate feeding damage on tobacco seedlings in southwest area. (Lyon). SOUTH CAROLINA - Causing concern in Berkeley County. Damage in tobacco rather widespread in Dorchester County. (May 8). More numerous on tobacco plant beds than in 1963 in Dillon County; causing considerable damage to newly transplanted tobacco in Marion County. (Nettles et al., May 14). VIRGINIA - Epitrix hirtipennis adults active on newly set tobacco in Pittsylvania County. Generally light to medium. (Dominick, May 15). GEORGIA - E. hirtipennis moderate on tobacco in south central area. (Girardeau).

TOBACCO BUDWORM (Heliothis virescens) - GEORGIA - Light to heavy on tobacco in south central area. (Johnson).

A HORNWORM (Protoparce sp.) - GEORGIA - Larvae light on tobacco in south central area. (Girardeau).

A LOOPER (Trichoplusia sp.) - NORTH CAROLINA - Damaging tobacco in number of fields near Maysville, in Onslow County. (Halsey, Jones).

POTATO STALK BORER (Trichobaris trinotata) - GEORGIA - Light on tobacco in Toombs County. (Daniel).

GREEN PEACH APHID (Myzus persicae) - GEORGIA - Light on tobacco in south central area. (Johnson).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Adults still moving in from hibernation quarters in Rio Grande Valley, but reports indicate light populations. (Deer). Activity remains very light in McLennan and Falls Counties. (Cowan et al.). MISSISSIPPI - First weevil in the field not on trap plants found in delta area this week. Female collected in Leflore County field on May 21. One male removed from screen hibernation cages. (Pfrimmer et al.). TENNESSEE - Total of

48 adult overwintering weevils captured on flight screens in western area during week; number much higher than at this time in 1963. (Mullett, Locke, Thomas). SOUTH CAROLINA - Adults feeding on buds of cotton in Aiken, Dorchester, Hampton and Williamsburg Counties. (Sparks, May 19).

BOLLWORMS (Heliothis spp.) - GEORGIA - Larvae 10 per 100 terminals in field of cotton in Irwin County. (Johnson, May 19). ALABAMA - Numerous eggs and young larvae in field of 6 to 7-leaf cotton in Tallapoosa County. (McQueen).

BOLLWORM (Heliothis zea) - ARIZONA - Adults picked up in light traps in Tucson area. Small numbers of adults found in cotton fields in Pinal and Maricopa Counties. (Ariz. Coop. Sur.). TEXAS - A total of 31 larvae found on several hosts other than cotton in McLennan and Falls Counties. (Cowan et al.).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Lightly infesting wild cotton at Ft. Myers, Lee County. (Gardner, May 20). ARIZONA - The continued weather has caused an increase in moth emergence from experimental cages at Safford. On May 19, total of 51 moths emerged making a grand total of 148 moths for the week. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - A 100-acre field of 6 to 7-leaf cotton in Hale County heavily attacked by 1-2 larvae per plant. Development third to fourth instar. Controls applied. (Glass).

CUTWORMS - SOUTH CAROLINA - Destroyed 7-acre stand of cotton in Colleton County on May 8. Reported present on cotton in Calhoun, Edgefield, Greenwood and Lexington Counties. (Sparks, May 19). TEXAS - Destroyed stand of cotton in one small field and damaged stand in several fields in one area in McLennan and Falls Counties. (Cowan et al.).

COTTON APHID (Aphis gossypii) - GEORGIA - Light on cotton in south central and southwest areas. (Johnson). ALABAMA - Considerable numbers and damage to cotton in Marengo and Tuscaloosa Counties. (Jones, Holstun). TEXAS - Remains light but general on cotton in McLennan and Falls Counties. (Cowan et al.). ARIZONA - Continues light with few scattered heavy infestations in Maricopa, Pinal, Pima, Graham and Yuma Counties. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Infestations in Rio Grande Valley appear generally lighter than previous week; however, heavy infestations reported from Rio Grande City, Edinburg and Raymondville areas. (Deer). Heavy buildup occurred in untreated fields in McLennan and Falls Counties, with damaging populations present in many fields. Averaged 3.4 per 100 terminals in treated fields and 40.3 per 100 terminals in untreated fields. Overall average 19.6 per 100 terminals with a maximum of 88.0. (Cowan et al.).

A BLACK FLEAHOPPER (Spanogonicus albofasciatus) - ARIZONA - Evident in Pima, Pinal and Maricopa Counties; averaged 30 per 100 plants. (Ariz. Coop. Sur.).

A FLEA BEETLE - GEORGIA - Moderate infestation on cotton in Spalding County. (Beckham).

THRIPS - GEORGIA - Light to heavy infestation on cotton in south central and southwest areas. (Johnson). MISSOURI - Light on cotton in southeast. (Harrendorf, Jones). MISSISSIPPI - Total of 69 fields sampled in delta area; none found in 8 fields, light in 56 fields and medium in 5 fields. Average number per plant in infested fields 0.54. Movement into cotton appears to have increased sharply and many fields being treated. Majority of specimens Frankliniella fusca. (Pfrimmer et al.). TEXAS - In McLennan and Falls Counties, infestations of thrips light in 22 fields, medium in 5 and heavy in 5. (Cowan et al.). ARIZONA - Frankliniella spp. increasing in most cotton areas, particularly in untreated fields. Averaged 28 per plant in Graham County and 15-25 per plant in Pinal and Maricopa Counties. Damage to small plants evident in Stanfield and Buckeye areas. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) - IDAHO - First new attacks of season observed in decked logs at exposed site along North Fork of Clearwater River above Orofino, Clearwater County, May 16. Egg galleries 0.75 inch long, indicating attacks occurred recently. No eggs present. Adult predators, Enoclerus sphegeus (a clerid beetle) and Temnochila virescens (an ostomid beetle), also present on logs as were numerous cerambycid beetles and a weevil, Pissodes fasciatus. Phenological observations in area included ponderosa pine terminal growth 5 to 9 inches in length and flowering of serviceberry. (Furniss).

