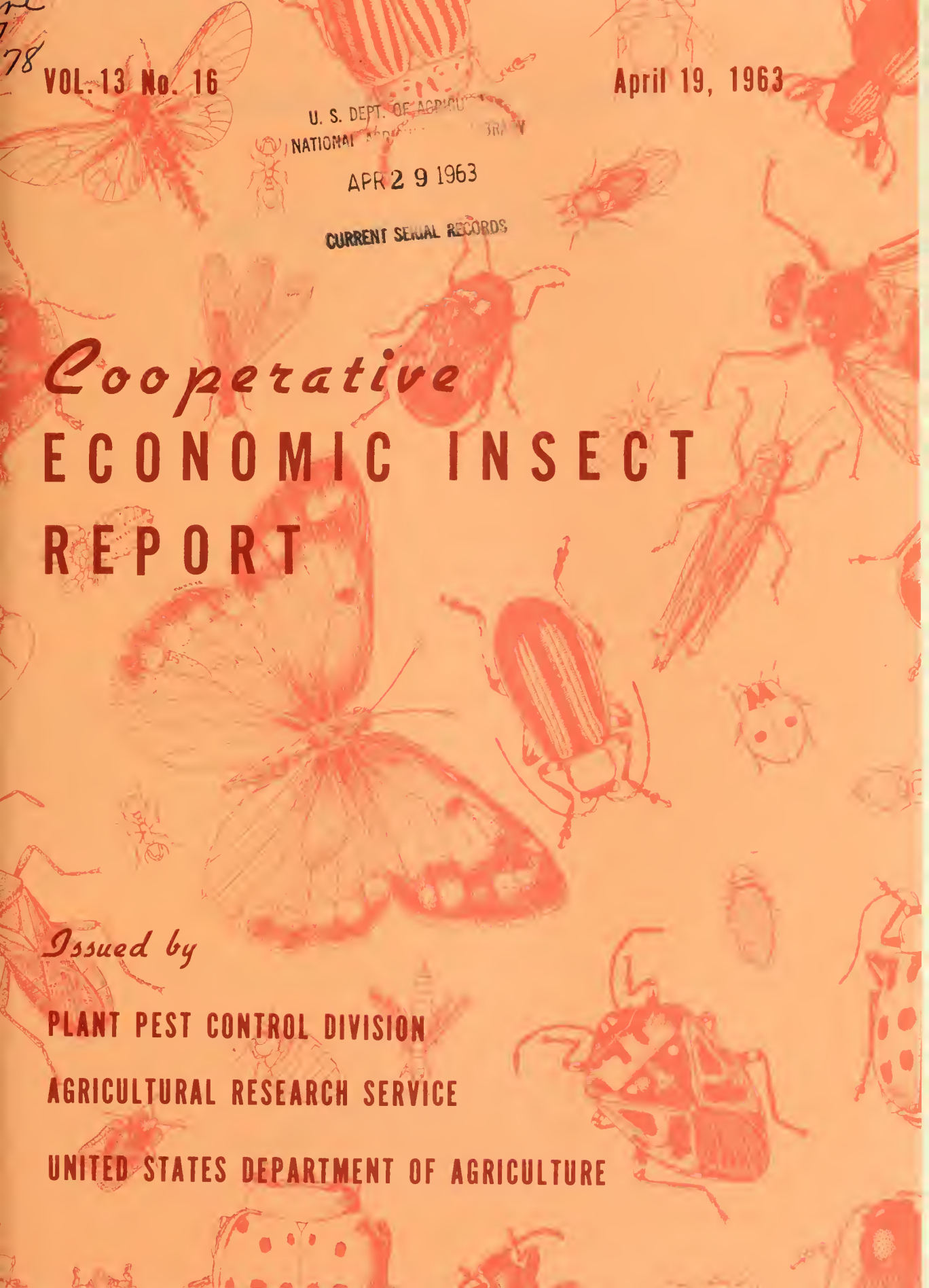


Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



78

VOL. 13 No. 16

April 19, 1963

U. S. DEPT. OF AGRICULTURE
NATIONAL LIBRARY OF MEDICINE

APR 29 1963

CURRENT SERIAL RECORDS

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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

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

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

ALFALFA WEEVIL damage reported in Delaware, Virginia, North Carolina and Colorado; adults active in Idaho, Utah, Wyoming, Ohio and Maryland. (pp. 389, 408). CLOVER HEAD WEEVIL numbers higher than normal on crimson clover in Arkansas. PEA APHID generally heavy on alfalfa in areas of Oklahoma; controls applied. Numbers increasing rapidly throughout Arkansas and populations light to heavy in southwest Missouri, with some controls being applied in both States. (p. 389). SPOTTED ALFALFA APHID heavy locally in Oklahoma. (p. 390). CORN LEAF APHID very heavy on barley in several Arizona counties, and heavy populations of LEAFHOPPERS continue present on barley in some areas of three Oklahoma counties. (p. 392). BROWN WHEAT MITE building up where extremely dry conditions exist in Oklahoma, and damaging grain and seedling alfalfa in Pahrump Valley of Nevada. (pp. 392-393).

EASTERN TENT CATERPILLAR causing light to heavy damage to peach and plum trees in Hays and Blanco Counties, Texas, and heavy on wild plum and fruit trees throughout Oklahoma. (p. 393).

CHICKEN BODY LOUSE moderate to heavy on most farm flocks in southeastern Ohio. LONE STAR TICK heavy and causing considerable concern in eastern Oklahoma. (p. 404).

FORECASTS

LESSER PEACH TREE BORER and ORIENTAL FRUIT MOTH may be a problem to peach growers in Indiana because of the winter injury to trees and lessened control application. (p. 393). LINDEN LOOPER, FALL CANKERWORM and SPRING CANKERWORM expected to be heavy this year in Connecticut. (pp. 394, 400).

SOME FIRST APPEARANCE RECORDS

PEA APHID in Delaware; LESSER CLOVER LEAF WEEVIL adults in Maryland; MEADOW SPITTLEBUG nymphs in Ohio and Illinois; GREEN CLOVERWORM in Oklahoma; SIX-SPOTTED LEAFHOPPER in Wisconsin; GRASSHOPPER nymphs in Kansas and Oklahoma; MORMON CRICKET emergence in Oregon; APPLE APHID hatching in Maryland, Connecticut, Pennsylvania and Michigan; and ROSY APPLE APHID in New York, Connecticut, Pennsylvania, Delaware and Maryland; EUROPEAN RED MITE eggs hatching in Delaware and Indiana; a FILBERT APHID (*Myzocallis coryli*) observed in Oregon; IMPORTED CABBAGEWORM adults in Lee County, Alabama; PINK BOLLWORM moths in cages in Arizona; NANTUCKET PINE TIP MOTH adults in Maryland; EASTERN TENT CATERPILLAR hatching in Connecticut and Pennsylvania, and small nests observed in Illinois; TABANID FLIES in southeastern Oklahoma; FACE FLY adults in Massachusetts; AMERICAN DOG TICK in Delaware and Maryland; LADY BEETLES in several States; and DAMSEL BUGS in Idaho and Illinois.

DETECTION

SOUTHWESTERN CORN BORER found for first time in Illinois. (p. 391). SMALLER EUROPEAN ELM BARK BEETLE collected in Union County, South Dakota, for first time. (p. 400).

SPECIAL REPORTS

European Corn Borer Survival Surveys (partial reports). (p. 391).

Citrus Insect Situation in Florida - End of March. (p. 395).

(Continued on following page)

Quarterly Insect and Mite Outlook in Florida - April through June. (p. 396).

Potato Psyllid Survey, Spring Breeding Areas of Texas and Southeastern New Mexico. (p. 397).

Beet Leafhopper Survey, Texas and New Mexico (p. 398), Kansas (p. 398).

Winter Survey for Asparagus Beetles in New Jersey. (p. 398).

Boll Weevil Survival Survey in McNairy County, Tennessee. (p. 399).

Status of the Screw-worm in the Southwest. (p. 403).

Interceptions of Special Interest at U. S. Ports of Entry. (p.409).

Summary of Insect Conditions in the United States - 1962

Beneficial Insects - (p. 410).

Miscellaneous Insects - (p. 415).

Survey Methods for Survey Entomologists (Corn Earworm Damage Survey). (p. 420).

CORRECTIONS

See page 406.

ADDITIONAL NOTES

See page 408.

Reports in this issue are for week ending April 12, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK MID-APRIL TO MID-MAY 1963

The Weather Bureau's 30-day outlook for the period mid-April to mid-May calls for temperatures to average above seasonal normals over the eastern two-thirds of the Nation except for near normal in New England and the northern Plains. Most unseasonable warmth is expected in States bordering the lower Mississippi Valley. On the other hand, below normal averages are predicted for areas west of the Continental Divide. Precipitation is expected to exceed normal over all areas west of the Divide and from the northern Plains eastward to the Great Lakes. Subnormal amounts are in prospect for the southeast quarter of the Nation and in coastal areas of the Northeast. In unspecified areas, about normal precipitation is indicated.

WEATHER OF THE WEEK ENDING APRIL 15

Dry, sunny weather prevailed during most of the week from the Rocky Mountains to the Atlantic coast. The week was rather windy in the Northeast, and record-breaking heat was experienced in Texas. In the Far West, there was considerable cloudiness and recurring showers. Temperatures averaged below normal in northern areas east of the Mississippi River by as much as 8° at Columbus, Ohio, and Charleston, West Virginia. In the Northeast, the dry, sunny, windy weather, with unusually low relative humidity caused rapid drying, thus creating a high fire hazard. Forest fires were reported in Pennsylvania, and numerous grass and brush fires in New York State. An extreme fire hazard existed in New England where many acres of woodland were burned, and grass and brush fires were counted in the hundreds. More than 500 grass and woods fires occurred on Friday and Saturday in Massachusetts alone. In Texas, maximum temperatures ranged in the 90's during the first part of the week, and exceeded 100° in the lower Rio Grande Valley, with a high of 107° at Laredo on the 9th. A high of 100° was also recorded at Frederick, Oklahoma, on the 8th. During the weekend, high temperatures ranged in the (continued on page 408)

CEREAL AND FORAGE INSECTS

ALFALFA WEEVIL (Hypera postica) - OHIO - Adults 2 per 100 sweeps in old alfalfa field near Darwin, Meigs County. (Treece, Lyon). DELAWARE - First and second instars becoming more noticeable in untreated alfalfa; adults averaged one per 10 sweeps in New Castle County field during daytime. Egg counts increased to 309 per 100 old-attached stalks in one New Castle County field, with approximately one-half of eggs observed hatching on April 8. (Burbutis). MARYLAND - Numerous adults, apparently from spring flights, found on beach at Maryland Beach, Worcester County, April 2. (U. Md., Ent. Dept.). VIRGINIA - Larvae present in several alfalfa fields checked throughout Roanoke County; some fields treated during fall of 1962, some not treated. (Allen, Apr. 3). Larvae ranged 12-300 per 100 sweeps (average 117) in several fields checked in Franklin, Pittsylvania and Bedford Counties. Most larvae in second and third stages in Franklin County; first and second stages in other fields. Larvae and adults noted in all fields checked; adults ranged 1-20 per 100 sweeps (average 6). (Tarpley, Apr. 3,4). NORTH CAROLINA - Larvae averaged 12.3 per square-foot pan count in 7 alfalfa fields and 47.8 per square-foot pan count in 3 fields in small area near Wake Forest, Wake and Franklin Counties. Most, if not all, fields treated too late in fall of 1962; damage quite noticeable. Most larvae in second and third stage. (Campbell, Mount). GEORGIA - Larvae 75-90 per sweep on two untreated fields of alfalfa in northwest. Control in fields treated previous fall excellent. (Johnson). ALABAMA - Numerous in isolated fields in Lee and Autauga Counties. (Buttram). COLORADO - Larvae and damage observed on alfalfa in Fremont County. Damage appearing on alfalfa in Logan County. Controls being completed in Mesa County where adults have been active since March 1. (Hantsbarger, Jenkins, Bulla). WYOMING - Adults averaged less than one per square foot in new growth alfalfa in Albany County. (Fullerton). UTAH - Adults active and winter survival apparently high in Cache, Box Elder and Weber Counties. Large acreage treated in central and northern areas. (Knowlton). IDAHO - Few adults found. Becoming active in alfalfa in Clearwater River area. (Halfhill).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - ALABAMA - Feeding moderate to heavy on crimson clover and burclover in Lee, Elmore and Autauga Counties; 5-10 per sweep. (Buttram). ILLINOIS - Adults range 0-10 and averaged 0.5 per 100 sweeps in east-southeast districts. (Ill. Ins. Rpt.). MARYLAND - Numerous adults found April 2 on beach at Maryland Beach, Worcester County; apparently from spring flights. (U. Md., Ent. Dept.).

CLOVER LEAF WEEVIL (Hypera punctata) - NEBRASKA - Larvae moderately feeding on alfalfa and clover in eastern area; considerable damage in some fields. (Bergman). ILLINOIS - Larvae ranged 0-12 per square foot (averaged 5.2) in extreme southern area April 1-4; 0-18 (averaged 7.5) in east southeast district April 8-9. (Ill. Ins. Rpt.). WISCONSIN - Eggs hatching in alfalfa in Walworth County. (Wis. Ins. Sur.).

CLOVER HEAD WEEVIL (Hypera meles) - ARKANSAS - Numbers in crimson clover higher than normal for time of year. Up to 150 per 100 sweeps collected in southern area. No larvae found. Copulation quite common. (Ark. Ins. Sur.). ALABAMA - Numerous on crimson clover in Lee and Autauga Counties. (Buttram).

CLOVER ROOT CURCULIO (Sitona hispidula) - ILLINOIS - Adults ranged 0-10 and averaged 2 per 100 sweeps in east-southeast district. (Ill. Ins. Rpt.).

A WEEVIL (Sitona scissifrons) - NEBRASKA - Adults low in number in Howard County alfalfa. (Calkins, Stevens).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - ILLINOIS - Ranged 0-10 and averaged 0.5 per 100 sweeps in east-southeast district. (Ill. Ins. Rpt.).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Appearing on alfalfa in Graham County. (Ariz. Coop. Sur.). OKLAHOMA - Generally heavy populations present in alfalfa in east central, south central, southwest, west central and central areas of State, with only light populations noted in Greer County, southwest. Heavy infestations

causing honeydew on foliage and controls being undertaken in most areas; counts up to 5,000 per 10 sweeps. (Okla. Coop. Sur.). ARKANSAS - Numbers increased rapidly throughout State; counts in some areas so high that only estimates made. Highest numbers observed in Conway County, central area; counts 200 plus per sweep of 15-inch net. Approximately one cup full collected in 20-30 sweeps. Numbers in Miller County (southwest) alfalfa somewhat lower, but high. Few counts in alfalfa in this area showed 100 plus per stem. Some alfalfa acreage in Miller County being treated. Number in crimson clover in western and southern areas varies widely from low to high; winged forms present in most fields. (Ark. Ins. Sur.). MISSOURI - Ranged light to heavy on alfalfa and clover in southwest; counts 2-35 per sweep in alfalfa. Some controls being applied. (Munson, Thomas, Wood). ILLINOIS - Ranged 0-8,000 (averaged 1,541) per 100 sweeps in extreme southern area April 1-4, and ranged 0-140 (averaged 13.5) per 100 sweeps in east-southeast district April 8-9 on clover and alfalfa. (Ill. Ins. Rpt.). WISCONSIN - Eggs hatched in southeast; highest count 7 per 50 sweeps on sloping alfalfafield having pronounced southern exposure. (Wis. Ins. Sur.). OHIO - Averaged 10 per 50 sweeps in field of alfalfa in Athens County; predominantly adult stem mothers. (Lyon). MARYLAND - Averaged 31 per sweep on alfalfa at Wesley, Worcester County. (U. Md., Ent. Dept.). DELAWARE - First of season noted on April 8; counts averaged 7 per 10 sweeps on alfalfa in New Castle County. (Burbutis). VIRGINIA - Small numbers appearing in some Roanoke County alfalfa. (Allen, Apr. 3). Very light to light in all fields checked in Franklin, Pittsylvania and Bedford Counties; ranged 40-8,000 per 100 sweeps (average 2,000). (Tarpley, Apr. 7).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Light in southwest, with only occasional winged forms noted in west central area (fewer than 15 per 10 sweeps). Heavy in field in Carter County; 4,000 per 10 sweeps. (Reported heaviest infestation seen in this area in 3 years). Heavy populations also reported in Garvin County; controls applied to reduce populations. Light in Garfield County field. (Okla. Coop. Sur., Apr. 13). Generally light in southern part of State; counts 6 per 10 sweeps in southeast and 25-50 per square foot of crown in Tillman County, southwest. (Okla. Coop. Sur., Apr. 6). ARKANSAS - Collected only in Miller County, southwest; counts 75-125 per 100 sweeps of 5-inch net. (Ark. Ins. Sur.). NEBRASKA - Counts averaged 2-4 per 10 sweeps of first to fourth instars on alfalfa 5 inches high in Howard County. (Calkins, Stevens).