PINE ENGRAVER (Ips pini) - OHIO - Infesting twigs of pine near Cleveland, Cuyahoga County, northeast. (Buscher, Holdsworth).

PINE WEEVILS - NEW YORK - Pissodes approximatus and Magdalis sp. feeding on branches and new shoots of Scotch pine at Martville, Cayuga County, May 17. (N.Y. Wkly. Rpt.). MICHIGAN - Hylobius radicis larval infestations common on Scotch, jack and red pines in western and northern portions of Lower Peninsula; third through seventh instars found; all stages present except pupae. First egg laying observed May 11 in Newaygo County. (Wilson). FLORIDA - Cossonus corticola severely infesting bark of Pinus sp. at Fort Pierce, St. Lucie County, May 15. (Campbell).

LARCH CASEBEARER (Coleophora laricella) - IDAHO - Larvae feeding on new growth; found for first time in Moscow, Latah County. This apparently indicates a rapid southward spread of this introduced species is beginning to occur. (Schenk). WISCONSIN - Pupation underway in Dane County. Severe defoliation of larch occurred in Grant County during week ending May 15. (Wis. Ins. Sur.).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - NEW YORK - Light in 10-acre Scotch pine plantation at Martville, Cayuga County, May 17. (N.Y. Wkly. Rpt.).

PINE NEEDLE MINER (Exoteleia pinifoliella) - RHODE ISLAND - Very common on pitch pine in Kingston, Washington County. Some appear about to pupate. (Mathewson, Veilleux).

PINE TUSSOCK MOTH (Dasychira plagiata) - MINNESOTA - Larvae mostly in third stage in Pine County. Only known infested area is near Sturgeon Lake. (Minn. Ins. Rpt.).

SPRUCE NEEDLE MINER (Taniva albolineana) - COLORADO - Unusually abundant in Larimer County; pupation underway. (Thatcher). WISCONSIN - Larvae in last stage May 13 in Dane County; pupation now underway. (Wis. Ins. Sur.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - RHODE ISLAND - Eggs hatched; crawlers on needles in Kingston, Washington County. (Mathewson). NEW YORK - Crawlers present and settling on Scotch pines at Martville, Cayuga County; approximately 50 percent of overwintering eggs hatched by May 17. (N.Y. Wkly. Rpt.). VIRGINIA - Infesting pines at a location in Virginia Beach area. (Rowell, Cockrell). OHIO - Crawlers all out from under old scales in Belmont County, east central. (Ellis). INDIANA - Infesting Scotch pine plantation in Jefferson County (southeast). (Schuder). WISCONSIN - Crawlers emerged in Dane County area. Now is best time to apply controls, if warranted. (Wis. Ins. Sur.).

PINE SPITTLEBUG (Aphrophora parallela) - MINNESOTA - Spittle masses numerous and prominent on jack pine in central and east central districts again this year. No serious damage noted from heavy attacks on jack pine during 1963. (Minn. Ins. Rpt.). DELAWARE - Nymphs abundant on loblolly and Virginia pines in western Sussex County. (Burbutis).

BALSAM TWIG APHID (Mindarus abietinus) - WISCONSIN - Colonies causing distortion of needles of fir at a Dane County location. (Wis. Ins. Sur.). INDIANA - Infesting Douglas-fir in ornamental plantings in Elkhart County (northeast). (Schuder).

PINE APHIDS (Cinara spp.) - GEORGIA - C. strobi moderate on white pine in Polk County. (Stowe, May 12). WYOMING - Light infestations of Cinara sp. appearing on limber pine at Laramie, Albany County. (Fronk, Marks).

A WOOLLY LARCH APHID (Chermes strobilobius) - WISCONSIN - Populations building up in a Dane County location. (Wis. Ins. Sur.).

A GALL APHID (Chermes sp.) - NORTH DAKOTA - Becoming active on new growth on spruce; galls not yet formed. (Frye).

INTRODUCED PINE SAWFLY (Diprion similis) - MINNESOTA - Adult emergence nearly complete in central region; first-generation larvae should be appearing in 1-2 weeks. (Minn. Ins. Rpt.).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - MICHIGAN - Larval infestations scattered in southern counties; plantations with 12 or more colonies per tree reported. (Wilson, Newman, Siefert).

WHITE-PINE SAWFLY (Neodiprion pinetum) - IOWA - Adults collected on white pine Christmas tree planting at Indianola, Warren County; larvae already active. (Smart, Iowa Ins. Inf.; May 18).

A CONIFER SAWFLY (Neodiprion sp.) - MISSOURI - Pines along short windbreak in McDonald County 10-90 percent defoliated. (Houser, Thomas, Wood).