YELLOW CLOVER APHID (Therioaphis trifolii) - ILLINOIS - Ranged 0-20 (averaged 4) per 100 sweeps in extreme southern area April 1-4, and ranged 0-80 (averaged 13.6) per 100 sweeps in east-southeast district April 8-9. (Ill. Ins. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Common in most alfalfa checked; counts ranged 2-6 per 10 sweeps in central, west central, southwest and south central areas. (Okla. Coop. Sur.). ARKANSAS - Numbers rather low in legumes; counts 20-30 per 100 sweeps. Reproduction underway, with second and third instars present. (Ark. Ins. Sur.). ALABAMA - Adults and nymphs found feeding on vetch and clover in Lee County; 2-5 per sweep in vetch, clover and grain-clover mixtures. (McQueen). ILLINOIS - Adults ranged 0-20 (averaged 9) per 100 sweeps in extreme southern area April 1-4, and ranged 0-30 (averaged 4) per 100 sweeps in east-southeast district April 8-9. (Ill. Ins. Rpt.). OHIO - Moderate to heavy populations in red clover forage fields at Marietta, Washington County. (Blair, Lyon). PENNSYLVANIA - Present on alfalfa in southeast. (Menusan). DELAWARE - Adults averaged one per 10 sweeps on alfalfa in New Castle County. (Burbutis).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Few adults noted feeding on crimson clover, vetch and white clover in Lee County. (McQueen).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Overwintering eggs hatching April 9 in red clover-wheatstubble field near New Philadelphia, Tuscarawas County. Eggs averaged 8-14 per mass, with 1-2 eggs hatched from each mass. First instars moving to red clover plants. (Treece, Lyon). ILLINOIS - Nymphs range 0-1 and averaged 0.05 per 100 stems in east-southeast district. (Ill. Ins. Rpt.).

BROWN STINK BUG (Euschistus servus) - ALABAMA - Few taken from vetch and crimson clover in pecan orchard in Lee County. (Guyton, McQueen).

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Few specimens taken from vetch in peach orchard in Lee County. (McQueen).

ALFALFA CATERPILLAR (Colias eurytheme) - ARKANSAS - Eggs and various size larvae present in alfalfa and crimson clover. (Ark. Ins. Sur.). ILLINOIS - Larvae ranged 0-10 (averaged 1) per 100 sweeps in alfalfa in extreme southern area April 1-4, and ranged 0-10 (averaged 0.5) per 100 sweeps in east-southeast district April 8-9. (Ill. Ins. Rpt.).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - First activity noted on alfalfa in Marshall County, south central, week ending April 6. Counts light, fewer than 1 per 10 sweeps, in alfalfa in Love and Murray Counties, south central, and light adult activity noted in scattered areas of southwest and west central areas week of April 13. (Okla. Coop. Sur.). ARKANSAS - Continues active; eggs and various size larvae present in alfalfa and crimson clover. (Ark. Ins. Sur.). ALABAMA - Counts 2-5 per sweep on crimson clover and vetch in Lee County. (McQueen).

A SPIDER MITE (Tetranychus sp.) - NEVADA - Economic populations damaging alfalfa in Pahrump Valley, Nye County. (Zoller).

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH DAKOTA - Winter mortality survey completed in two districts. Average percent mortality 24.2 in east central district and 17.5 in southeast. (Spawn, Hintz). MINNESOTA - Overwintering mortality survey started; mortality averaged 24 percent in southeast district and 28 percent in south central district. The 10-year State average is 23 percent mortality. (Minn. Ins. Rpt.). ILLINOIS - Percent survival averaged 67.3 in west district, 70 in west-southwest district, 76 in east-southeast district and 58 in northern counties. (Ill. Ins. Rpt.). MISSOURI - Spring survival survey in southeast area showed 53.3 percent mortality. (Keaster).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ILLINOIS - Larva found March 29, 1963, near Urbandale, Alexander County, in old corn stalk by J. Bigger and H. B. Petty. Confirmed by D. M. Weisman. This is the first record for the State. Additional larva found April 2 in same field in Alexander County. Other surveys negative although suspicious looking stalk girdling found in some instances. (Ill. Ins. Rpt.). MISSOURI - Total of 7 live larvae found in 4 fields checked in southwest area; survival slightly less than 2 percent. (Munson, Thomas, Wood).

FALL ARMYWORM (Laphygma frugiperda) - FLORIDA - Infesting sweet corn at Belle Glade, Palm Beach County, on April 4. (Smith).

CORN EARWORM (Heliothis zea) - ARKANSAS - Extensive surveys in western and southern areas failed to detect any larvae; egg deposition and larval development expected momentarily. (Ark. Ins. Sur.). FLORIDA - This species and Spodoptera exigua light to moderate on 9-20 acres of corn at Iona and Estero, Lee County, on April 3. (Walsh, Shirah).

ARMY CUTWORM (Chorizagrotis auxiliaris) - NEBRASKA - Damaging populations reported from Lincoln, Dawson and Hayes Counties on alfalfa. (Pruess). COLORADO - Trace numbers of larvae, 0-2 per linear foot of drill row, found in wheat and barley in Logan, Phillips, Yuma, Kit Carson and Washington Counties. (Jenkins). OKLAHOMA - Larval feeding activity ceased throughout most of west central, northwest and panhandle areas. (Okla. Coop. Sur., Apr. 6).

BRONZED CUTWORM (Nephelodes emmedonia) - ILLINOIS - Larvae varied 0-70 (averaged 26.7) per 100 sweeps in bluegrass in east-southeast district. (Ill. Ins. Rpt.).

GREENBUG (Schizaphis graminum) - OKLAHOMA - Generally noneconomic to light throughout State, with some isolated threatening infestations. Some controls applied in Kingfisher County area where counts ranged from fewer than 10 per foot to 50-75 per foot. Some treatments also reported from southern Caddo County and Stephens County. Except for these isolated buildups, noneconomic to light (up to 50 per foot) infestations noted in fields checked in Caddo, Kiowa, Jackson (one field up to 100 per foot), Greer, Washita, Canadian, Blaine and Garfield Counties. Counts of 35 per foot noted in Sequoyah County, south central. Isolated treatments reported in Kiowa County (west central) and Bryan County (south central) areas week ending April 6. (Okla. Coop. Sur.). MISSOURI - Light to moderate in southwest; counts ranged 0-13 per foot of drill row. Observed in wheat, barley and spring seeded oats. (Munson, Thomas, Wood). GEORGIA - Heavy on oats in Wilkes County. (Carter, Apr. 1).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Only light populations observed and reported throughout State; 90 percent of aphids on upper portion of wheat plants in Caddo County this species. (Okla. Coop. Sur.). NEBRASKA - Counts less than one per 10 sweeps in southern, central and eastern areas on wheat. (Bergman). WISCONSIN - Alates present in grain fields in Rock County; occasional nymph present. (Wis. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Infestations very heavy on barley in Maricopa, Pinal, Pima, Graham and Greenlee Counties. (Ariz. Coop. Sur.). TEXAS - Moderate, localized infestations, probably this species, appearing on grain sorghum in Calhoun County. (Texas Coop. Rpt.; Bales). OKLAHOMA - Light on some small grains in Choctaw County. Some activity starting on Johnson grass in area. (Okla. Coop. Sur., Apr. 6).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Highest counts (light, up to 100 per foot) made in irrigated field in Jackson County. Present only in fields with thick growth at base of plants. Nonexistent or very light in other fields checked throughout State. (Okla. Coop. Sur.).

APHIDS - GEORGIA - Unspecified species heavy on Berrien County barley. (Johnson, Apr. 3). FLORIDA - Rhopalosiphum rufiabdominalis moderately infesting 10 acres of corn at Iona, Lee County, on March 20. (Walsh, Shirah).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Females swept from field of more advanced grain near East Troy, Walworth County. Females first found on April 27 during 1962 season in that area of State. (Wis. Ins. Sur.).

LEAFHOPPERS - OKLAHOMA - Heavy populations of unidentified species continue in barley in some areas of Carter and Bryan Counties, with some treatments applied in Bryan County. Heavy counts also reported from Garfield County in barley. (Okla. Coop. Sur.).

HESSIAN FLY (Phytophaga destructor) - NEBRASKA - Light to moderate infestations, 1 to 20 percent, present in southern and central area wheat fields. No adult emergence noted. (Bergman). KANSAS - Examination of 2 fields of wheat on April 9 in Riley County, northeast, showed adult emergence and egg laying were continuing. Damp weather hindered survey, but apparently peak emergence had not occurred. (Peters).

WIREWORMS - NORTH CAROLINA - Larvae found in Perquimans County field being plowed. Four larvae Conoderus lividus, one Melanotus communis and 2 undetermined. Field in corn in 1962. (Mount). OHIO - Ctenicera cylindriciformis adults 5 per 100 sweeps in field of alfalfa in Meigs County; found at terminal tips of plants. (Triplehorn, Lyon).

BROWN WHEAT MITE (Petrobia latens) - OKLAHOMA - Infestations common in western half of State, with heavy counts observed in Grandfield area of Tillman County and in Comanche County, southwest. (Heavy rains in southwest have reduced populations to a low level; not considered a problem at present). Light to

medium infestations observed in west central area, light in northwest and light to moderate in panhandle areas. Extremely dry conditions exist in panhandle and, with continued warm, dry weather, populations could buildup to damaging proportions. (Okla. Coop. Sur., Apr. 6). Generally light infestations exist in all fields checked in central, west central, southwest and northwest areas. An infestation of 1,000-1,500 observed in field in El Reno area, with some damage evident. Moderate infestation reported from Cimarron County, panhandle area. (Okla. Coop. Sur., Apr. 13). COLORADO - Trace numbers, 0-10 per linear foot of drill row, found in wheat and barley in Logan, Phillips, Yuma, Kit Carson and Washington Counties. Populations of economic importance reported present on wheat in Kiowa County. (Jenkins, Whitmore). Economic numbers present on alfalfa in Fremont County. (Hantsbarger). NEVADA - Damaging grain and seedling alfalfa in Pahrump Valley, Nye County. (Zoller).

GRASSHOPPERS - KANSAS - A nymph collected in field of alfalfa in Clark County, southwest, on March 27 determined as Arphia pseudorietana by J. H. L. Bell; somewhat early for this species. (Peters). In favored locations in extreme southwest, especially in Seward, Stevens, Morton, Grant and Haskell Counties, first and second instars of Melanoplus bivittatus, and more often M. sanguinipes found. Counts ranged 1 or 2 per square foot and, in best locations (south exposure and down in ditch in trash), counts at times were up to 5-6 per square foot in the Hill sampler. (Fitchett, DePew). OKLAHOMA - First instars of unidentified species light in Carter County; first report of the season. (Okla. Coop. Sur., Apr. 6).

MORMON CRICKET (Anabrus simplex) - OREGON - Emergence well along in canyon bottoms of northern Sherman and Gilliam Counties. Crickets locally abundant in protected canyons, ranging 12-15 per square yard. First and second instars probably present March 27. Counts will probably decrease due to weather kill. Acreage figures not yet available. (Jackson).

FRUIT INSECTS

EASTERN TENT CATERPILLAR (Malacosoma americanum) - TEXAS - Widespread populations in Hays and Blanco Counties causing light to heavy damage to peach and plum trees. (Texas Coop. Rpt.; Massey). OKLAHOMA - Heavy on wild plum and fruit trees throughout State. (Okla. Coop. Sur., Apr. 6). KANSAS - Few scattered nests observed on fruit trees and ornamental plum in Riley County (northeast). (Gates, Thompson). CONNECTICUT - Hatching at New Haven. (Savos).

CODLING MOTH (Carpocapsa pomonella) - INDIANA - Pupation advancing very rapidly in Vincennes area, Knox County; overwintering larvae on tree trunks 50 percent pupated, April 9. (Redfern).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Egg masses present in Vincennes area, Knox County; no hatch evident by April 9. (Redfern). PENNSYLVANIA - No eggs present on apple in south central area; no adults found. (Pepper).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Pupated in Vincennes area, Knox County. Could be very serious this season due to winter injury of trees and lessened control application. (Redfern, Apr. 9).

PEACH TREE BORER (Sanninoidea exitiosa) - ALABAMA - Larvae ranged 1-2 per plum tree in Lee County; larvae three-fourths inch long. (McQueen).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Twig injury may be worse on peach in Vincennes area, Knox County, as there is no fruit for young larvae to enter. Orchards should be watched for twig injury and corrective measures taken where warranted. (Redfern, Apr. 9).

SPRING CANKERWORM (Paleacrita vernata) - OKLAHOMA - Heavy population damaging growth on apple trees in Stillwater area, Payne County. (Okla. Coop. Sur., Apr. 6). CONNECTICUT - Adults flying for about 2 weeks; growers can expect heavy larval infestations soon. (Savos, Apr. 13). NEW YORK - Male flights observed March 25 in Huntington-Farmingdale area of Long Island. (Waller, N. Y. Wkly. Rpt., Apr. 9).

PLUM CURCULIO (Conotrachelus nenuphar) - ALABAMA - Numerous feeding and egg-laying scars noted in Lee County orchard. No adults taken; 1-20 plums affected per 6-year-old tree. (McQueen). INDIANA - No bumping records to be taken this year in Vincennes area, Knox County, as there will be no peach crop. During 5-year study of large scale grower blocks, this pest has consistently caused highest percent of damaged fruit at harvest. (Redfern, Apr. 9).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Injurious numbers appearing on peach trees in Graham County. (Ariz. Coop. Sur.). COLORADO - Overwintering eggs range light to medium on Mesa County peach trees; 50-90 percent egg mortality may be due to low temperatures of previous winter. (Bulla). UTAH - Hatched on peach trees at North Salt Lake, Davis County. (Knowlton).

APPLE APHID (Aphis pomi) - CONNECTICUT - Hatching underway in New Haven and Storrs areas. Indications are that populations should be lighter this season. (Savos). PENNSYLVANIA - Abundant on apple in south central area. (Pepper). MARYLAND - Hatching on apple at Hancock, Washington County, April 5. (U. Md., Ent. Dept.). MICHIGAN - Nymphs present on apple varieties in green-tip stage near Lansing, Ingham County, April 7. (Dowdy).