SPRUCE SPIDER MITE (Oligonychus ununguis) - NEW YORK - Eggs have been hatching for over 2 weeks in Martville area, Cayuga County; nymphal development rapid. Active on 1963 growth of Norway spruce in Chemung County. (N.Y. Wkly. Rpt.; May 18). PENNSYLVANIA - Extremely abundant on Norway spruce in Greene County; webs extending from near base to top of 30-foot tall tree and on all branches. Similar situation exists elsewhere in Greene County and in southern Washington County on ornamentals. (Udine, May 13). Heavy on Norway spruce in Bradford County. (Gesell).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - RHODE ISLAND - Larvae leaving nests in Providence County. Many complaints being made. (Mathewson, King, Buonaiuto, Veilleux. CONNECTICUT - Reported from New Haven, New Haven County, and from Storrs, Tolland County. (Savos, May 20). OHIO - Many wild cherry trees severely defoliated over State. Larvae mostly in last stage; pupation beginning. (Lyon). MICHIGAN - Tents and larval feeding general on wild cherry over Lower Peninsula. (Wilson, Newman, Lincoln). NORTH DAKOTA - Larval feeding underway on wild cherry in shelterbelt plantings in southeast area. (Brandvik).

FOREST TENT CATERPILLAR (Malacosoma disstria) - IDAHO - Egg clusters abundant on ornamental trees in Bonners Ferry area, Boundary County. Hatching began May 12. (Ingle).

TENT CATERPILLARS (Malacosoma spp.) - VERMONT - Injury reported on many ornamental and shade trees. (MacCollom, May 19). NEW YORK - Small numbers present along north shore of Long Island; more numerous along south shore areas. Larvae active in Suffolk County and in Onondaga County. (N.Y. Wkly. Rpt., May 18). WASHINGTON - Heavy on wild rose at Vancouver, Clark County. (Shanks).

SPRING CANKERWORM (Paleacrita vernata) - NEBRASKA - Stripping of foliage heavy in Gage County. (Walstrom). MICHIGAN - Larval feeding reported heavy on some ornamental trees in Flint, Genesee County, and in Lansing, Ingham County. (Ruth). CONNECTICUT - One second-stage larva found at Storrs, Tolland County. (Savos).

CANKERWORMS - NORTH DAKOTA - Moderate to heavy larval feeding on elm, boxelder and other shade and fruit trees underway in eastern areas. (Frye). MINNESOTA - Larvae in middle stages of development and beginning to consume large amounts of foliage. Control still warranted; thorough application to entire tree essential to good control. (Minn. Ins. Rpt.). IOWA - Feeding becoming evident in southern third of State in unsprayed communities. Infestation light in east central area; 20-25 percent of leaves show 25-30 percent loss of leaf surface. (Iowa Ins. Inf., May 18). NEW JERSEY - Numerous throughout State. (Ins.-Dis. Newsltr.). NEW YORK - Small numbers present in northern shore areas of Long Island; active in Suffolk County. (N.Y. Wkly. Rpt., May 18). CONNECTICUT - Second-stage larvae active in New Haven. Appear to be much less abundant than in 1963. (Savos, May 20). RHODE ISLAND - Observed in Kingston (Washington County), Warwick (Kent County), and in Lincoln and Cranston (Providence County). No record of widespread, general infestation, however. (Mathewson, Buonaiuto, Veilleux, D'Andrea).

LEAF ROLLERS - NEW JERSEY - Numerous throughout State; especially active on pin oak. (Ins.-Dis. Newsltr.). NORTH DAKOTA - Archips rosaceanus larvae rolling leaves of wild cherry in southeast area. (Frye). IDAHO - Spotted infestations of what is probably Archips rosaceanus found on private hedges at Nampa, Canyon County. Larvae abundant where found. (Bechtolt). NEVADA - Early-stage larvae of Choristoneura zapulata infesting several ornamental shrubs in Reno, Washoe County. (Bechtel, Lauderdale).

GYPSY MOTH (Porthetria dispar) - VERMONT - Exceptionally heavy in North Burlington, Chittenden County. (MacCollom, May 19). CONNECTICUT - Larvae reported at Bantam, Litchfield County, and from New Haven, New Haven County. (Savos, May 20).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - UTAH - Larvae damaged elm foliage near Ogden, Weber County. (Knowlton). CALIFORNIA - Larvae heavy locally on Chinese elms in Livermore, Alameda County. Infestations quite common this spring. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ARIZONA - Larvae found on elms in several areas of Phoenix, Maricopa County. (Ariz. Coop. Sur.). NEVADA - Eggs present in Lovelock, Pershing County, and in southern Washoe County. (Bechtel, Ferraro). OKLAHOMA - Extensive defoliation occurring throughout State; chemical controls initiated. (Okla. Coop. Sur.). MISSOURI - First-stage larvae heavy on elms in southwest area. (Houser, Thomas, Wood). ALABAMA - Appearing in quite heavy numbers and in widespread areas of Chilton County and other central area counties on elms. (Helms). VIRGINIA - Larvae infesting elms at location in Richmond. Egg masses present. (Tarpley, Andrews). RHODE ISLAND - Adults moving out on leaves statewide. (Mathewson, Veilleux).

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) - RHODE ISLAND - Observed in Lincoln, Providence County. Probably active statewide. (Veilleux). OHIO - Larvae and adults present on 2 large weeping willow trees in Ross County; 25-30 percent of leaves skeletonized. (Walker, Lyon).

LEAF BEETLES - ALABAMA - Trirhabda bacharidis quite heavy on groundsel-tree (Baccharis halimifolia) in Mobile County. (Seibels). FLORIDA - Eurypepla jamaicensis severe on Geiger-tree (Cordia sebestena) at Key Largo, Monroe County, May 8. (Brown).

BRONZE BIRCH BORER (Agrilus anxius) - MARYLAND - This species and Neoclytus acuminatus (red-headed ash borer) emerging in West Gate area of Montgomery County; numerous paper birch trees along streets infested with A. anxius with a number reported killed. N. acuminatus observed emerging from cut birch logs. (Hambleton).

WOOLLY ALDER APHID (Prociphilus tessellatus) - GEORGIA - Heavy on maple in Fayette County. (Dupree).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - UTAH - Damaging lilac, willow and poplars on home lots at Logan, Cache County. (Knowlton). COLORADO - Eggs near hatching in Larimer County; crawlers expected within 7-10 days. (Thatcher, Jenkins). CONNECTICUT - Overwintering eggs should be hatching within next 1-2 weeks. (Savos).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - OKLAHOMA - Crawlers heavy on elm trees in Stillwater area, Payne County. (Okla. Coop. Sur.).

BIRCH LEAF MINER (Fenusa pusilla) - VERMONT - Activity prevalent. (MacCollom, May 19). MASSACHUSETTS - Eggs hatched; larvae mining leaves. (Wave). CONNECTICUT - All eggs probably hatched. (Savos). NEW JERSEY - Active and quite heavy in central counties. (Ins.-Dis. Newsltr.). PENNSYLVANIA - Heavy on birch in Greene County; larvae about full grown. (Udine).

ERIOPHYID MITES - RHODE ISLAND - An undetermined species common on needle bundles of pitch pine in West Kingston, Washington County. New galls formed by Vasates quadripedes appearing on cut-leaf maple statewide. Pouch galls, probably formed by Eriophyes padi, very common on leaves of wild cherry in Kingston, Washington County, and in Johnston, Providence County. (Mathewson, Kerr). PENNSYLVANIA - V. quadripedes heavy on some maples in Crawford and Fayette Counties. (Adams, Udine). Galls of an unspecified species severe on buds on one side of an ash tree in Fayette County (May 13), and a pocket-gall forming species heavy on leaves of butternut in Washington County (May 20). (Udine). NORTH CAROLINA - E. padi probable species causing galls on wild black cherry in Buncombe County. (Baker, Mount). OHIO - An unspecified species ranged moderate to heavy on hemlock near Oroville, Wayne County. Needles have rusty and bleached appearance. (Reigelman, Walker). WISCONSIN - Galls formed by unspecified species deformed leaves of Prunus spp. in Dane County. (Wis. Ins. Sur.). WYOMING - New galls being formed on cottonwood trees at Laramie, Albany County, by what is probably Aceria parapopuli. Infestations ranged light to extremely heavy. (Fronk, Marks). CALIFORNIA - Adults of Aceria camelliae heavy on camellia buds locally in San Diego, San Diego County. (Cal. Coop. Rpt.).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - RHODE ISLAND - Pupae dug in nursery at North Smithfield, Providence County. Single adult collected in Lincoln, Providence County; unusually early for adults. (Veilleux, Mathewson). INDIANA - Pupation 87.5 percent complete in Lake County (northwest) on May 20. (Schuder).

A NOCTUID MOTH (Xanthopastis timais) - SOUTH CAROLINA - Larvae damaging amaryllis in Bamberg, Bamberg County. (Nettles et al., May 19). ARKANSAS - Collected from jonquil foliage in Union County (south central). (Ark. Ins. Sur.).

A SEAGRAPE BORER (Hexeris enhydris) - FLORIDA - Moderate on stem of Coccoloba uvifera at Merritt Island, Brevard County, May 12. (Levan).

APHIDS - DELAWARE - Aphis spiraeicola very common on new growth of spirea in areas of New Castle County. (Burbutis). NORTH DAKOTA - Unspecified species active on foliage of crab apple, elm and wild cherry in Fargo area, Cass County. (Frye). OKLAHOMA - Several species continue to infest ornamental plants throughout State. (Okla. Coop. Sur.). UTAH - Anuraphis viburnicola curling leaves at Providence, Cache County, and a North Ogden, Weber County. (Hanson, Knowlton). Periphyllus negundinis becoming numerous in Ogden and Huntsville areas of Weber County, and Macrosiphum euphorbiae infesting roses at Ogden. (Knowlton). ARIZONA - Aphis nerii heavy on oleanders in Yuma area of Yuma County. Lachnus salignus infesting willows in Glendale area of Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - Lachnus salignus adults heavy on willows in Millbrae, San Mateo County. Anuraphis tulipae and Macrosiphum rosae nymphs and adults heavy on iris in Sacramento, Sacramento County. (Cal. Coop. Rpt.).



PSYLLIDS - RHODE ISLAND - Nymphs of undetermined species very common on foliage of swamp maple in East Greenwich, Kent County; leaves cupped with marginal necrosis. (Mathewson). NEW JERSEY - Psylla buxi active on boxwood. (Ins.-Dis. Newsltr.). FLORIDA - Trioza magnoliae severe on leaves of Persea borbonia (redbay) at Gainesville, Alachua County, (May 21), and at Wilma, Liberty County, (May 14). (Mead). COLORADO - Pachypsylla celtidismamma populations higher than in 1963; mating and egg deposition underway. Pachypsylla celtidisgemma nymphs in fourth stage. (Thatcher).