ROSY APPLE APHID (Anuraphis rosae) - CONNECTICUT - Hatching in Storrs area. (Savos). NEW YORK - Present in Niagara County April 14. (N. Y. Wkly. Rpt.). PENNSYLVANIA - Hatching on apple in south central area. (Pepper). DELAWARE - Eggs have hatched in Sussex County. (Kelsey). MARYLAND - Hatching on apple at Hancock, Washington County, April 5. (U. Md., Ent. Dept.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - NEW YORK - Present in Niagara County April 8. (N. Y. Wkly. Rpt.). PENNSYLVANIA - Abundant on apple in south central area. (Pepper). MICHIGAN - Nymphs on early apple varieties in Lansing area, Ingham County; first reported from Berrien County April 1. (Dowdy, Apr. 9).

BLACK CHERRY APHID (Myzus cerasi) - NEW YORK - Present in Niagara County April 12. (N. Y. Wkly. Rpt.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - COLORADO - Numerous on apple in Fremont County. (Hantsbarger).

TARNISHED PLANT BUG (Lygus lineolaris) - INDIANA - Adults easily found on cover crops in orchards and surrounding field vegetation in Vincennes area, Knox County. (Redfern, Apr. 9). OHIO - Adults moderate to heavy on apple tree buds at Marietta, Washington County. Continuously flying throughout orchard. (Blair, Lyon). PENNSYLVANIA - Present on fruit in southeast area. (Menusan).

LYGUS BUGS (Lygus spp.) - UTAH - Lygus spp., mostly L. elisus, active in orchards in Brigham City-Willard area, Box Elder County, and North Ogden area, Weber County; common in Davis County orchards. (Knowlton).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - FLORIDA - Severe on 100 persimmon trees at Glen Saint Mary, Baker County (March 29). (Fla. Coop. Sur.).

PEAR PSYLLA (Psylla pyricola) - CONNECTICUT - Adults still present at Storrs. Egg laying considerably reduced; no eggs laid earlier in month hatched as yet. Eggs observed in Mt. Carmel area. (Savos).

EUROPEAN RED MITE (Panonychus ulmi) - NEW JERSEY - High numbers of overwintering eggs observed in several orchards; none hatched as of April 9. (Ins.-Dis. Newsltr.). NEW YORK - Eggs not numerous on trees in Columbia County. (N. Y. Wkly. Rpt.). CONNECTICUT - Eggs still dormant; no nymphs observed. (Savos). DELAWARE - Eggs hatched in Sussex County. (Kelsey). PENNSYLVANIA - Has not hatched on apple in south central area. (Pepper). INDIANA - Egg hatch began about April 8 in Vincennes area, Knox County. (Redfern).

A FRUIT-TREE MITE (Bryobia rubrioculus) - COLORADO - Hatching on peach and pear in Mesa County; no heavy populations noted. (Bulla). UTAH - Eggs very numerous in home orchards at Perry, Box Elder County. (Knowlton).

PECAN NUT CASEBEARER (Acrobasis caryae) - ARKANSAS - About one percent of twigs infested in orchard observed in Miller County (southwest). (Ark. Ins. Sur.).

PECAN BUD MOTH (Gretchena bolliana) - GEORGIA - Larvae, probably this species, heavy locally on pecans in Houston County. (Allmond, Apr. 2).

A CURCULIONID (Conotrachelus aratus) - FLORIDA - Moderate on 60 pecan trees at Montcello, Jefferson County (Apr. 5). (Fla. Coop. Sur.).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Light to medium in Mobile, Baldwin, Lee and Autauga Counties; ranged 1-10 per fruiting branch. (McQueen).

A FILBERT APHID (Myzocallis coryli) - OREGON - First of season observed in Benton County April 10. (Jones).

OBSCURE SCALE (Chrysomphalus obscurus) - OKLAHOMA - Heavy on pecans in Tulsa County area. (Okla. Coop. Sur., Apr. 6).

A XYELID (Megaxyela langstoni) - TEXAS - Moderate, local population causing leaf damage to pecan trees in De Witt County. (Deer).

A SAWFLY - ALABAMA - Larvae of undetermined species attacking pecan foliage in Mobile and Lee Counties. (Seibels, Buttram).

Citrus Insect Situation in Florida - End of March

Special Comment - Dieback observed in approximately 70 percent of December defoliated groves. Further dieback expected in many of these groves. In warmer areas, partial recovery from cold damage evident by end of March. Defoliated groves still have very low infestations of insects and mites, whereas undamaged groves harbor populations not greatly different from those of year ago.

Populations in Freeze-defoliated Groves (Canopy entirely 1963 leaves) - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 25 percent of groves; 6 percent economic. Little increase expected. Infestations will be heavier where frozen fruit remained on trees. TEXAS CITRUS MITE (Eutetranychus banksi) infested 5 percent of groves; none economic. Gradual buildup forecast for April. CITRUS RED MITE (Panonychus citri) infested 9 percent of groves; none economic. Slight increase likely. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) infested 2 percent of groves; none economic. No important infestations forecast. APHIDS infested 35 percent of groves; none economic. Infestation will be light. WHITEFLY adults laying eggs on new foliage in 10 percent of groves. Young stages of PURPLE SCALE (Lepidosaphes beckii), GLOVER SCALE (L. gloverii) and CHAFF SCALE (Parlatoria pergandii) appearing on new leaves in 5-11 percent of groves. Few infestations expected to become important before June. BLACK SCALE (Saissetia oleae) and FLORIDA RED SCALE (Chrysomphalus aonidum) will be rare.

Populations in Groves with Little or No Freeze Damage - CITRUS RUST MITE infested 50 percent of groves; 26 percent economic. Populations dropped to slightly below normal and will remain near this current moderate level in April. Highest

districts are ridge, Indian River and west coast. TEXAS CITRUS MITE infested 43 percent of groves; 24 percent economic. Population is above average. Although most infestations are light, they will gradually become heavier during April. Highest district is ridge. CITRUS RED MITE infested 29 percent of groves; 12 percent economic. Population near low level of March 1962 and little change is expected. Few groves will develop important infestations. SIX-SPOTTED MITE infested 2 percent of groves; none economic. Population will remain very low and unimportant. WHITEFLIES unusually abundant in most groves. Adults and eggs will be heavy on new leaves in April. APHID populations are declining. PURPLE SCALE infested 80 percent of groves; 2 percent economic. Population below average. Increasing numbers of young forms will appear, but parasite attack expected to keep most infestations from becoming important. CHAFF SCALE infested 82 percent of groves; none economic. GLOVER SCALE infested 84 percent of groves; none economic. Population above average. Although most populations light at present time, few groves will develop heavy populations. FLORIDA RED SCALE infested 18 percent of groves; none economic. Population very low; little increase expected. BLACK SCALE infested 13 percent of groves; 4 percent economic. Population near average low level for March. Spring brood of crawlers will appear about mid-April. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

Quarterly Citrus Insect and Mite Outlook in Florida - April through June

In Freeze-damaged Groves - TEXAS CITRUS MITE, CITRUS RED MITE, CITRUS RUST MITE and WHITEFLIES will gradually increase from very low levels now present. Few heavy infestations expected before June. SCALE INSECTS will remain at low level.

In Undamaged Groves - CITRUS RUST MITE will remain below normal abundance until June, then increase. About 30 percent of groves will develop injurious infestations. TEXAS CITRUS MITE will increase rapidly in May and reach a peak above normal level in June. SIX-SPOTTED MITE will be below average and of little importance. CITRUS RED MITE will show little increase until May; then increase to a June peak below average level. PURPLE SCALE, GLOVER SCALE and CHAFF SCALE will be present as light infestations in a majority of groves. Populations will be similar to a year ago with about 10 percent of groves harboring moderate to heavy infestations by end of June. BLACK SCALE and FLORIDA RED SCALE will be much below average. YELLOW SCALE (*Aonidiella citrina*) will be more common. A few infestations may become important. WHITEFLY populations will be high; MEALYBUG populations low. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Appearing on navel oranges in Chandler Heights and Mesa areas, Maricopa County; also present in Yuma area. Controls in progress in some orchards. (Ariz. Coop. Sur.).

KATYDIDS - ARIZONA - Unspecified species injuring oranges in Mesa area, Maricopa County. (Ariz. Coop. Sur.).

CITRUS RUST MITE (*Phyllocoptruta oleivora*) - FLORIDA - This species and *Aculus pelekassi* light on 3,000 *Citrus sinensis* at Wauchula, Hardee County (Apr. 2). (Fla. Coop. Sur.).

GRAPE FLEA BEETLE (*Altica chalybea*) - ALABAMA - One to 5 adults and few larvae per grapevine feeding on buds and leaves in Lee County. (McQueen).

LEAFHOPPERS (*Erythroneura* spp.) - ARIZONA - Increasing on grapes; chemical and biological controls being applied. (Ariz. Coop. Sur.).

A CUTWORM - CALIFORNIA - Larvae, either *Euxoa* sp. or *Chorizagrotis* sp., causing considerable damage to new buds on grapevines in vineyards interplanted with barley in Salinas area, Monterey County. (N. McCalley, Ext. Serv.).

TRUCK CROP INSECTS

MELON APHID (Aphis gossypii) - TEXAS - Light to heavy on watermelon, squash, cantaloup and cucumber in Zavala County. Populations highest on watermelon; over 500 per plant. (Harding).

THRIPS - TEXAS - Frankliniella occidentalis averaged 39 per plant on untreated plots in Zavala County. (Harding). Unspecified species caused moderate, local damage to drought-weakened onions in Jim Wells County. (Texas Coop. Rpt.; Jones). ALABAMA - Undetermined species feeding on turnips, pecans, vetch, grass and crimson clover in Lee and Lowndes Counties; averaged 5 per foot of row on turnips. (McQueen).

A LEAF MINER FLY (Liriomyza sp.) - TEXAS - Heavy damage, warranting controls, occurring on beans, cantaloups, watermelons, squash, cucumbers and tomatoes in Zavala County. (Harding).

POTATO PSYLLID (Paratrioza cockerelli) - ARIZONA - Continues a problem in Maricopa County. (Ariz. Coop. Sur.).

Potato Psyllid Survey, Spring Breeding Areas of Texas and Southeastern New Mexico - The 1963 potato psyllid (Paratrioza cockerelli) survey was completed on March 29. Wild Lycium was in good condition in all areas of the survey and a large percent was fully leafed out in most areas. It was more abundant than usual in the El Paso Valley. Although potato psyllid populations were higher at all locations this year, they did not appear to be present in alarming numbers. Eggs were noticed at all locations but were sparse and scattered. It appears that reproduction has been retarded again this year. (PPC and cooperating agencies).

Potato Psyllid Survey on Overwintering Hosts

Average Number Per 100 Sweeps

<u>State</u>	<u>District</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Texas	Big Spring (Howard Co.)	128	16	21
Texas	San Angelo (Tom Green Co.)	160	15	33
Texas	Del Rio (Val Verde & Kinney Counties)	27	2	26
Texas	Marathon-Sanderson (Terrel, Pecos, Brewster Counties)	35	6	29
Texas	El Paso (El Paso & Hudspeth Counties)	6	2	23
New Mexico	Las Cruces (Dona Ana County)	7	.67	23

.....

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Continues injurious to potatoes in Maricopa County. (Ariz. Coop. Sur.).

A SYMPHYLAN - OHIO - Unspecified species found near tomato roots in a Hamilton County greenhouse. No control program has been in effect. (Holdsworth).

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Numerous adults noted in flight and few larvae on turnips and young green crops in Lee County. (McQueen).

STRIPED FLEA BEETLE (Phyllotreta striolata) - ALABAMA - Adults ranged 2-5 per foot of row; feeding on turnips and tender green crops in Lee County. (McQueen).

CABBAGE CURCULIO (Ceutorhynchus rapae) - IDAHO - Few overwintered adults collected in alfalfa in Clearwater River area. (Halfhill).

Beet Leafhopper Survey, Texas and New Mexico - The beet leafhopper (Circulifer tenellus) survey was begun March 4 and completed March 20, 1963. A total of 3,322 miles was traveled in Texas and 700 in New Mexico. Nine counties were surveyed in New Mexico and 48 in Texas, with 31 stops being made in New Mexico and 101 in Texas. Host plants were present at 90 percent of the stops in Texas and 77 percent of stops in New Mexico. The number of beet leafhoppers per 100 square feet was 8.6 in Texas and 6.7 in New Mexico. Populations were heavier along the entire survey route in Texas. The largest concentration of beet leafhoppers in Texas was in the Crystal City-El Paso-Monahans area, where 83 percent of the total number of beet leafhoppers on the Texas survey was found. Curly top virus was approximately 5 percent in experimental spinach plots at Crystal City, which is higher than the one percent for 1962. Populations in New Mexico were higher than in 1962, but there were no shifts in population locations. (PPC and cooperating agencies).

Beet Leafhopper Survey, Kansas - The beet leafhopper (C. tenellus) survey was conducted April 2-4, with 36 stops made in 15 southwestern counties. Beet leafhoppers were found at 3 stops in 3 different counties, as follows: Hugoton, Stevens County - 2 nymphs; Rola, Morton County - 6 nymphs, 1 adult; Ulysses, Grant County - 1 nymph. Preferred host plants were present at all but 2 stops; at one stop there was a good stand of kochia, an early summer host. In area of greatest interest (extreme south and southwest) hosts were usually good. This is the first time beet leafhopper has been found in the Kansas survey. The significance of this occurrence is not quite clear. (PPC and cooperating agencies).

ASPARAGUS BEETLES (Crioceris spp.) - NEW JERSEY - Winter survey in Cumberland, Salem, Gloucester, Atlantic, Camden and Burlington Counties shows overwintering populations of C. asparagi and C. duodecimpunctata considerably higher than those present in 1962. Results of survey indicate that high beetle populations will be present in fields early in 1963 season and that treatments will be necessary. Averages for the 6 counties during the past 7 years are given below:

	<u>Average No. of Beetles per 100 Stalks per Field</u>						
	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
<u>C. asparagi</u>	53.3	4.1	27.8	3.7	30.9	1.7	29.6
<u>C. duodecim-</u> <u>punctata</u>	3.8	0.4	0.2	0.0	0.7	0.0	1.4

(Ins.-Dis. Newsltr., Apr. 9).

STRAWBERRY WEEVIL (Anthonomus signatus) - NEW JERSEY - Observed in strawberry fields in Atlantic and Cumberland Counties. (Ins.-Dis. Newsltr., Apr. 9).

APHIDS - NEW JERSEY - Unspecified species observed on strawberries in Atlantic and Cumberland Counties. (Ins.-Dis. Newsltr., Apr. 9). MARYLAND - Small numbers of Pentatrichopus thomasi and P. minor found on opening strawberry leaves in planting at Fruitland, Wicomico County; less than 0.5 per leaf. (U. Md., Ent. Dept.).

CUTWORMS - NEW JERSEY - Unspecified species present in strawberry fields in Atlantic and Cumberland Counties. (Ins.-Dis. Newsltr., Apr. 9).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NEW JERSEY - Observed in Atlantic and Cumberland County strawberry fields. (Ins.-Dis. Newsltr., April 9).

TOBACCO INSECTS

GARDEN SPRINGTAIL (Bourletiella hortensis) - MARYLAND - Numerous on young tobacco plants in plant bed at Huntingtown, Calvert County. (U. Md., Ent. Dept.).

COTTON INSECTS

Boll Weevil Survival Survey in McNairy County, Tennessee - McNairy County was chosen for BOLL WEEVIL (Anthonomus grandis) survey because it usually supports heaviest infestations of any other southern county in western area. A large number of weevils can be expected in Hardin, Hardeman, Fayette and Shelby Counties. Fall (1962) trash examinations indicated an average of 3,633 weevils per acre. Spring (1963) examinations of cotton field environ trash taken March 22 and 25 indicated 1,210 live weevils per acre; winter survival was 33 percent. The number of overwintered weevils in 1962 was 1,613 per acre. With favorable weather conditions for weevil buildup, there are definitely enough weevils present in southern counties to cause extensive damage if proper control is not carried out in time. In 1962, growers started control too late, resulting in severe loss. (Locke).