COCCIDS - PENNSYLVANIA - Aspidiotus juglansregiae damaging 10-foot high Ilex opaca in Feasterville, Bucks County, May 9; immatures half developed. (Simons). Chionaspis corni hatched on dogwood about May 3-4 in Centre County; now beginning to settle. (Udine, May 11). VIRGINIA - Chrysomphalis tenebricosus very severe on silver maples at a location in Hopewell, Prince George County; killing twigs and rather large branches. Overwintering adults present. Pest occurs more or less generally on maples in area. (Willey, May 12). NORTH CAROLINA - Lecanium sp. heavy on oak at a location in Duplin County; crawlers emerging. (Garris, Mount). FLORIDA - Lepidosaphes dentata infested leaves of Viburnum pubescens at Gainesville, Alachua County, November 19, 1963. This determined as a new host record in March 1964 by Erdman West, from material submitted at that time. (Graham, Fla. Coop. Sur.). Pinnaspis aspidistrae severe on leaves of Rhapis excelsa at Opa Locka, Dade County, May 13. (Hickman, Brown). Ischnaspis longirostris severe and general on leaves of Monstera deliciosa and moderate on Chamaedorea elegans at Miami, Dade County. (Knowles, MacFarlin; May 14, 12). Diaspis boisduvalii moderate to severe on orchid at Titusville, Brevard County. (Levan, May 11). TEXAS - Coccus hesperidum light locally on various ornamentals in Denton County; causing concern to residents. Eggs hatched about mid-May. (Turney). NEVADA - Gossyparia spuria crawlers active in Lovelock and Oreana, Pershing County. (Ferraro, Martinelli). CALIFORNIA - Aspidiotus britannicus medium on boxwood nursery stock in nursery at Auburn, Placer County. (Cal. Coop. Rpt.).

GREENHOUSE ORTHEZIA (Orthezia insignis) - FLORIDA - General and moderate on stems and leaves of Viola sp. at Miami, Dade County, May 14. (Knowles).

NATIVE HOLLY LEAF MINER (Phytomyza illicicola) - SOUTH CAROLINA - Most cassena and yaupon leaves affected have now fallen; emergence apparently complete. Sprays to protect for next season should be applied now. (Nettles et al.). PENNSYLVANIA - Pupae in Ilex opaca at Manadahill, Dauphin County, on May 13 probably this species. (Simons).

SPIDER MITES - WYOMING - Light infestations of Tetranychus spp. noted on juniper and spruce at Laramie, Albany County. (Fronk, Marks). NORTH DAKOTA - Tetranychus telarius active on spruce, phlox and other ornamentals. (Frye). IOWA - Spider mite numbers increasing on evergreens. (Iowa Ins. Inf., May 18). NEW YORK - Oligonychus ilicis eggs hatching for over 2 weeks; nymphal development rapid. (N.Y. Wkly. Rpt., May 18). FLORIDA - Oligonychus perditus general on stems and leaves of Thuja sp. at Eagle Lake, Polk County, May 6. (Norton). Schizotetranychus asparagi moderate on leaves of Asparagus plumosus at De Land, Volusia County, May 6. (Roberts).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - UTAH - Troublesome at Clearfield, Davis County, and at Richmond, Cache County. (Davis, Knowlton). Troublesome in Willard-Corinne area of Box Elder County and causing some annoyance at Mendon and from Logan to Trenton in Cache County. (Knowlton). NORTH DAKOTA - Becoming bothersome to man in southeast; Aedes spencerii dominant species. (Noetzel). MINNESOTA - Total of 1,552 larval samples taken in Metropolitan Mosquito Control District during week ending May 16; Aedes vexans present in 60 percent of samples; Aedes spp., probably vexans, in 24 percent; Culiseta inornata in 33 percent; and Aedes cinereus in 5 percent. Total of 20 species determined. Sixteen light traps

now in operation; during week ending May 16, total of 231 females taken, of which 131 were Culiseta inornata, 31 Culex restuans, 30 Culex spp., 8 Aedes vexans and 3 A. dorsalis. First significant emergence of A. vexans occurred May 17. St. Croix, Minnesota and Mississippi Rivers crested during weekend of May 17; last hatch resulting from high water will emerge about May 24. (Minn. Ins. Rpt.). MICHIGAN - Adults of unspecified species recently annoying near low-lying swampy areas in several Lower Peninsula counties; blacklight trap catches have increased. (Newman, Davids, Siefert). ILLINOIS - Unspecified species reported abundant in several areas of State. (Ill. Ins. Rpt.). RHODE ISLAND - Complaints concerning unspecified species increasing statewide. (Mathewson, King, Veilleux). FLORIDA - Following species taken in 10-minute interval (7:05-7:15 p.m.) biting man on evening of May 17 at Gainesville, Alachua County: Psorophora ferox, P. howardi, P. ciliata, Aedes canadensis, A. infirmatus, A. vexans and A. atlanticus/tormentor. (Mead).

FACE FLY (Musca autumnalis) - WISCONSIN - Reportedly numerous in Rock County. (Wis. Ins. Sur.). ILLINOIS - Varied 0-2 per face in Piatt County. (Ill. Ins. Rpt.). INDIANA - Adults averaged 6 per face on cattle in Greene County, southwest. Averaged less than 1 per face on cattle in Newton and Lake Counties, northwest. (Bram). KANSAS - Occasional specimens noted on cattle in northeast and east central areas. (Peters).

HOUSE FLY (Musca domestica) - OKLAHOMA - Populations increased considerably, with up to 7-10 per Scudder grid in Stillwater area, Payne County. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Continues low, with fewer than 2 per head on animals in Stillwater area, Payne County. (Okla. Coop. Sur.). WISCONSIN - Few appearing in La Crosse County. (Wis. Ins. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Populations increased in localized areas; counts per head averaged 1,000 on yearling steers, 800 on mature cows and up to 3,000 on bulls. (Okla. Coop. Sur.). KANSAS - Ranged from 25 to over 100 per animal on cattle in northeast and east central areas. (Peters). ILLINOIS - Counts per animal ranged 25-50 in Piatt County and 35-200 in Hancock County. (Ill. Ins. Rpt.). INDIANA - Adults ranged 100-150 per animal on cattle in Greene County (southwest), and 10-100 per animal on cattle in Newton and Lake Counties (northwest). (Bram).