DARKLING BEETLES (Blapstinus spp.) - ARIZONA - Injuring stub cotton in Buckeye area, Maricopa County. (Ariz. Coop. Sur.).

BOLLWORM (Heliothis zea) - TEXAS - Few larvae feeding in cotton terminals in extreme southern area. (Deer).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - First moths of season emerged March 22 from caged surface bolls. (Ariz. Coop. Sur.). TEXAS - Inspection of surface debris in 9 Nueces County fields revealed 31 larvae in 16 infested bolls of 225 inspected. (Deer). FLORIDA - Infested Hibiscus sp. at Cape Sable (Mar. 27, Apr. 2) and at Islamorada (Mar. 29), Monroe County. Det. by W. Breidenbach. (Fla. Coop. Sur.).

CUTWORMS - TEXAS - Unspecified species reducing stands of cotton in local areas of extreme southern portion of State. (Deer).

COTTON APHID (Aphis gossypii) - TEXAS - Appearing in Refugio, Hidalgo, Zavala and Calhoun Counties. (Deer; Texas Coop. Rpt.; Bales).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Appearing in more localities in southern area; light near Sharyland, Mission, Los Ebanos, Edinburg and San Benito. (Deer).

A FLEAHOPPER (Spanogonicus albofasciatus) - ARIZONA - Few observed in fields were squares appearing on stub cotton in Pinal County. (Ariz. Coop. Sur.).

THRIPS - TEXAS - Light populations of unspecified species appearing in Zavala, Grimes and Burleson Counties. (Deer, Wipprecht).

SPIDER MITES - TEXAS - Unspecified species increasing in areas near Edinburg, La Feria, Harlingen and Crystal City. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - MARYLAND - Moths active April 8 in Virginia pine plantation at Rison, Charles County. (U. Md., Ent. Dept.).
DELAWARE - Pupae heavy in young loblolly pine in area of New Castle County. (Bray).

PALES WEEVIL (Hylobius pales) - ALABAMA - Active in Mobile County. (Seibels).

PINE BARK APHID (Pineus strobi) - PENNSYLVANIA - Egg laying underway on red pine in Wyoming County April 9. (Pepper).

A PINE SCALE (Physokermes coloradensis) - COLORADO - A problem on pinyon pine in Denver and Larimer Counties. (Hantsbarger).

LARCH SAWFLY (Pristiphora erichsonii) - WISCONSIN - Females observed in Dane County have abdomens distended, probably indicating egg development. (Wis. Ins. Sur.).

A CONIFER SAWFLY (Neodiprion taedae linearis) - ARKANSAS - First to third-stage larvae present on loblolly pine in Jersey community, Bradley County (south central). (Ark. Ins. Sur.).

SPRUCE SPIDER MITE (Oligonychus ununguis) - MARYLAND - Heavy on Norway spruce at Beltsville, Prince Georges County. (U. Md., Ent. Dept.).

AN ERIOPHYID MITE (Nalepella tsugifolia) - NEW YORK - Large numbers observed on hemlock at several Long Island locations. (N. Y. Wkly. Rpt., Apr. 9).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - CONNECTICUT - Hatching in Meriden area. (Savos, Gaines, Johnson). PENNSYLVANIA - Hatching underway in south central area April 7. (Sleesman, Jeffery). MARYLAND - Increasing on wild cherry, flowering crab apple and apple in central and southern sections. (U. Md., Ent. Dept.). VIRGINIA - Hatched in Surry County March 20 and at Blacksburg April 5. (Amos). ILLINOIS - Small nests observed as far north as Greenup, Cumberland County, April 4. Nests now vary from occasional to very abundant in east-southeast district, mainly on wild cherry. (Ill. Ins. Rpt.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - TEXAS - Light locally on oaks in Harris and Brazos Counties. (Kay, Newton). In combination with Malacosoma sp., probably texanum, this species stripping oaks in Hays, Comal, Blanco, Kendall, Travis, Mason, Hamilton, Bexar, Caldwell, Guadalupe and Bee Counties. (Texas Coop. Rpt.).

FALL CANKERWORM (Alsophila pometaria) - CONNECTICUT - Heavy flights during fall of 1962 indicate high populations this spring. (Savos). WISCONSIN - Eggs much fewer in numbers on elms in Jefferson County than in 1962. Populations should be reduced over last season, particularly in this area. (Wis. Ins. Sur.).

SPRING CANKERWORM (Paleacrita vernata) - KANSAS - First-stage larvae observed on hackberry and elm in Riley County (northeast). (Thompson).

LINDEN LOOPER (Erannis tiliaria) - CONNECTICUT - Heavy flights during fall of 1962 indicate high populations this spring. (Savos).

ELM CALLIGRAPH (Calligrapha scalaris) - KANSAS - Abundant on elms in McPherson County (central). (Gates).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - SOUTH DAKOTA - Collected on American elms in Union County. Populations quite high and thought to be factor in death of many elms along creek in area. Additional and more accurate surveys to be made. This is a new record for Union County. (Wood, Kantack).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Considerable adult activity underway throughout State. (Okla. Coop. Sur.). OHIO - Overwintering adults present indoors at Dayton, Montgomery County, April 4. (Blair).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - OKLAHOMA - Heavy on elms in Oklahoma City area. (Okla. Coop. Sur.).

A CIMBICID SAWFLY (Cimbex rubida) - CALIFORNIA - Adults heavy on willow leaves in Sausalito, Marin County. (Cal. Coop. Rpt.).

AZALEA LEAF MINER (Gracilaria azaleella) - FLORIDA - Moderate on azalea at Longwood, Seminole County (Apr. 1). (Fla. Coop. Sur.).

A LEAF BLOTCH MINER (Marmara arbutiella) - CALIFORNIA - Larvae heavy in leaves of madrone trees in Mill Valley, Marin County; extensive damage. Madrone trees have been severely damaged by various insects during past several years. Ample rain this season may aid in recovery. (Cal. Coop. Rpt.).

A COSMOPTERIGID MOTH (Sathrobrota badia) - CALIFORNIA - Larvae, pupae and adults medium in street plantings of Pinus canariensis in Whittier, Los Angeles County. Causing extensive damage by webbing together and feeding on flower buds and terminals. (Cal. Coop. Rpt.).

AN ETHMIID MOTH (Pyramidobela angelarum) - CALIFORNIA - Larvae medium on Buddleia sp. nursery stock in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A STENOMID MOTH (Stenoma manzanitae) - CALIFORNIA - Larvae medium on leaves of Arctostaphylos sp. in Shingle Springs area, El Dorado County. (Cal. Coop. Rpt.).

A SHIELD BEARER - CALIFORNIA - Possibly Coptodisca sp., causing extensive damage to native manzanita in Lafayette area, Contra Costa County. (Cal. Coop. Rpt.).

A SAP BEETLE (Conotelus mexicanus) - TEXAS - Heavy in roses and other flowering plants in El Paso County. (Thomas; Texas Coop. Rpt.; Meekma, Boyd).

APHIDS - ALABAMA - Macrosiphum rosae ranged 5-25 per bud on untreated roses in Lee County. None reported on recently treated plants in same location. Aphis spiraeicola ranged 5-25 per terminal branch on spirea in Lee County. (McQueen). TEXAS - Light populations of unspecified species attacking roses in local areas of Reeves County. (Texas Coop. Rpt.; Hare). OKLAHOMA - Several species numerous on variety of ornamentals around State. (Okla. Coop. Sur.). OHIO - Myzus persicae nymphs and adults ranged 20-25 per terminal leaf on some chrysanthemum plants in a Wayne County greenhouse. Treatment underway. (Lyon). UTAH - Hatching on rose bushes at Ogden, Weber County. (Knowlton). NEVADA - Prociphilus venafuscus heavy on Modesto ash in Las Vegas, Clark County. (Nichols).

A LYGAEID BUG (Lygaeus kalmii) - CALIFORNIA - Adults medium on Modesto ash trees in Livermore, Alameda County. (Cal. Coop. Rpt.).

COCCIDS - CALIFORNIA - Lecanium cerasorum heavy on Liquidamber styraciflua locally in Sacramento, Sacramento County. Diaspis boisduvalii heavy on palms in Borrego, San Diego County. (Cal. Coop. Rpt.). ARIZONA - Icerya purchasi very heavy on some pittosporum plantings in Safford, Graham County. (Ariz. Coop. Sur.). NORTH CAROLINA - Lecanium sp. present on oak twigs in Robeson and Duplin Counties. Eggs very abundant; none hatched at present. (Mount). PENNSYLVANIA - Florinia theae heavy on camellias in a greenhouse in Washington County. Det. by G. B. Slesman. (Udine).

Coccids in Florida - Aonidiella citrina moderate on Citrus sp. at Forest City, Seminole County (Apr. 5). Cerococcus sp. moderate on 150 hibiscus plants at Miami, Dade County (Apr. 8). Ceroplastes floridensis severe on Pyracantha sp. at Largo, Pinellas County (Mar. 27) and on Cedrus deodora at Winter Haven,

Polk County (Apr. 3). Chrysomphalus aonidum moderate to severe on Podocarpus sp. at Melbourne, Brevard County (Apr. 2). Coccus accuminatus moderate on Mangifera indica at Hialeah, Dade County (Mar. 29). Eucalymnatus tessellatus moderate on bay at Longwood, Seminole County (Apr. 2). Fiorinia theae infested Ilex sp. at Fort Pierce, St. Lucie County (Apr. 1), and moderate on Camellia japonica at Winter Haven (Apr. 3). Phenacaspis cockerelli severe on Magnolia grandiflora at Davie, Broward County (Mar. 27), and moderate on same host at Temple Terrace, Hillsborough County (Apr. 1) and at Winter Haven (Apr. 3); severe on Strelitzia reginae at Holly Hill, Volusia County (Apr. 3). Pinnaspis aspidistrae moderate on Cycas revoluta at Pine Castle, Orange County (Apr. 3), and severe on Aspidistra sp. at Orange City, Volusia County (Apr. 4). Protopulvinaria pyriformis moderate on Gardenia sp. at Melbourne (Apr. 2). Pseudaulacaspis pentagona moderate to severe on Allamanda cathartica at Sansula, Volusia County (Apr. 2). Pulvinaria urbicola severe on Vaccinium sp. at Bereah, Polk County (Apr. 5); this species not too common in State. Saissetia oleae moderate on Dizygotheca elegantissima at Holly Hill (Apr. 3). (Fla. Coop. Sur.).

THRIPS - CALIFORNIA - Frankliniella occidentalis and F. minuta heavy on flowers of Ranunculus spp. in San Luis Obispo, San Luis Obispo County. (Cal. Coop. Rpt.). UTAH - Unspecified species active in early garden blossoms in Salt Lake City, Salt Lake County. (Knowlton).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - MARYLAND - Averaged 3 per head on 25 yearling steers at Waterloo, Howard County. (U. Md., Ent. Dept.). NORTH CAROLINA - Adults active in Madison County April 2. (Boss). OKLAHOMA - Activity of H. lineatum continues in most areas. (Okla. Coop. Sur.). UTAH - Total of 15,000 beef and 6,000 dairy cattle recently treated in Cache County; H. lineatum and H. bovis common in area. This constitutes approximately 46 percent of cattle in county. (Knowlton, Tueller).

HORN FLY (Haematobia irritans) - GEORGIA - Ranged 100-150 per beef animal in Spalding County (Apr. 3); 0-200 (average 25) per animal on 40 animals observed in same county (Apr. 13). (Roberts). ARKANSAS - Increased; up to 50 per head observed on cattle in southern area. Counts lower in northern area. (Ark. Ins. Sur.). OKLAHOMA - Light, but increasing in southeast and south central areas. Highest count, 50 per head in Marietta area, Love County (south central); lower counts recorded as far north as Ottawa County. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - First activity of season reported from Pushmataha County; averaged 1 per head. (Okla. Coop. Sur.).

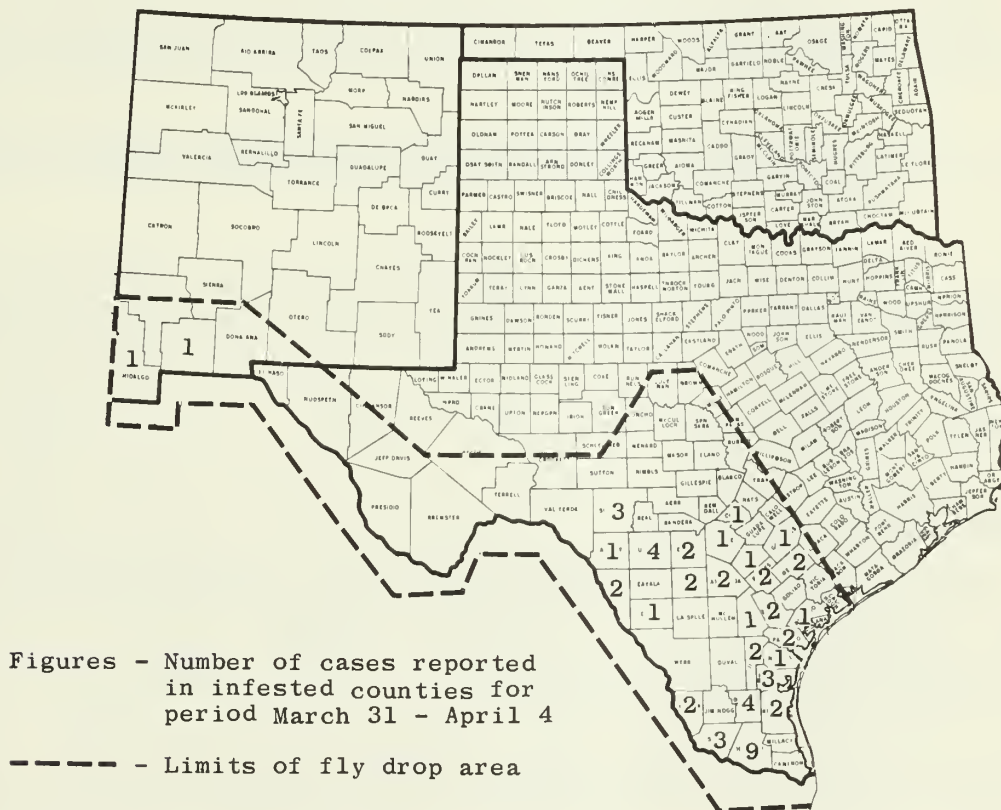
TABANID FLIES - OKLAHOMA - Tabanus spp. and Chrysops spp. active as far north as Cherokee County; 3-4 per head noted on cattle in southeast and 1-5 in Seminole County (east central). First activity reported from southeastern area week ending April 6. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - VIRGINIA - Adults present in and around homes in Page County. (Tarpley, Saunders, Apr. 2). NORTH CAROLINA - Active in Burke County. (Parton).

BLACK BLOW FLY (Phormia regina) - UTAH - Numerous around pig farm near Hooper, Weber County. (Knowlton).

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

In spite of all efforts to reduce screw-worm buildup or migration, screw-worm is rapidly spreading throughout southern TEXAS and southern NEW MEXICO; 59 cases reported in this area during period March 31-April 6. These widespread infestations have caused eradication crews to cease treating each infested area with "hot-spot" fly releases. Except for Liberty County area in east Texas and infestations in New Mexico, all other areas receiving standard grid release plus sterile fly release along major rivers and tributaries. Inspection force continues to attempt spraying of all infested herds with precautionary pesticide. Evidence indicates that reporting and submitting of larvae is excellent, as very large percentage of all specimens submitted is not screw-worm. A total of 95,649,050 sterile screw-worm flies was released during period March 31-April 6. (Anim. Dis. Erad. Div.).



MOSQUITOES - DELAWARE - Full-grown larvae and pupae of *Aedes canadensis* and *A. mitchellae* present in some areas of New Castle County April 9. (Catts, Lake). **MARYLAND** - Fourth-stage larvae of *Aedes* spp., including *A. canadensis*, *A. cinereus*, *A. grossbecki* and *A. stimulans*, collected April 4 at Laurel, Anne Arundel County. (U. Md., Ent. Dept.). **TEXAS** - *Culiseta inornata*, *Culex salinarius*, *Aedes sollicitans* and *Anopheles crucians* common in Jefferson County. (Texas Coop. Rpt.). **MINNESOTA** - Overwintering *Culex* spp. troublesome in homes during late winter and early spring in Minneapolis-St. Paul area. (Minn. Ins. Rpt.). **CALIFORNIA** - Incidence of mosquitoes very low during past few weeks, following heavy occurrences in February and early March due to unseasonably warm weather following warm rains. Low, current incidence attributed to cold weather and cold rains. (Cal. Coop. Rpt.).

CHICKEN BODY LOUSE (Menacanthus stramineus) - OHIO - Moderate to heavy on most farm flocks in southeastern area. Activity mostly at vent of all birds; one heavy infestation revealed 15 per square inch of vent, with over 500 eggs per feather. Most flocks lacked control program. (Treece, Lyon).

SHORT-NOSED CATTLE LOUSE (Haematopinus euryesternus) - OHIO - Eggs, nymphs and adults heavy on beef cattle at university farm, Franklin County; 10 of 20 beef animals observed from distance of 20-25 feet appeared parasitized. Closer examination revealed one animal with 6-8 nymphs and adults per square inch of hide at dewlap, and thousands of eggs appearing at the withers, back, tail, head and dewlap. No control program in force. (Davidson, Lyon).

CATTLE LICE - OKLAHOMA - Several species ranged light to moderate on cattle throughout State. (Okla. Coop. Sur.). UTAH - Few cattle at Smithfield, Cache County, rubbing conspicuously. (Knowlton).

SCALY-LEG MITE (Knemidokoptes mutans) - OHIO - Infested flock in Jackson County; few birds with joints and legs so inflamed that walking was difficult. No control program ever employed on farm. (Lyon).

AMERICAN DOG TICK (Dermacentor variabilis) - MARYLAND - First ticks of season observed on children at Carmody Hills, Prince Georges County, April 9. (U. Md., Ent. Dept.). DELAWARE - First adults of season noted on human April 3 in New Castle County. (MacCreary, Catts).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy and causing considerable concern to man and animals in eastern part of State; livestock and wild animals heavily infested. (Okla. Coop. Sur.). GEORGIA - Heavy in home yards in Hancock County. (Roberts, Coleman).

A HARD-BACKED TICK (Dermacentor sp.) - NEVADA - Heavy in the Spring Mountains, Clark County. (Zoller).

HOUSEHOLD AND STRUCTURAL INSECTS

ANTS - NEW YORK - Several species swarming in Nassau County. (N. Y. Wkly. Rpt.). UTAH - Small, unspecified species troublesome in home at Marysville, Piute County. (Knowlton). OREGON - Winged forms of Prenolepis imparis abundant in and around Medford area homes in early April. (Goeden). CALIFORNIA - Camponotus essigi medium in Nevada City residence, Nevada County. Species was nuisance on several occasions during winter. (Cal. Coop. Rpt.).

SUBTERRANEAN TERMITES - MARYLAND - Winged Reticulitermes spp. swarming in and about homes in Prince Georges and Washington Counties and at Baltimore. (U. Md., Ent. Dept.). UTAH - Unspecified species infested 2 additional homes at Ogden, Weber County. (Knowlton).

TERMITES - CONNECTICUT - Swarming noted throughout State. (Savos). NEW YORK - Appearance began in mid-March; bulk of swarming yet to come. (N. Y. Wkly. Rpt.). NEW JERSEY - Swarming continues of primary concern to homeowners. (Ins.-Dis. Newsltr., Apr. 9). VIRGINIA - Reproductive forms present at a locality in Charles City, Charles City County, and in homes at Saluda, Middlesex County, and Loudoun County. (Tarpley, Settle, Edwards, Brown, Apr. 3).

A POWDER-POST BEETLE (Lyctus cavicollis) - CALIFORNIA - Heavy in hardwood floors in residence in Escondido, San Diego County, and in rough hardwood furniture in residence in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

BROWN-BANDED COCKROACH (Supella supellectilium) - NORTH CAROLINA - Present in Alamance County residence. (Jones).

CLOVER MITE (Bryobia praetiosa) - NEW JERSEY - Active in many areas. (Ins.-Dis. Newsltr., Apr. 9). NEW YORK - A nuisance to Nassau County householders. (N. Y. Wkly. Rpt.). PENNSYLVANIA - Complaints very numerous in Centre County where adults appeared on dishes, linen and other household items. (Udine). MARYLAND - Caused considerable nuisance entering homes in Anne Arundel, Prince Georges and St. Marys Counties. (U. Md., Ent. Dept.). VIRGINIA - Invaded several homes in Roanoke area. (Allen, Apr. 3). Extremely abundant in Goochland County home. (Tarpley, Foster, Mar. 30). OHIO - Adults entering home in Franklin County. (Blair). UTAH - Infesting many homes in Ogden-North Ogden area, Weber County, and at Logan, Cache County. (Knowlton).

STORED-PRODUCT INSECTS

LESSER MEALWORM (Alphitobius diaperinus) - SOUTH DAKOTA - Adults and larvae collected in 2 poultry houses near Watertown, Codington County; thousands reported in surface layer of clay floor in one turkey-brooding house with floor area of 8,000 square feet. Surface pulverized by activity of adults and larvae. (Spawn).

RICE WEEVIL (Sitophilus oryzae) - ARIZONA - This and other stored grain pests light to moderate in stored grain in Pinal County. (Ariz. Coop. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - IDAHO - Numerous species leaving hibernation sites in parts of southwestern and northern areas. (Bechtolt, Halfhill). UTAH - Various species becoming more common in northern localities. (Knowlton). OKLAHOMA - Several species range moderate to heavy in most small grains and alfalfa throughout State. (Okla. Coop. Sur.). ARKANSAS - Various species very active in legumes in most areas. Reproduction underway for some time, with larvae nearing pupation in southern area. (Ark. Ins. Sur.). ILLINOIS - Coleomegilla maculata fuscilabris ranged 0-10 (average 0.5) per 100 sweeps in clover and alfalfa in east-southeast district April 8-9. Lady beetle adults ranged 0-5 (average 0.5) per 100 sweeps in clover and alfalfa in extreme southern area April 1-4. (Ill. Ins. Rpt.). PENNSYLVANIA - Adalia bipunctata numerous in homes statewide. (Pepper).

DAMSEL BUGS (Nabis spp.) - IDAHO - Adults appearing in alfalfa in lower Clearwater River area; ranged 8-24 per 200 square yards. (Halfhill). OKLAHOMA - Nabis sp. light to moderate in most alfalfa fields checked. (Okla. Coop. Sur.). ILLINOIS - Adults ranged 0-10 (average 1) per 100 sweeps in clover and alfalfa in extreme southern area. (Ill. Ins. Rpt., Apr. 4).

A BIG-EYED BUG (Geocoris punctipes) - ARKANSAS - Adults present in legumes; no eggs or nymphs found. (Ark. Ins. Sur.).

LACEWINGS (Chrysopa spp.) - ARKANSAS - Adults very active in legumes; egg deposition light. No larvae found. (Ark. Ins. Sur.). OKLAHOMA - Adults light to heavy in small grains and alfalfa checked throughout State. (Okla. Coop. Sur.).

HYMENOPTEROUS PARASITES - ARKANSAS - Very active in legumes; parasitized aphids quite common in some fields. (Ark. Ins. Sur.).

MISCELLANEOUS INSECTS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - CALIFORNIA - Larvae and pupae heavy in soil and sod in Modesto, Stanislaus County. The past season, which was unusually cool, apparently was favorable for weevil development, as there were more instances of medium to heavy populations in area where species occurs, instead of light or very light numbers as in past years. (Cal. Coop. Rpt.).

AN ANOBIID BEETLE (Ptilinus ruficornis) - OHIO - Males and females observed on dead branches of oak and maple near Dayton, Montgomery County. (Holdsworth).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Spray progress has been excellent; more than 1,000 blocks now treated in Sacramento. With continued favorable weather, treatment will be completed prior to adult emergence. Survey in many locations over State outside Sacramento area have been negative. (Cal. Coop. Rpt.).

TREEHOPPERS - IDAHO - Unidentified species abundant on variety of vegetation throughout many parts of Canyon County. (Bechtolt).

SPRINGTAILS - DELAWARE - Several species rather abundant over State in old corn fields, lawns, and few noted in pepper seed beds in Sussex County. (Burbutis, MacCreary).

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - WYOMING - Infestation found in stored books in Lusk, Niobrara County. (Fullerton).

GRAY GARDEN SLUG (Deroceras reticulatum) - IDAHO - Migrating from rain-saturated lawns in Moscow, Latah County. (Portman).

CORRECTIONS

CEIR 12(50):1250 - MIMOSA WEBWORM (Homadaula albizziae) - KANSAS - Host indicated is incorrect; host was probably honeylocust. Make same correction on First State Reports, CEIR 13(2):20.

CEIR 13(1):6 - A LADY BEETLE (Coleomagilla maculata fuscilabris) should read (Coleomegilla maculata fuscilabris).

CEIR 13(15):359 - ARMY CUTWORM (Chorizagrotis auxiliaris) - NEBRASKA - Should read "Present in most wheat and alfalfa fields in Lincoln County; averaged 2 per square foot."

CEIR 13(15):365 - HACKBERRY NIPPLE GALL (Pachypsylla celtidismamma) should read HACKBERRY-NIPPLE-GALL MAKER.

CEIR 13(13):285 - A PHYTOSEIID MITE (Phytoseiulus macropilis) - FLORIDA - Should read "Very numerous on 400 azaleas....." This is a predaceous species, and was probably feeding on a phytophagous mite.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Feltia subterr.	Perid. saucia	Prod. ornith.	Spodop. exigua	Heliothis zea vires.
FLORIDA							
Gainesville 4/10			1				
GEORGIA							
Tifton 4/5-10						2	1
ILLINOIS (County)							
Champaign 4/4-11		11					
KANSAS							
Garden City 4/6-7			1	2			
Mound Valley 4/6,9	55	1		61	19		
Wathena 4/1,5-7	2			8			
MISSISSIPPI							
*Stoneville 4/5-11	11	4	2	25		7	1
MISSOURI							
Portageville 3/29-4/4	14	4		5			
NEBRASKA							
North Platte 3/27-4/2		4			1		
North Platte 4/5-10	3	12		1			
Lincoln 3/28-4/10	4	15		1	4		5
SOUTH CAROLINA							
Charleston 4/1-7	10	2	2				
TEXAS							
*Brownsville 4/5-12	33	12	916	36	17		14 158
Waco 4/6-12	33	1	10	9			2

Additional Light Trap Collections

KANSAS, Wathena (4/1,5-7) - Paleacrita vernata - 4.

NEBRASKA - P. vernata - North Platte - (3/27-4/2) - 31; (4/5-10) - 30.

TEXAS,*Brownsville (4/5-12) - Protoparce quinquemaculata - 10; P. sexta - 19;
Pectinophora gossypiella - 2; Laphygma frugiperda - 146. Waco (4/6-12 - P.
gossypiella - 1.

* Two traps - Stoneville; 6 traps - Brownsville.

ADDITIONAL NOTES

VIRGINIA - ALFALFA WEEVIL (Hypera postica) found in most alfalfa surveyed this spring. Probably overwintered females continuing to lay eggs, especially in fields not treated in fall of 1962. At present, most larvae relatively small and injury not evident without close scrutiny; however, injury will be readily noticed within next few days in growing tips of alfalfa. (Rowell). Larvae ranged light to very light in alfalfa checked in Wythe, Smyth, Washington, Scott and Lee Counties; none found in Russell and Tazewell Counties. Sweep samples not taken in Wythe and Smyth Counties due to rain; however, 2 percent of terminal stems in 3 fields infested, mostly with first and second instars. Counts per 100 sweeps, by county, were as follows: Washington - 3-190 larvae, 0-10 adults; Scott - 24-450 larvae, 0-150 adults; Lee - 12-120 larvae, no adults. Larvae mostly first and second instars in most instances; however, third instars predominant in some fields, especially with large alfalfa. Larval damage evident only with close scrutiny, and no apparent close relationship between larval age and size of alfalfa. (Tarpley). Larvae damaged alfalfa on farm near Blackstone, Nottoway County. (Tarpley, Rowell, Apr. 6). Hatching underway in Montgomery County; no larvae found in several treated fields, but 3 per 200 sweeps present in untreated, abandoned field. (Pienkowski, Pamanes). Larvae ranged zero to light in fields checked in Pulaski, Carroll, Grayson and Floyd Counties. Larvae very active and damage evident in Patrick County, especially in fields not fall-treated; hundreds of larvae taken in 50 sweeps, and 6-8 adults taken in 25 sweeps. (Rowell). PEA APHID (Acyrtosiphon pisum) ranged 0-12 per 100 sweeps in alfalfa at Steeles Tavern, Augusta County. (Woodside). Very light to light in all fields checked in Wythe, Smyth, Washington, Scott, Lee, Russell and Tazewell Counties. Virtually no predators encountered, probably as a result of unfavorable weather. (Tarpley). Light in all fields checked in Pulaski, Carroll, Grayson, Patrick and Floyd Counties. (Rowell). Tents of EASTERN TENT CATERPILLAR (Malacosoma americanum) becoming conspicuous on favored hosts in Montgomery, Pulaski, Wythe, Smyth, Washington, Scott, Lee, Wise, Russell, Tazewell, Bland, Giles and Craig Counties. (Tarpley).

MINNESOTA - EUROPEAN CORN BORER (Ostrinia nubilalis) overwintering mortality averaged 14 percent in central district. (Minn. Ins. Rpt.).

NEW MEXICO - PEA APHID remains light in alfalfa in Sandoval and Bernalillo Counties. Light, scattered infestations of BROWN WHEAT MITE (Petrobia latens) noted in Sandoval County alfalfa. Occasional larva, possibly ALFALFA WEEVIL, found in field of alfalfa near Sandoval, Sandoval County. PINE NEEDLE SCALE (Phenacaspis pinifoliae) heavy on needles of lower branches of Colorado blue spruce at Taos, Taos County. Appears to be causing loss of needles on these branches. (N. M. Coop. Rpt.).

MASSACHUSETTS - FACE FLY (Musca autumnalis) emerged from hibernation. (Crop Pest Cont. Mess.).

Weather of the week ending April 15 (continued from page 388)

80's northward to the Dakotas. Helena and Great Falls, Montana, reported early season highs of 79° on Easter Sunday. The largest area of moderate to heavy precipitation east of the Rockies occurred in the northwestern Great Plains during the first part of the week. Rain and snow fell in Montana and North Dakota the first 2 days of the week and thunderstorms occurred in South Dakota about midweek. Several stations reported weekly totals of well over an inch. Elsewhere east of the Rockies, precipitation was generally very light, and several areas had no measurable amounts at all. Although precipitation was frequent in the Far West, weekly totals were light in extreme southern areas. No measurable amounts were reported in Arizona. In California, weekly totals ranged from 1.00 to 6.00 inches in the northern two-thirds of the State, 0.50 to 3.00 inches in the central portion, 0.10 to 1.00 inch in south central portions, and small amounts in the extreme south. Beneficial amounts fell in Idaho, Montana, Wyoming and northern portions of Utah and Nevada. Snow fell in the Cascade and Olympic Mountains of Washington above 2,500 feet. (Summary supplied by U. S. Weather Bureau).