TABANIDS - WISCONSIN - Unspecified deer flies annoying in Green County. (Wis. Ins. Sur.). GEORGIA - An unspecified deer fly heavy at 4-H Club center in Putnam County. (Beckham). FLORIDA - Diachlorus ferrugatus biting man at Gainesville, Alachua County. (Mead, Hetrick).

BLACK FLIES - VERMONT - Populations annoying; expected to continue so next few weeks. (MacCollom, May 19). MICHIGAN - Annoying populations reported in Presque Isle, Genesee and Ottawa Counties. (Sieting, Sharp).

BITING MIDGES (Culicoides spp.) - DELAWARE - Very abundant and annoying in an area of eastern Kent County. (Burbutis).

AMERICAN DOG TICK (Dermacentor variabilis) - OKLAHOMA - Populations continue high in Stillwater area, Payne County. (Okla. Coop. Sur.). NEBRASKA - Continues to be reported as bothersome around residences and to pets and children in Lancaster County. (Bergman). NORTH DAKOTA - Continues to be reported infesting pets. (Frye). WISCONSIN - Unusually high populations persisting in many northern counties. Control efforts and particularly repellents may be warranted in wooded areas. (Wis. Ins. Sur.).

ROCKY MOUNTAIN WOOD TICK (Dermacentor andersoni) - UTAH - Present on humans in brushy areas near Huntsville, Weber County. (Knowlton).

LONE STAR TICK (Amblyomma americanum) - FLORIDA - Attaching to man as opportunity affords at Torreya State Park, Liberty County, May 13. (Mead).

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

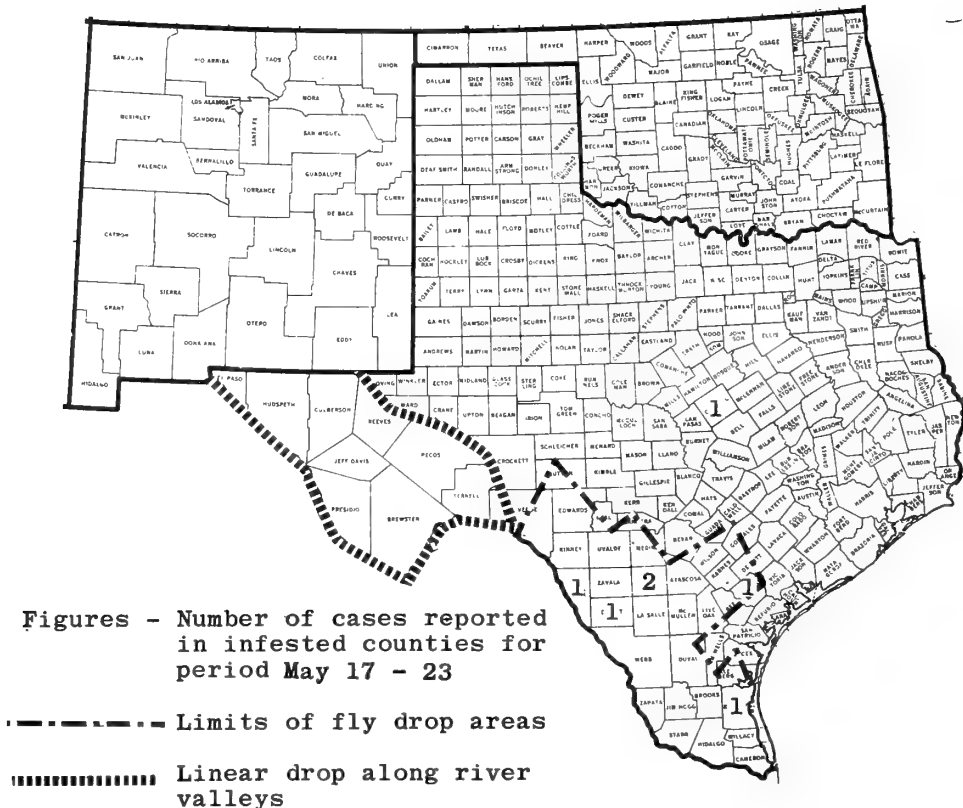
During period May 17-23, a total of 7 screw-worm cases was reported from TEXAS. First screw-worm cases of this year were reported from Coryell, Dimmit and Frio Counties. Other counties reporting screw-worm cases were Kenedy (1), Goliad (1) and Maverick (1). The Republic of Mexico reported 36 screw-worm cases from the States of Sonora (18), Chihuahua (1), Coahuila (1), Nuevo Leon (2), Tamaulipas (12) and San Luis Potosi (2). A total of 94,414,050 sterile screw-worm flies was released: 31,540,250 in Texas, 492,000 in New Mexico and 62,381,800 in Mexico. The following is a comparison of specimens reported during corresponding weeks in 1962 and 1963:

Year	Positive Cases		Negative Cases*		Ratio of Cases Positive to Negative**	
	Current	Cumulative	Current	Cumulative	Current	Cumulative
1962	1,694	7,918	139	1,402	1,318:1,000	5,647:1,000
1963	127	1,017	268	3,025	473:1,000	336:1,000
1964	7	64	211	3,061	33:1,000	21:1,000

\* The number of cases not screw-worm is an index of the efficiency of the reporting system.

\*\* A comparison of the ratios of screw-worm cases to cases that are not screw-worm is an index of the change in numbers of screw-worm cases.

(Anim. Dis. Erad. Div.).



HOUSEHOLD AND STRUCTURAL INSECTS

LARDER BEETLE (Dermestes lardarius) - INDIANA - Unusually heavy numbers reported throughout State in homes. (Lehker).

BLACK CARPET BEETLE (Attagenus piceus) - MARYLAND - Adults and larvae present in homes in Carrollton, Prince Georges County, and Baltimore. (U. Md., Ent. Dept.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - PENNSYLVANIA - Infested flour in home in Lancaster County. (Gesell). VIRGINIA - Adults causing nuisance in home in Spotsylvania County. (Tarpley, Kash).

RICE WEEVIL (Sitophilus oryzae) - PENNSYLVANIA - Infested new home in Westmoreland County. (Udine).

MOTH FLIES - TEXAS - Heavy infestation in home in Hamilton County. (Deer). MARYLAND - Adults of Telmatoscopus albipunctatus appeared in numbers out of drains in homes in Rockville, Montgomery County, and at Baltimore. (U. Md., Ent. Dept.).

ORIENTAL COCKROACH (Blatta orientalis) - MARYLAND - Infesting homes at Baltimore and at Silver Spring, Montgomery County. (U. Md., Ent. Dept.). PENNSYLVANIA - Numerous in basement and attached garage at home in Greene County. (Udine). CALIFORNIA - Heavy infestation in building in Volta, Merced County. (Cal. Coop. Rpt.).

PAVEMENT ANT (Tetramorium caespitum) - MARYLAND - Winged forms appeared in homes in Montgomery and Prince Geroges Counties. (U. Md., Ent. Dept.).

FIRE ANT (Solenopsis geminata) - ARIZONA - Troublesome in homes in Yuma area, Yuma County. (Ariz. Coop. Sur.).

CLOVER MITE (Bryobia praetiosa) - CONNECTICUT - Continues plaguing many homeowners; controls recommended. (Savos, May 23). NEW JERSEY - Continues troublesome household pest. (Ins.-Dis. Newsltr.). NORTH CAROLINA - Reported over home and walks in Sampson County. (Heath, Robertson). IOWA - Continues annoying. (Iowa. Ins. Inf., May 13). UTAH - Entering homes at Ogden and Huntsville areas of Weber County. (Knowlton).

SUBTERRANEAN TERMITES (Reticulitermes spp.) - MICHIGAN - Winged adults emerging in southern area. (Janes). OHIO - R. flavipes activity high this season on military bases. Severely damaged 63,000 square-foot building at Fairborn, Greene County, southeast; loss estimated at \$40,000. (Adams). NEW JERSEY - R. flavipes swarmers continue to provide bulk of household pest problems. (Ins.-Dis. Newsltr.). RHODE ISLAND - R. flavipes alates collected in East Greenwich, Kent County, and in Cumberland, Providence County; swarming generally subsided. (Mathewson).

A POWDER-POST BEETLE (Lyctus cavicollis) - CALIFORNIA - Heavy infestation in wood cabinets in home in Oakland, Alameda County. (Cal. Coop. Rpt.).

CARPENTER BEE (Xylocopa virginica) - RHODE ISLAND - Heavy in rustic house in Hope Valley, Washington County. (Mathewson). MARYLAND - Adults active around porches of homes in Silver Spring, Montgomery County, and at Baltimore. (U.Md., Ent. Dept.). SOUTH CAROLINA - First report of season noted in Clemson area; damaging woodwork in home May 16. (Nettles).

CARPENTER ANTS (Camponotus spp.) - CONNECTICUT - Continue appearing in large numbers; controls recommended. (Savos, May 23). IDAHO - C. herculeanus emerging winged forms moderately abundant during past week in areas around Moscow and Nez Perce. (Manis).

A XIPHYDRIID WOOD BORER - RHODE ISLAND - Adults in home in Providence, Providence County, probably associated with fireplace logs. (Buonaluto, Mathewson).

### BENEFICIAL INSECTS

LADY BEETLES - CONNECTICUT - Eggs hatched; larvae active. (Savos). NEW YORK - Anatis quindecimpunctata, Chilocorus stigma and Coccinella transversoguttata noted on Scotch pines infested with pine needle scale (Phenacaspis pinifoliae) at Martville, Cayuga County. (N.Y. Wkly. Rpt., May 18). ALABAMA - Brachyacantha ursina recently observed as very heavy and apparently feeding on aphids on pecan tree in Barbour County. (McQueen). ARKANSAS - Adults & larvae mostly Hippodamia convergens, numerous in small grain and alfalfa in northwest. (Ark. Ins. Sur.). INDIANA - Adults of Coleomegilla maculata ranged 1-3 per 10 sweeps on alfalfa in Greene County (southwest) and 0-2 per 10 sweeps on same crop in Newton, Porter and La Porte Counties (northwest). H. convergens adults ranged 1-3 per 10 sweeps on alfalfa and red clover in Greene County. (Bram). IOWA - Unspecified species averaged 1 per 10 sweeps in central area. (Iowa Ins. Inf., May 18). WISCONSIN - Larvae and adults of unspecified species numerous in few alfalfa and grain fields. Larvae averaged approximately 3 per sweep in 1 field of alfalfa being observed in Brodhead area, Green County. H. convergens adults averaged approximately 4 per 10 sweeps in more heavily infested field of oats examined for greenbug (Schizaphis graminum) in Trempealeau area, Trempealeau County. (Wis. Ins. Sur.). NORTH DAKOTA - Trace numbers of H. convergens and Adalia bipunctata observed in southeast area alfalfa. (Frye). NEBRASKA - Hippodamia sp. adults averaged 30 per 100 sweeps on alfalfa in Saunders County. (Calkins, Jarvis). Adults ranged 8-20 per 10 sweeps in legumes and oats in Cedar and Knox Counties. (Bergman). KANSAS - Several species continue numerous in eastern area of State. (Peters). WYOMING - Adults of unspecified species averaged 20 per 100 sweeps in alfalfa and small grain in Fremont County. (Marks). UTAH - Unspecified species increasing in numbers in northern area alfalfa. (Knowlton). NEVADA - Various species varied 1-4 per sweep in southern Washoe County alfalfa fields. (Cooney). WASHINGTON - Several species, mostly H. convergens and C. transversoguttata, ranged 2-26 per 10 sweeps in alfalfa at Yakima and vicinity, Yakima County, where pea aphid (Acyrtosiphon pisum) is damaging alfalfa. (Featherstone, Halfhill).