INTERCEPTIONS OF SPECIAL INTEREST AT U. S. PORTS OF ENTRY

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on January 31, 1963, follow. These reports are based on the identifications received from Federal taxonomists at the U. S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

LEEK MOTH (Acrolepia assectella (Zell.)) 5 times in stores; 3 times at Philadelphia, Pennsylvania, and 2 times at New York, New York.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in stores at San Diego, California.

MEXICAN FRUIT FLY (Anastrepha ludens (Lw.)) 31 times (22 times in baggage and 9 times in stores); 7 times at Laredo, Texas; 5 times each at New York, New York, and Eagle Pass, Texas; 4 times at Brownsville, Texas; 3 times at San Ysidro, California; 2 times each at El Paso and El Rio, Texas; and one time each at Roma, Texas; Calexico, California; and Chicago, Illinois.

ROSE SAWFLY (Blennocampa pusilla (Klug)) (a common pest of roses throughout Europe) on cut roses in baggage at Idlewild International Airport, New York. This is the first Plant Quarantine Division interception of this species.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)), or probably that species, 41 times (31 times in baggage, 2 times in mail, once in cargo, and 7 times in stores); 28 times at New York, New York; 5 times in Hawaii; 4 times in Boston, Massachusetts; and once each at Detroit, Michigan; Chicago, Illinois; San Juan, Puerto Rico; and Baltimore, Maryland.

A FRUIT FLY (Ceratitis rubivora Coq.) (a pest of Rubus spp. in southern Africa) at District of Columbia Inspection House in mail. This is a first Plant Quarantine Division interception of this pest.

AN AVOCADO SEED WEEVIL (Conotrachelus perseae Barber), or probably this species, once each in baggage and mail at Idlewild International Airport, New York, and at El Paso, Texas. Also C. aguacatae Barber in cargo for planting at El Paso, Texas, and in baggage at San Ysidro, California.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.), including eggs of probably this species, 5 times in baggage at Honolulu, Hawaii.

A SUGAR-BEET CROWN BORER (Gnorimoschema ocellatella (Boyd)) twice in stores at Galveston, Texas.

AN ANDEAN POTATO WEEVIL (Premnotrypes sp.) in stores at Philadelphia, Pennsylvania.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)), or probably this species, 22 times (10 times in baggage and 12 times in airplane stores); 21 times at New York, New York, and once at Boston, Massachusetts.

A WEEVIL (Scepticus sp., near griseus (Roelofs)) (a species of some importance to a variety of plants in Japan, Korea and Saghalien) in burdock cargo at Honolulu, Hawaii.

A STENOMID (Stenoma catenifer (Wlsm.)) 3 times in baggage; once each at Brownsville, Eagle Pass and Laredo, Texas.

KHAPRA BEETLE (Trogoderma granarium Everts) 19 times; 11 times at New York, New York; 3 times at Savannah, Georgia; 2 times at Cleveland, Ohio; and once each at Detroit, Michigan; Philadelphia, Pennsylvania; and Baltimore, Maryland.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 3 times on conex boxes and general cargo; 2 times at New Orleans, Louisiana, and once at Dover, Delaware.

SUMMARY OF INSECT CONDITIONS - 1962
(continued from page 384)

BENEFICIAL INSECTS

Highlights:

LADY BEETLES effectively reduced populations of green peach aphid and cabbage aphid in Washington. Pea aphid and greenbug were attacked in Missouri by lady beetles and other predators. Lady beetles were the most abundant predators during the second generation of European corn borer in Kansas, and overwintering adults were numerous in Virginia. TWICE-STABBED LADY BEETLE destroyed 90 percent of a heavy infestation of pine needle scale in Pennsylvania, and TWO-SPOTTED LADY BEETLE was very numerous in a very heavy infestation of Norway-maple aphid in that State. Releases of PUNCTUREVINE WEEVILS were made in all counties of Arizona, and surveys indicate they are becoming established in several areas. Prospects for puncturevine control are very good in California. Puncturevine weevils appear to be established in that State and in areas of Nevada and Washington as well. A GORSE WEEVIL (Apion ulicis) appears to be well established in Oregon and California in areas of earlier release. KLAMATH-WEED BEETLES are established in California in an area where Klamath-weed occurs. Although there were some setbacks to HONEY BEE colonies in a number of States due to diseases, fire, floods and other causes, honey production and pollination were generally satisfactory. Other pollinators, such as ALKALI BEE and LEAFCUTTING BEES (Megachile spp.), were also generally effective in increasing seed production, with only minor setbacks due to cool weather. PARASITIC HYMENOPTERONS were active in many States against various economic insect pests. ANTHOCORID BUGS, particularly Orius insidiosus, were active in many States; however, this species was reduced considerably in Massachusetts. O. insidiosus and other predators were responsible for reducing the first brood of European corn borer in Kansas. DAMSEL BUGS were common and effective in most of the States reporting. An unspecified TACHINA FLY was very effective in Rhode Island against orange-striped oakworm. LACEWINGS were reported from most States; GOLDEN-EYE LACEWING was one of the most common predators of aphids in Michigan.

LADY BEETLES were unusually abundant in Skagit County, WASHINGTON, and these, together with parasites, effectively reduced green peach aphid (Myzus persicae) and cabbage aphid (Brevicoryne brassicae) populations. Various lady beetles, primarily CONVERGENT LADY BEETLE (Hippodamia convergens), were common on various crops in ARIZONA during the year. Populations of lady beetles were about the same as in 1961 in WYOMING. Large populations were found in alfalfa, corn and potato fields in that State, with the largest numbers being found in July and August in alfalfa. Hippodamia spp. were present in COLORADO in 1962. Many species of lady beetles were found in notable numbers in TEXAS attacking economic pests in various parts of the State. Light to heavy populations of larvae and adults of several species were present in a variety of crops throughout OKLAHOMA during the year. Lady beetles were the most abundant predators in KANSAS during the second generation of European corn borer (Ostrinia nubilalis) development. Convergent lady beetle and Coleomegilla maculata lengi comprised the largest portion of lady beetle populations at that time. During the month of April, high populations of various species of aphids were present on ornamentals throughout the southern and central areas of MISSOURI. By mid-May, the populations were very low due to the activity of parasites and predators. During late April and mid-May, high populations of beneficial insects were observed feeding on pea aphid (Acyrtosiphon pisum) in alfalfa and clovers and on greenbug (Schizaphis graminum) and other aphids in small grains. The predators were mainly lady beetles of the genera Hippodamia, Cycloneda, Coleomegilla, Coccinella and

Adalia and damsel bugs (Nabis spp.). During the early part of the growing period in Missouri, light to moderate infestations of cotton aphid (Aphis gossypii) were present in the cotton-growing area. These infestations were reduced by parasites and predators to the point where very little chemical control had to be used. Special counts of beneficial insects were made in ARKANSAS in the major cotton-producing areas. During the period June 25-September 1, a total of 446 samples showed lady beetle adults ranged 0.7-6 and averaged 3.11 per 100 terminals; lady beetle larvae ranged 0.2-2.9 and averaged 1.3 per 100 terminals. Lady beetles were present in NORTH DAKOTA in fairly large numbers in most fields observed during the season.

THIRTEEN-SPOTTED LADY BEETLE (Hippodamia tredecimpunctata tibialis) adults and larvae were abundant in samples from Bridgewater, Aroostook County, MAINE. Lady beetles were common in fields of legumes infested with pea aphid in RHODE ISLAND. Various species of lady beetles were common in alfalfa and clover throughout VIRGINIA and numerous samples of overwintering adults were received. The most common ones appeared to be Coleomegilla maculata fuscilabris, TWO-SPOTTED LADY BEETLE (Adalia bipunctata) and Olla abdominalis sobrina. These were also frequently reported as being active on various shade trees in association with various aphid infestations in Virginia.

Two-spotted lady beetle and other species were very numerous on apples infested with aphids in MICHIGAN early in 1962. Heavy concentrations of lady beetle adults were observed on arborvitae in Fulton County, OHIO, in early October. TWICE-STABBED LADY BEETLE (Chilocorus stigma) was very numerous in a Scotch pine plantation in PENNSYLVANIA where it destroyed 90 percent of a heavy infestation of pine needle scale (Phenacaspis pinifoliae). Two-spotted lady beetle was very numerous in a very heavy infestation of Norway-maple aphid (Periphyllus lyropictus) on maples in several towns in Pennsylvania.

PUNCTUREVINE WEEVILS (Microlarinus spp.) were released in Pima County, ARIZONA, during 1961 for control of puncturevine (Tribulus terrestris). Both M. lareynii and M. lypriformis were found established and to have expanded their ranges. Releases were made in all counties during 1962. Surveys indicate these species are becoming established in several areas. Both species successfully overwintered in release areas of Clark County, NEVADA. They increased rapidly during the 1962 season and spread several miles from original sites. These two species were initially released in 1961 in CALIFORNIA; they have since become established and spread into outlying stands of puncturevine during the 1962 season. Prospects are very good for the control of this weed pest in California as soon as the weevils are widespread and present in sufficient numbers. In WASHINGTON, larvae and pupae of M. lareynii were recovered in the area where adults were released in Benton County during 1961.

A GORSE WEEVIL (Apion ulicis) is apparently well established at the release site in OREGON, in western Lane County near Sea Lion Caves. Populations are increasing and expanding at earlier release sites in Coos County, Oregon. The natural spread of this species in CALIFORNIA, from established populations in the north coastal counties, was exceptional in 1962.

KLAMATH-WEED BEETLES have become established over the area where Klamath-weed occurs in CALIFORNIA. Klamath-weed (Hypericum perforatum) has now been reduced to stands sufficient for minimum survival of Agrilus hyperici, Chrysolina gemellata and C. quadrigemina.

GROUND BEETLES (Calosoma spp.) were present in greater numbers in CALIFORNIA because of heavy populations of cutworms. Several species of ground beetles were found in notable numbers in TEXAS where they attacked economic pests in various parts of the State. During the period June 25-September 1, in ARKANSAS, a survey of major cotton-producing areas showed that a ground beetle (Lebia analis) ranged 0-0.5 and averaged 0.21 per 100 terminals. Several undetermined species of ground beetles were numerous in southern MICHIGAN as indicated by

blacklight catches. A predaceous DERODONTID BEETLE (Laricobius erichsoni) has been successfully established in three northern New England States; interest has been stimulated in this method of biological control of the balsam woolly aphid (Chermes piceae). Further importations and releases of this predator are planned for 1963. MELYRID BEETLES (Collops spp.) were commonly encountered on various crops in ARIZONA during 1962.

HONEY BEE (Apis mellifera) survey conducted during the spring in the lower Yakima Valley of WASHINGTON indicated that 40 percent of the colonies had been eliminated. Many beekeepers purchased packaged honey bees to supplement and strengthen their colonies for orchard pollination. For this reason, there were no critical shortages reported in the orchards, except where distribution problems were involved. A total of 36,110 colonies in 2,706 apiaries was inspected in OREGON. American foulbrood was found in 831 colonies and European foulbrood was found in 151 colonies. These foulbrood inspections involved 346 apiaries. There was an abundance of natural honey bee pasture in CALIFORNIA, which helped reduce crowding of apiaries in irrigated areas. Overwintering losses during the winter of 1961-62 were higher than normal, resulting in a shortage of strong colonies for almond pollination in the spring of 1962. There were an estimated 587,000 colonies in California during the productive season. Of 166,964 colonies inspected, 4,471 were diseased with American foulbrood. Floodwater from early fall rains destroyed several hundred colonies in the Sacramento Valley, and brush fires in the southern part of California destroyed several apiaries. Honey bee swarming began May 5 in RHODE ISLAND. Some setbacks occurred in midsummer due to dry weather. It was a good year in general in KANSAS for the production of honey. Production was slightly above the 1961 level. Even with a poor fall flow, production was higher than for the past several years. In general, the quality of honey was better than normal. A total of 6,399 colonies was inspected for foulbrood; 81 colonies were infected with American foulbrood, 9 colonies with European foulbrood and 6 colonies with sacbrood.

ALKALI BEE (Nomia melanderi) emerged June 17-23 in Yakima Valley, WASHINGTON; nesting sites increased throughout the northern portions of the Columbia Basin Project, with good alfalfa seed yields, increasing alfalfa seed yields, and increasing alfalfa seed acreage as a result. Adults of alkali bee emerged in Umatilla County, OREGON, June 8. Populations were up during 1962 in NEVADA due primarily to construction of artificial beds.

A LEAFCUTTING BEE (Megachile rotundata) emerged June 11 in Benton County, WASHINGTON. It was actively nesting in Walla Walla County during July. Re-nesting during the cool season was generally poor. M. rotundata emerged June 4 in alfalfa seed-producing areas of Malheur and Umatilla Counties, OREGON. In NEVADA, M. rotundata, previously introduced into alfalfa seed areas of Humboldt and Pershing Counties, multiplied rapidly during 1962. M. dentitarsus, which was native to Humboldt County, Nevada, has increased rapidly and was a very efficient pollinator of alfalfa. This latter species has become so numerous in some areas that many trees and shrubs were partially defoliated this season by its leafcutting.

Cocoons of a PARASITIC BRACONID (Apanteles sp.) usually accompanied larvae of imported cabbageworm (Pieris rapae) during the late summer in RHODE ISLAND. Apanteles sp. was associated with infestations of apple leaf skeletonizer (Psorosina hammondi) in that State also. Another parasitic braconid (Lysiphlebus testaceipes) has been active in COLORADO on populations of corn leaf aphid (Rhopalosiphum maidis) in the Arkansas Valley. Recovery of progeny of a parasitic braconid (Agathis pumilus) from a site of liberation near St. Maries, Benewah County, IDAHO, points to possible establishment of this species in the State. Its liberation in other areas of the larch casebearer (Coleophora laricella) is planned. In TEXAS, several species of parasitic braconids were found in notable numbers attacking economic pests in various parts of the State.

PARASITIC HYMENOPTERONS were common in legume fields infested with pea aphid (Acyrtosiphon pisum) in RHODE ISLAND. Some unspecified parasitic hymenopterons

were present and common in OKLAHOMA. Various parasites and predators were present in normal numbers in NEVADA, but a heavy population of an unknown hymenopterous parasite assisted in control of pea aphid (Acyrtosiphon pisum). A PARASITIC EULOPHID (Sympiesis viridula) was found parasitizing larvae of European corn borer (Ostrinia nubilalis) in Cass and Richland Counties, NORTH DAKOTA. An ICHNEUMON (Bathyplectes curculionis) has had considerable influence in northern COLORADO on the populations of alfalfa weevil (Hypera postica).

A SCOLIID WASP (Scolia dubia) appeared to be unusually numerous in many localities in NORTH CAROLINA infested with green June beetle (Cotinis nitida). This species was reported as being common in numerous counties in VIRGINIA under the same circumstances. CICADA KILLER (Sphecius speciosus) was very active in NEBRASKA in early August. There were a few reports of activity in VIRGINIA.

A CINNABAR MOTH (Tyria jacobaeae) is slowly increasing in populations in release sites in Polk and Linn Counties, OREGON. Larvae and feeding damage were noted July 9. Advancement of this arctiid moth in CALIFORNIA has been slow because of several circumstances that have interfered with its establishment. Also in California, a SCOTCH-BROOM TIP MOTH (Leucoptera spartifoliella) became established during 1962 and is progressing satisfactorily.

Collections of BENEFICIAL SPIDERS in MASSACHUSETTS indicate an increase in numbers on forage crops over those of 1961.

PARASITES and PREDATORS were abundant in CALIFORNIA during 1962, and in many localities they were completely satisfactory in control. In the Coachella Valley, Riverside County, results of biological controls were exceptional. This situation may continue next season if weather conditions are favorable during 1963. Because of the high degree of control exerted by these species during 1962, there is some concern that growers may depend too much on natural control and find themselves in trouble. Releases by the University of California amounted to over 6,708,561 specimens of all species of parasites and predators. The following species were released over various areas of the State during the 1962 season.

Anagrus sp., near epos
Aphelinus gossypii
Aphelinus sp. ex Eritrea
Aphelinus "T"
Aphelinus varipes
Aphidius sp. ex Asmara
Aphytis "africans"
Aphytis coheni
Aphytis lingnanensis
Aphytis melinus
Aspidiotiphagus lounsburyi
Chelinidea tabulata
Chelinidea vittiger vittiger
Rhizobius satellus
Trioxys angelicae
Trioxys pallidus

Chrysopa carnea
Coccophagoides sp.
Comperiella bifasciata
Dasyscaphus parvipennis
Dibrachoides druso
Leucoptera spartifoliella
Melitara sp.
Microgaster lareynii
Microgaster lypriformis
Opius ferrugineus
Opius rhagoleticolus
Phytodietus debachi
Prospaltella perniciosa
Typhlodromus aerialis
Typhlodromus rickeri
Tyria jacobaeae

An ANTHOCORID BUG (Orius insidiosus), which represented 41.3 percent of all beneficial insect and allied species in 1961 in MASSACHUSETTS, was reduced considerably in 1962. Orius sp. was common on alfalfa, turf and corn in Kingston, Washington County, RHODE ISLAND, late in the season. Orius insidiosus and other predators were responsible for reducing the first brood of European corn borer (Ostrinia nubilalis) populations 42.7 percent as compared with 49.5 percent for the second generation in KANSAS. This species was in normal numbers in the State. O. insidiosus was common and present in OKLAHOMA. Special counts made in all the major cotton-producing areas of ARKANSAS showed that of the 446 samples taken during the period June 26-September 1, O. insidiosus ranged 0-2.3 and averaged

1.1 per 100 terminals. This anthocorid bug was present in notable numbers in TEXAS where it attacked economic pests in various parts of the State. Orius spp. were commonly encountered in ARIZONA on various crops during the 1962 season. Many Anthocoris musculus (det. by J. L. Herring) and an occasional lady beetle (Adalia frigida) were preying on a heavy infestation of an aphid (Pemphigus sp.) within the numerous galls on a poplar tree in UTAH in an area north of Fayette, Sanpete County, August 30. Orius spp. populations were abundant throughout WYOMING.

DAMSEL BUGS (Nabis spp.) were common in alfalfa and clover throughout VIRGINIA. N. ferus represented 49.2 percent of all beneficial insects and allies in MASSACHUSETTS on forage crops; this represented an increase of 28.1 percent over 1961. This same species was common in RHODE ISLAND in alfalfa in late September. Nabis spp. were commonly encountered in ARIZONA on various crops and they were found in notable numbers in TEXAS where they attacked economic pests in various parts of the State. Nabis spp. were common and present in OKLAHOMA. Counts made of 446 samples taken in all the major cotton-producing areas of ARKANSAS indicate that Nabis spp. ranged 0.1-0.9 and averaged 0.4 per 100 terminals during the period June 25-September 1. Damsel bugs were present in normal numbers in KANSAS and COLORADO. The largest populations of Nabis spp. in WYOMING were found in alfalfa. Generally, populations were not as large as those found during 1961.

BIG-EYED BUGS (Geocoris spp.) were commonly encountered on various crops in ARIZONA. They were slightly below normal in numbers in alfalfa and in home gardens in UTAH this season. Special counts made of 446 samples taken in all the major cotton-producing areas of ARKANSAS during the period June 25-September 1 showed that Geocoris punctipes ranged 0.4-2.2 and averaged 1.27 per 100 terminals.

WHEEL BUG (Arilus cristatus) specimens were received from several counties in VIRGINIA. Wheel bug was found in notable numbers in TEXAS attacking economic pests in various parts of the State.

Larvae of FLOWER FLIES were common on alfalfa and clover throughout the State of VIRGINIA, and probably instrumental in keeping aphid populations in check. Various flower flies were very common predators on crops infested with aphids in MICHIGAN. Large numbers were present in most fields observed in NORTH DAKOTA. Flower flies were common on various crops in ARIZONA during the 1962 season. A TACHINA FLY contributed to the abrupt subsiding of feeding of orange-striped oakworm (Anisota senatoria) in RHODE ISLAND. Most of the larvae of A. senatoria bore eggs of an unspecified species of tachina fly in mid-September. This parasitism was noted in the western half of Washington County and in parts of Kent County. Some caterpillars bore up to 11 eggs.

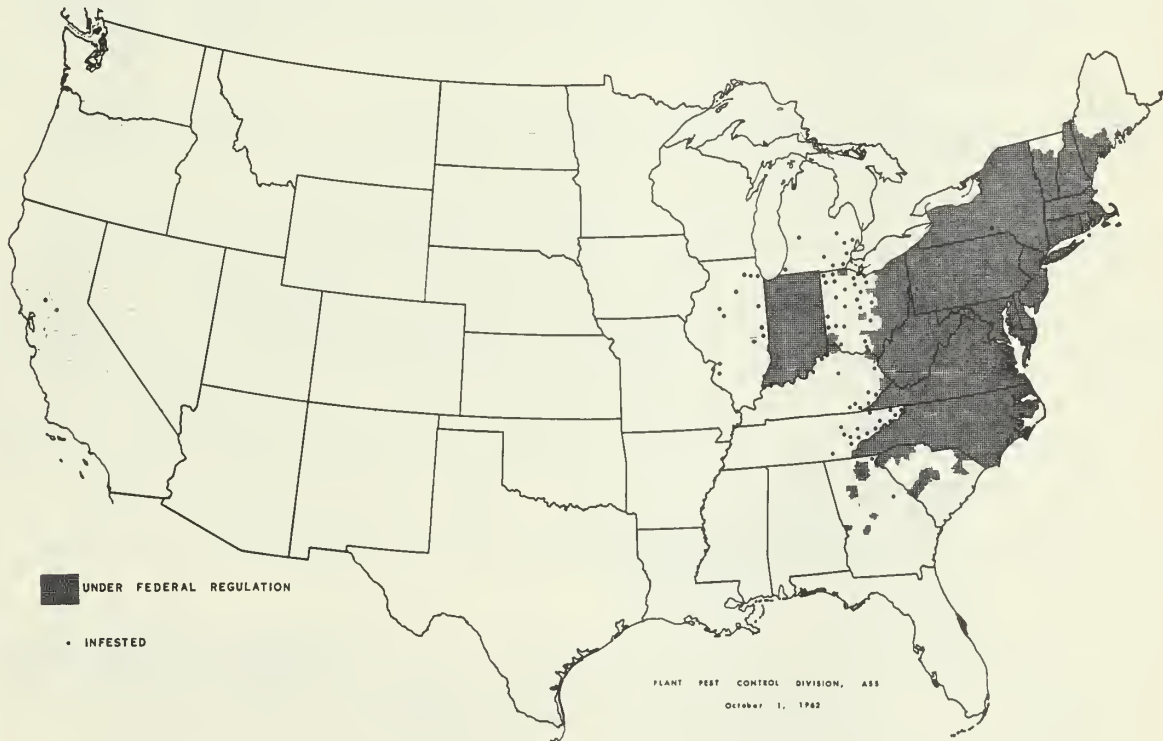
GOLDEN-EYE LACEWING (Chrysopa oculata) was one of the most common predators found attacking aphids in MICHIGAN. This species was found in notable numbers in TEXAS attacking aphids. LACEWINGS were common in legume fields infested with pea aphid (Acyrtosiphon pisum) in RHODE ISLAND. Large numbers of lacewings were noted in most fields in NORTH DAKOTA. Larvae of GREEN LACEWINGS (Chrysopa spp.) ranged 0.5-2.2 and averaged 1.08 per 100 terminals during surveys of the major cotton-producing areas of ARKANSAS during the period June 25-September 1. Green lacewings were common in OKLAHOMA and present in COLORADO. Unspecified lacewings were present in normal numbers in KANSAS. Lacewings were common on various crops in ARIZONA.

MISCELLANEOUS INSECTS

Highlights:

The JAPANESE BEETLE quarantine was extended to include Indiana and parts of Georgia, Kentucky and South Carolina. The outlook for eradication of Japanese beetle in California is optimistic. WHITE-FRINGED BEETLES were found for the first time at Norfolk, Virginia. New county and parish records were established in Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi and Tennessee. Eradicative treatments for IMPORTED FIRE ANT have been applied to approximately 4.5 million acres in the Southern United States. These measures have reduced populations and protected both rural and urban areas. Continuous alert is maintained in southern California against both MEXICAN FRUIT FLY and ORIENTAL FRUIT FLY.

The Federal JAPANESE BEETLE (*Popillia japonica*) quarantine was extended during 1962 to include all of the State of INDIANA and parts of GEORGIA, KENTUCKY and SOUTH CAROLINA. The new regulations became effective in those States on September 21. The Federal quarantine regulations now apply to all or parts of 19 States and the DISTRICT OF COLUMBIA.



Status of the Japanese Beetle

In CALIFORNIA, where an incipient infestation was discovered in the vicinity of Sacramento in 1961, the outlook for complete eradication is optimistic. Soil treatments have been applied to 14,000 acres since the initial discovery, and repeated foliage treatments have been applied in each area where additional

adults have been captured. The State of California has imposed a vigorous regulatory program to prevent local and long-distance spread from infested areas. Surveys in NEVADA were negative in 1962.

Eight, live Japanese beetle adults were collected in NEBRASKA from a cargo container on a commercial airplane at Omaha Municipal Airport in August. Adults were captured in 80 of the 3,149 traps in operation at St. Louis, MISSOURI, during the summer of 1962. Adults were taken in untreated territory in an area north of downtown St. Louis. An area of 3,000 acres, which contained an estimated 1,800 acres of turf, was soil treated in November and December. Negative results were obtained from 1,056 traps set in 26 other Missouri counties. Japanese beetle now occurs in at least 52 localities in INDIANA. The Federal quarantine prohibits shipment of certain plants and plant products to States north and west. Japanese beetle continues to move into southern counties of MICHIGAN. It also continues to spread in SOUTH CAROLINA.

A SCARAB (Ceratophyus sp.) attracted attention in CALIFORNIA by burrowing in a golf course in Vandenberg Air Force Base in Santa Barbara County. Investigation revealed an infestation involving 50,000 acres of reservation land. This scarab is more or less restricted to sandy soil and uncultivated areas under native shrubs. It occasionally infests golf courses and new lawns with burrows extending 6-8 feet deep. This species is apparently inactive during the dry season and is stimulated by moisture. No commercial damage has occurred in the State. A scarab (Glarensis knausi) was collected at ultraviolet light in Kanab Canyon, Kane County, UTAH, the night of September 29. Det. by O. L. Cartwright. Anomala sp. was common in Japanese beetle traps in Houston, Harris County, TEXAS, during August. Pelidnota punctata was collected in a light trap in RHODE ISLAND, in Kingston, Providence County, June 29.

A MAY BEETLE (Phyllophaga koehleriana) caused considerable annoyance around premises in OKLAHOMA when large numbers emerged in late May and early June in Cimarron County. Adults were removed by the wheelbarrowful.

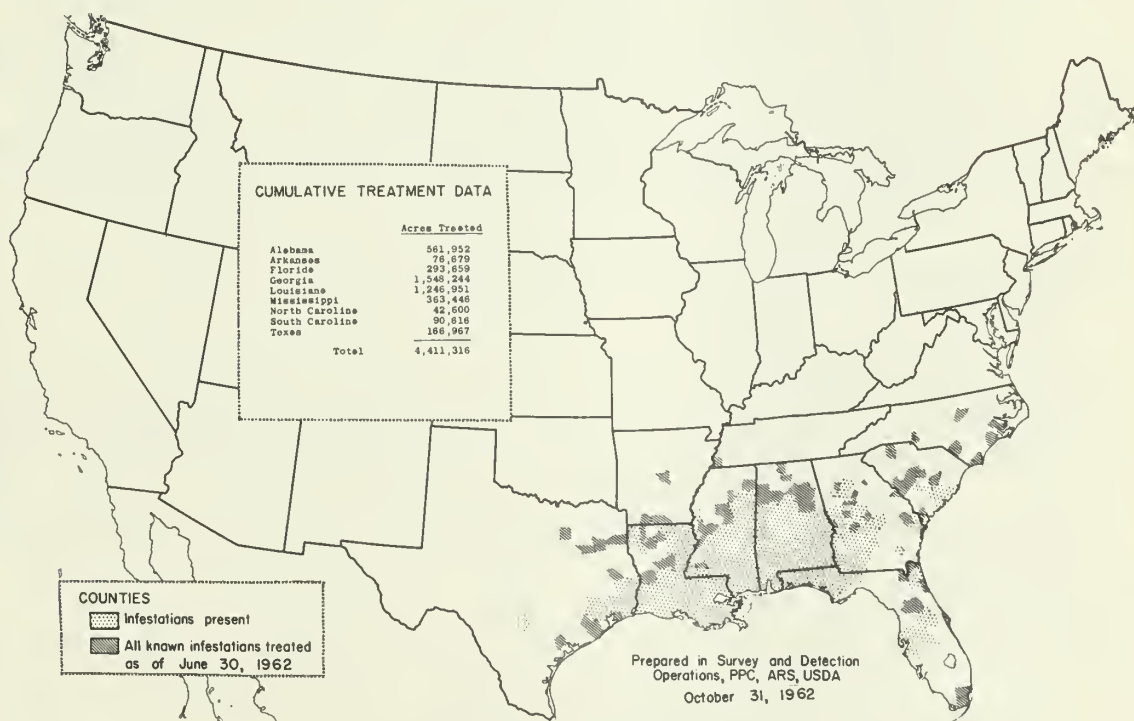
An important new area of WHITE-FRINGED BEETLES (Graphognathus spp.) occurrence was discovered in October at Norfolk, VIRGINIA. Further surveys showed that white-fringed beetles are established at 14 widely separated locations involving 3,000 acres in the city. Both Graphognathus leucoloma imitator and G. l. striatus have been identified from Norfolk. Incipient infestations of white-fringed beetles were also found in ARKANSAS and TENNESSEE, and a single specimen was recovered in KENTUCKY near the Tennessee-Kentucky State line. All the Arkansas infestations and the one in Kentucky have been treated. Since the beginning of the white-fringed beetle program, infestations have been found on approximately 1.3 million acres. As of January 11, 1963, slightly more than 398,000 acres of this total have been given eradication treatment. This includes 54,612 acres treated in fiscal year 1962 (end of June 1962). Persistent control and eradication treatments have virtually eliminated economic losses from these pests. New parish records were recorded in LOUISIANA and new county records in the States of MISSISSIPPI, ALABAMA and GEORGIA.