LACEWINGS - INDIANA - Chrysopa oculata adults averaged 2 per 10 sweeps in alfalfa and red clover in Greene County (southwest), and less than 1 per 10 sweeps on alfalfa in northwest section of State. C. carnea adults reached maximum numbers of 2 per 100 sweeps on alfalfa in northwest and southwest sections. (Bram). ARKANSAS - Chrysopa spp. averaged 16 per 100 sweeps in one field of alfalfa in Washington County. (Ark. Ins. Sur.). KANSAS - Unspecified species remain plentiful in eastern area. (Peters). NEBRASKA - Chrysopa sp. averaged 2 adults and 2 larvae per 100 sweeps on alfalfa in Saunders County. (Jarvis, Calkins). UTAH - Adults of unspecified species increasing in northern area alfalfa. (Knowlton).

DAMSEL BUGS - IOWA - Averaged 1 per 10 sweeps in east central area. (Iowa Ins. Inf., May 18). KANSAS - Continue to be plentiful in eastern part of State. (Peters). NEBRASKA - Nabis sp. averaged 26 per 10 sweeps on alfalfa in Saunders County. (Jarvis, Calkins). UTAH - Unspecified species increasingly numerous in northern area alfalfa. (Knowlton).

FLOWER BUGS (Orius spp.) - NEBRASKA - Averaged 2 per 10 sweeps on Saunders County alfalfa. (Jarvis, Calkins).

CHINESE MANTIS (Tenodera aridifolia sinensis) - NORTH CAROLINA - Egg masses noted at location in Duplin County. (Wray).

SYRPHID FLIES - UTAH - Larval numbers increasing in alfalfa in northern portion of State. (Knowlton).

HONEY BEE (Apis mellifera) - WISCONSIN - Colonies overwintered well and broods being produced. Colonies building up somewhat faster in southern areas than in northern areas; however, conditions excellent in these northern areas. (Wis. Ins. Sur.). UTAH - Mortality rather heavy in some Cache County yards. (Nye, Nielsen, Knowlton).

A LEAFCUTTING BEE (Osmia sp.) - IDAHO - Adults emerging from alfalfa leafcutting-bee straws and boards in Twin Falls and Canyon Counties. (Gibson, Waters).

AN ICHNEUMON (Bathyplectes curculionis) - COLORADO - Adults and parasitized larvae of alfalfa weevil (Hypera postica) reported from eastern and western slope counties. (Bulla, Jenkins).

#### MISCELLANEOUS INSECTS

A CUBAN MAY BEETLE (Phyllophaga bruneri) - FLORIDA - Taken at several locations in Miami, Dade County. (Brown, May 12-13). Infested leaves of following new hosts: Turks-cap (Malvaviscus sp.), pigeonberry (Duranta repens), floss silk tree (Chorisia speciosa) and Brazilian peppertree (Schinus terebinthifolia). (Fla. Coop. Sur.). Moderate to severe in same area on leaves of Delonix regia, Citrus sinensis, Hibiscus rosa-sinensis and Kigelia pinnata. (Brown, May 13).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - First adult of season trapped May 13 at New Hanover County Airport. (Rosier). VIRGINIA - First adult of season observed on roses May 19 in Norfolk. (Sims).

FALSE POTATO BEETLE (Leptinotarsa juncta) - ALABAMA - Adults feeding on weeds in rye locally in Coffee County. (Stephenson).

A WEEVIL (Trachyphloeus bifoveolatus) - WASHINGTON - Numerous on foliage and invading buildings between Tacoma and Seattle, King County. (Baker, Howell).

BLACK CUTWORM (Agrotis ipsilon) - INDIANA - Late instars (up to 1.5-inch long) active in sod in Clay County, west central. (Gould).

WHITE-LINED SPHINX (Celerio lineata) - UTAH - Numerous in blacklight traps at Logan, Cache County. (Davis).

A MARCH FLY (Scatopse sp.) - ARIZONA - Heavy population found in Phoenix, Maricopa County. (Ariz. Coop. Sur.).

#### INTERCEPTIONS

HUMAN BOT FLY (Dermatobia hominis) - WISCONSIN - Second-stage larva taken from dog in Door County. Dog had been in South America for a period of time. Tentative determination by H. J. Griffiths. (Wis. Ins. Sur.).





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SUPERIOR COURT  
IN AND FOR THE COUNTY OF SACRAMENTO  
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