A WEEVIL (Curculio nasicus) infestation found in a child's bed in MASSACHUSETTS was apparently from acorns hidden there. Another weevil (Compsus auricephalus) continues heavy in a small area in Pope County, ARKANSAS. There has been little damage to date. A special effort to find overwintering forms was negative. LESSER MEALWORM (Alphitobius diaperinus) adults and larvae heavily infested litter in a broilerhouse in Wicomico County, MARYLAND, in October, and the species was very abundant in litter in several poultry establishments in PENNSYLVANIA. A DARKLING BEETLE (Blaps lethifer) occurred in very heavy populations in a horse stable at the Athens County fairgrounds in OHIO. During mid-November, over 200 adults and larvae were collected within a square yard. SAP BEETLES (Glischrochilus spp.) were of considerable nuisance in INDIANA, disrupting picnics and other outdoor activities. They increased during the year,

although complaints during late August and September were not as numerous as expected. Although Glischrochilus quadrisignatus was nearly as prevalent as in other years in corn fields in WISCONSIN, it caused less concern to picnickers than during 1961. A STAG BEETLE (Pseudolucanus capriolus) was collected at a light in Brandon, Hillsborough County, FLORIDA. This represents the first record of the family Lucanidae from Florida. This same species emerged in large numbers in RHODE ISLAND on a property in Warwick, Kent County, in mid-July.

Other miscellaneous Coleoptera reported include BROAD-NECKED ROOT BORER (Prionus laticollis) in RHODE ISLAND where it was more numerous than usual in mid-July. BLACK BLISTER BEETLE (Epicauta pennsylvanica) also was more numerous than usual in southwestern MICHIGAN. In Little Rock, ARKANSAS, adults of a POWDER-POST BEETLE (Trogoxylon prostomoides) emerged from bamboo baskets imported from Mexico. A LEAF BEETLE (Calligrapha sp.) was commonly collected in coastal rice fields of TEXAS during August.

Eradicative treatments for IMPORTED FIRE ANT (Solenopsis saevissima richteri), since this program was initiated, have been applied to approximately 4.5 million acres. This program has prevented long-distance artificial spread, reduced populations and protected both rural and urban areas from the damage and annoyance of this pest. Imported fire ant was found for the first time in the delta section of the State of MISSISSIPPI, in Washington, Issaquena and Sharkey Counties. Control program continues in that State and in ARKANSAS. New county records were made in the States of FLORIDA, GEORGIA and TEXAS also.



Status of the Imported Fire Ant.

Other ants reported include LARGER YELLOW ANT (Acanthomyops interjectus) in RHODE ISLAND, where a spectacular, widespread emergence of alates was noted in Providence, Kent and Washington Counties. Also in Rhode Island, PAVEMENT ANT (Tetramorium caespitum) samples, containing workers and alates, were received routinely from all quarters of the State. Complaints were most numerous during period of termite swarming.

A SCOLIID WASP (Scolia dubia) was very abundant around homes in southern parts of PENNSYLVANIA. This same wasp was active about lawns in MARYLAND during late August and September. It caused concern to homeowners in 4 counties. In VIRGINIA, a few reports of GIANT HORNET (Vespa crabro germana) and a VELVET ANT (Dasymutilla occidentalis) were received. A female specimen of an ICHNEUMON (Poly-sphincta albipes) was collected in FLORIDA in Indian River County on May 18, 1957. Det. by L. M. Walkley. This species was known only from the type specimen (male) collected in Brevard County, Florida, prior to 1880.

A LEPTOPODID BUG (Patapius spinosus), which was unknown in the Western Hemisphere prior to 1941, was collected in CALIFORNIA. No other collections were reported until 1962 when medium numbers were found under boards in Willows, Glenn County, and in Nord, Butte County.

LEAFHOPPERS (Draeculacephala spp.) were numerous and caused much annoyance in ILLINOIS where they were attracted to lights. A leafhopper (Homalodisca triquetra) was commonly collected in Japanese beetle traps in Houston, Harris County, TEXAS, during August. Negosiana dualis was collected in FLORIDA at Davie, Broward County. The types are from Brownsville, Texas, and the only locations in literature are from Texas.

CITRUS WHITEFLY (Dialeurodes citri) was reported by a homeowner in Sacramento, CALIFORNIA, early in December 1962. The pest infests miscellaneous shrubs and citrus. Eradicative treatment will be applied to approximately 250 city blocks. A buffer area will also be treated, bringing the total number of blocks involved to over 250. This species has been eradicated many times during the past 40 years, but it is always subject to reintroduction. A MEALYBUG (Cucullococcus vaccinii) was collected from Vaccinium parvifolium in Gasquet, Del Norte County, CALIFORNIA. This was the first record of a field infestation in the State. An APHID (Macrosiphum cockerelli) was less numerous than normal on Rudbeckia sp. in Weber and Cache County mountains in UTAH during the summer. APPLE GRAIN APHID (Rhopalosiphum fitchii) was numerous during the fall flight at Logan, Cache County. A CICADA (Okanagana sp.) was heavy in most areas of NEVADA and, in addition to damage to pinyon pine, this species caused concern to residents.

The spring migration of PAINTED LADY (Vanessa cardui) through UTAH during 1962 was not conspicuous, although it was observed in some localities.

A PSYCHID MOTH (Apterona crenulella) became extremely abundant in parts of Salt Lake County, UTAH. Sometimes thousands of this snail-like casemaker were attached to the walls of homes and under the eaves. They were also attached to fruit trees, shrubs, etc. This species was about normal in numbers statewide, however. A TINEID MOTH (Achanodes antipathetica) was collected for the first time in the United States at a light in Miami, FLORIDA. This species is known in Puerto Rico and Jamaica. WHITE-LINED SPHINX (Celerio lineata) populations, which were statewide in NEVADA, caused much concern but very little economic damage. SALT-MARSH CATERPILLAR (Estigmene acrea) built up in large numbers in west central and western areas of TEXAS during the summer months. Adults of POLYPHEMUS MOTH (Antheraea polyphemus) were active in Kent County, RHODE ISLAND, in mid-June.

MEXICAN FRUIT FLY (Anastrepha ludens) does not occur in CALIFORNIA, but it was trapped south of the United States-Mexican border on several occasions during 1962. Continuous alert is maintained in the project area of San Diego County, where 1,600-2,000 traps are maintained and protective bait sprays are applied to host trees and roadside trees at regular intervals. Inaccessible canyon areas are sprayed by airplane. Trapping of ORIENTAL FRUIT FLY (Dacus dorsalis) was negative in California also. No adults have been taken since 1960 when 3 flies were trapped in Orange and Santa Barbara Counties. This pest has never become established in California.

A SOLDIER FLY (Hermetia illucens) became a problem in CALIFORNIA in houses and around yards in several localities. A NEMESTRINID FLY (Neorhynchocephalus volaticus) was collected for the first time in FLORIDA on July 30 in an area 7 miles north of Lake City, Columbia County. MARCH FLIES attracted attention in several areas of TEXAS.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla) concentrated on a property on Block Island, Newport County, RHODE ISLAND, in late August. A SNOWY TREE CRICKET (Oecanthus argentinus) was extremely numerous on rabbitbrush (Chrysothamnus sp.) flowers in Wellsville Canyon, Cache County, UTAH, during late August. Det. by J.A.G. Rehn.

RING-LEGGED EARWIG (Euborellia annulipes) was reported for the first time in NORTH DAKOTA. Specimens from an established colony in North Dakota State University greenhouse were determined by I. J. Cantrall. The normal range of this labidurid earwig is Southern United States.

A SMINTHURID SPRINGTAIL developed phenomenal numbers in wet turf in Kingston, Washington County, RHODE ISLAND, in mid-May. This subsided under drier conditions. In PENNSYLVANIA, Achorutes nivicola was quite abundant in the north-eastern part of the State.

BOOKLICE (Liposcelis spp.) were extremely abundant on a wide variety of trees throughout VIRGINIA. Various species were most commonly observed on magnolia, crapemyrtle, holly and redcedar.

A HANGINGFLY (Bittacus pilicornis) was collected at Gainesville, Alachua County, FLORIDA, on April 8, 1961. This apparently constitutes the first record for Florida. Det. by G. W. Byers, 1962.

A SCORPION (Vajovis boreus) was found invading a residence in Auburn, Placer County, CALIFORNIA. A single specimen of a new species was collected in Bakersfield, Kern County, but after treatment no additional specimens were found. Scorpions have been noticeably absent in California during the past few years. A few reports of scorpions in a home and about homes were noted in UTAH during the summer from southern localities. PSEUDOSCORPIONS were found in poultry houses and also under carrion in SOUTH CAROLINA. Many specimens of pseudoscorpions were received from areas just east of the mountains in MONTANA. SOLPUGLIDS were received from Dawson, Glacier, Liberty, Park, Roosevelt, Teton, Wibaux and Yellowstone Counties in MONTANA.

An ACARID MITE (Caloglyphus mycophagus) and two UROPODID MITES (Leiodynchus krameri and Fuscuropoda agitans) are pests of earthworm beds in CALIFORNIA in several localities. When these mites occur, they are generally in heavy populations and interfere with the rearing of earthworms.

A TADPOLE SHRIMP (Apus sp.) was noted in NEBRASKA where two specimens each were received from Dawes and Garden Counties.

A SLUG (Arion ater) was first noted in Crescent City, Del Norte County, CALIFORNIA, in February. Local infestations were found in several areas of Del Norte and Humboldt Counties. This slug has become established and control treatment has been applied.

ADDENDUM TO INTRODUCTION
(CEIR 13(8):2-22-63, pp. 120-121)

The names of the following contributors of summary data are to be included for New York: P. H. Wooley, G. A. Schaefer, J. A. Adams, F. L. McEwen, A. C. Davis and G. G. Gyrisco.

SURVEY METHODS FOR SURVEY ENTOMOLOGISTS

This is a continuation of the work begun by the North Central States Branch, Entomological Society of America, Committee on Insect Surveys and Losses. The members of this committee are Clarence E. White (Chairman), O.H. Hammer and Leroy L. Peters. ^{1/}

CORN EARWORM (Heliothis zea) DAMAGE SURVEY

This survey method is designed for the survey entomologist in collecting information to use in making a reasonable estimate of the loss to field corn caused by corn earworm. Absolute loss figures are impossible to calculate because of the many variables involved. It is believed this method will give reasonably accurate loss figures that will be of value to many people.

This method may not give the researcher the accuracy he desires for individual fields, as it was designed to be used on the Crop Reporting District basis. However, the method of counting the kernels lost and other methods of procedure may be used by the research worker.

Timing of Survey

The survey should be made after at least 75 percent of the ears are dented, because damage will not be complete prior to this time.

Selecting the Fields

Examine at least 20 fields per district and more if time permits. The number of fields surveyed within a district or districts within a State may vary with the corn acreage distribution and is left to the discretion of the survey entomologist. The same fields may also be used for the annual European corn borer fall abundance survey.

Forms for Recording Field Data

A simple form for recording field data is desirable. A standard method of recording facilitates entry of field notes and also transfer of data from the field log. A suggested form is on page 422.

Method of Survey

The sample is obtained by walking 50 steps into the field from the most accessible point. Beginning with the first plant on the observer's right, examine and record the degree of infestation of the first 25 ears. Using the rating key in the upper right hand corner of the Field Record Form, classify each ear according to the number of kernels damaged by corn earworm. At first, the number of damaged kernels will have to be counted, but even with limited experience, the ears can be classed at a glance. The average class of damage for each field can be calculated later in the office. To determine what percent of the ear was damaged, it is necessary to know the total number of kernels on an average size ear. Therefore, take the first and last ear in each field, count the number of kernels in an average row on each ear, and multiply this by the number of rows on the ear. Then, add the number of kernels together for both ears, divide by 2 and record on the field form under remarks.

^{1/} Acknowledgment is due C. C. Burkhardt, Assistant Professor of Entomology, Kansas State University, Manhattan, Kansas, for his assistance in the design and evaluation of this method.

Loss Calculations

The losses are best calculated on the district basis. Losses from all districts are added together to get the total loss for the State. The method of calculation is as follows:

1. Calculate the average class damage for each field, then for each district:
Thus Field No. 1 on Field Survey Form would be calculated as follows:

$$1 \times 2 + 6 \times 3 + 5 \times 4 + 5 \times 5 + 5 \times 6 + 2 \times 7 + 1 \times 8 \div 25 = 4.7$$

Add field averages together and divide by number of fields surveyed in the district to get district average class damage.

2. Calculate the average size ear for each district.
3. Determine corresponding relationship between number of kernels damaged and average class damage for the district. (See step 3 below).

$$\frac{\text{Crop Reporting Service Yield for district (bu.)}}{100\% - \% \text{ loss}} - \text{yield for district (bu.)} = \text{Bu. loss for district}$$

5. Sum total district losses X (\$ per bu.) = Total State loss (\$)
(bushels)

See example given below. Circled numbers refer to corresponding numbers above.

Use the 20 fields on page 422 as an example for a district.

Field	Av. class damage	Av. No. kernels/ear
1	4.7	612
2	2.6	880
3	5.5	672
etc.	-	-
Total 20	56.0	13,576
	(1) 2.8*	679** (2)
	20/56.0	20/13,576

(3) Class Damage	Kernels Destroyed
2.0	11
2.1	12
2.2	13
2.3	14
2.4	15
2.5	16
2.6	17
2.7	18
* 2.8	(19)
2.9	20
3.0	21

$$\begin{array}{r} .0279 = 2.8\% \text{ loss} \\ **679 \quad 19.0000 \\ \quad 1358 \\ \quad 5420 \\ \quad 4753 \\ \quad 6670 \\ \quad 6111 \\ \quad 559 \end{array}$$

- (4) From Crop Reporting Service For District

Av. yield/acre = 50 bu.
100,000 acres harvested
yield for district = 100,000 X 50 = 5,000,000 bu.
Then $\frac{5,000,000 \text{ bu.}}{97.2\%}$ - 5,000,000 bu. = 144,033 bu. loss for district

CORN EARWORM FIELD CORN DAMAGE SURVEY

(State)

DATE September 10 1962
 OBSERVER Joe Smith
 DISTRICT NE

RATING KEY

CLASS	KERNELS DAMAGED
0	0
1	1 - 10
2	11 - 20
3	21 - 30
4	31 - 40
5	41 - 50
6	51 - 60
7	61 - 70
8	71 - 80
9	81 - 90
10	91 or more

FIELD NO.	CLASS DAMAGE											AV. CLASS DAMAGE	REMARKS
	0	1	2	3	4	5	6	7	8	9	10		
1			/	THL /	THL	THL	THL	//	/			4.7	612 kernels per ear
2	////	THL	////	///	THL	//	/	/				2.6	880 " " "
3			/	/	THL	THL	THL /	THL	//			5.5	672 " " "
4		///	THL THL	THL	////	/						2.6	756 " " "
5	THL	THL THL	THL	///								1.3	848 " " "
6	"	"	THL	THL	THL	////						3.0	572 " " "
7	THL	////	////	THL	///							0.8	528 " " "
8		///	THL	THL	THL	/	/					2.8	774 " " "
9	////	THL	THL	///	///	///	///					2.2	736 " " "
10	THL	THL	THL	////								1.4	546 " " "
11	/	THL	THL THL	THL	///	/						2.3	720 " " "
12	THL	THL	THL	///								1.1	462 " " "
13	THL	THL	THL	///								1.3	578 " " "
14	////	THL	THL	///	///	THL	////					1.3	846 " " "
15	///	////	///	///	///	THL	////					3.2	846 " " "
16			///	THL	THL	////	///	///				4.2	576 " " "
17			///	THL	THL	THL	THL	////				5.2	568 " " "
18		///	THL	THL	THL	THL	///					3.6	688 " " "
19	///	////	THL	THL	///	///	///	///				2.0	648 " " "
20			///	THL	THL	THL	///	///				4.9	720 " " "
												2.8	679 " " "

UNITED STATES DEPARTMENT OF AGRICULTURE

WASHINGTON 25, D. C.

Official Business

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

