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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Larval damage by ALFALFA WEEVIL to alfalfa reported in Delaware, Maryland, Pennsylvania, North Carolina, South Carolina and Georgia; adults active in Ohio, Colorado and Utah. CLOVER LEAF WEEVIL larval damage to clover and alfalfa in Illinois ranged from noneconomic to moderate; larvae reported in Delaware, Missouri, Wisconsin, Nebraska, Kansas and adults active in Utah. (p. 365). Some GREENBUG controls on wheat continue in northwest Oklahoma and in several Texas counties. (p. 367). Survival of EUROPEAN CORN BORER larvae in Dane-Green-Rock County area of Wisconsin 75 percent; mortality averaged 22.5-37.5 in southeast South Dakota and 17.5-40 in east central part of same State. (p. 368). BROWN WHEAT MITE continues troublesome on wheat in Comanche and Clark Counties, Kansas; heavy and damaging to wheat and barley in Canadian County, Oklahoma; and counts 2,000-3,000 per foot in many parts of Texas Panhandle, but apparently causing little damage. (pp. 368-369). Winter survival of CEREAL LEAF BEETLE adults appears to be high in Michigan; approximately 60 percent in favored sites as opposed to 30 percent survival during 1962-63 winter. (p. 369).

Large populations of POTATO PSYLLID causing many potato growers in Maricopa County of Arizona to use multiple control applications. (p. 372).

Survival of EUROPEAN PINE SHOOT MOTH in Wisconsin 20 percent; relatively high compared with 1963. Infestations of PINE NEEDLE SCALE increased in Christmas tree plantations in northern Cayuga County, New York; a problem on pines at Storrs, Connecticut; and severe on Austrian pine at Roy, Weber County, Utah. (p. 374). FOREST TENT CATERPILLAR and another species of tent caterpillar appear to be considerably worse than past several years in Texas. (p. 375).

ROCKY MOUNTAIN WOOD TICK present in unusual numbers in sagebrush desert land areas in southeast Idaho. CLOVER MITE continues a nuisance in homes in several States and invasions of homes by BOXELDER BUG increasing. (p. 379).

SOME FIRST APPEARANCE RECORDS OF THE SEASON

ALFALFA WEEVIL adults in Utah, Colorado and Ohio; LESSER CLOVER LEAF WEEVIL adults in Delaware; STRIPED FLEA BEETLE in southeast Ohio; TARNISHED PLANT BUG adults in Delaware, Pennsylvania, Ohio, Illinois and Nebraska; RAPID PLANT BUG nymphs in Illinois; HESSIAN FLY adults in Kansas; MEADOW SPITTLEBUG nymph in Pennsylvania; ALFALFA CATERPILLAR larvae in Delaware; FORAGE LOOPER larvae in Kansas; ARMYWORM adults in Wisconsin; BLACK CUTWORM adults in Missouri; EUROPEAN RED MITE nymphs in Ohio; PEAR PSYLLA egg laying underway in Massachusetts and, Connecticut, and nymphs present April 2 in Washington; APPLE APHID nymphs in Massachusetts and Connecticut; IMPORTED CABBAGEWORM adults in Delaware, Michigan and Pennsylvania; GREEN PEACH APHID (young and alate adults) April 2 in Washington, and hatching underway in Colorado; SARATOGA SPITTLEBUG in Florida; EUROPEAN PINE SAWFLY eggs in Ohio; SPRUCE SPIDER MITE eggs hatching in Maryland; EASTERN TENT CATERPILLAR larvae and tents in Delaware and Maryland; FACE FLY adults in South Carolina on March 27; and an INSIDIOSUS FLOWER BUG (Orius insidiosus) in Arkansas.

DETECTION

New State records were a MEALYBUG (Rhizoecus americanus) in Florida (p. 376), and a HAIRSTREAK BUTTERFLY (Incisalia henrici) in Delaware (p. 381). WESTERN DRYWOOD TERMITE (Incisitermes minor) was recorded in Nye County, Nevada; new county record and second record for State. (p. 375).

SPECIAL REPORTS

Quarterly Citrus Insect and Mite Outlook in Florida - April through June. (p. 370).

Potato Psyllid Survey, Spring Breeding Areas of Texas and Southeastern New Mexico. (p. 372). Populations heavy in Big Spring, San Angelo and Del Rio areas of Texas.

Report of Survival of Boll Weevil as Determined by Surface Trash Examinations during the Spring in Alabama and Tennessee. (p. 373). Counts of live weevils per acre appear to be relatively low.

Status of the Screw-worm in the Southwest. (p. 377). Only 3 screw-worm cases reported during the period April 12-18 in Texas.

Summary of Insect Conditions in the United States - 1963

- Stored-product Insects (p. 384).
- Beneficial Insects (p. 386).
- Miscellaneous Insects (p. 390).
- List of Contributors (p. 392).

Reports in this issue are for weekending April 17, unless otherwise indicated.

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-APRIL TO MID-MAY 1964

The Weather Bureau's 30-day outlook for mid-April to mid-May calls for temperatures to average above seasonal normals in the eastern third of the Nation with greatest departures in the Northeast. Below normal temperatures are predicted for the western half of the country except the Far Southwest, with coldest weather in northern portions of the Plains and Rockies. In the intermediate zone, near normal averages are in prospect. Precipitation is expected to exceed normal in all areas lying between the Rockies and the Appalachians except for near to below normal over the Southern Plains. Subnormal amounts are anticipated over the Southwest and near normal amounts in the remainder of the Nation.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING APRIL 20

Changeable spring weather was mostly warm and wet in the eastern half of the Nation, dry in the West, and cool in the northwestern States. At the beginning of the week, heavy thunderstorms advanced eastward along a cold front that extended from a Low centered in Iowa southward to the lower Mississippi River Valley. Showers and thunderstorms occurred ahead of the front bringing generous rains to Mississippi, Alabama, and the southern Appalachians and lighter rains over the rest of the eastern third of the Nation. Strong winds raised dust over Kansas, Oklahoma, and Texas. A few snow flurries occurred over the northern Rocky Mountains. By Tuesday evening, the storm was diminishing and at midweek fair weather prevailed over most of the Nation. By Thursday morning, a major storm was developing over the northern Great Plains and arctic air pushed into Montana and the Dakotas. Northerly winds, freezing temperatures, cold rain, and snow accompanied the storm. Warm humid air flowed northward ahead of the

.(continued on page 382)

CEREAL AND FORAGE INSECTS

ALFALFA WEEVIL (*Hypera postica*) - OHIO - Adults 2 per 50 sweeps on alfalfa near Arabia, Lawrence County; no larvae present. First report of season. (Treece, Lyon). **PENNSYLVANIA** - Very small larvae present on alfalfa in Westmoreland County on April 14. (Udine). Larvae 1 per 15 alfalfa plants in Armstrong and Butler Counties; some larvae in second stage; few adults noted. (Adams). Hatching in southeast area (Menusan) and south central area (Pepper). **DELAWARE** - First-stage to half-grown larvae present to common on alfalfa in New Castle and Kent Counties; injury light in most areas. Adults averaged 1-2 per 10 sweeps in some fields in these areas. (Burbutis). **MARYLAND** - Larvae infesting over 70 percent of alfalfa plants checked in Dorchester and Worcester Counties; noticeable injury evident. Adults averaged 9 per 10 sweeps on alfalfa in Worcester County. (U. Md., Ent Dept.). **VIRGINIA** - Light larval infestations encountered in one field each of the following counties: Floyd, Grayson, Lee and Russell. Larvae per 10 tips in these 4 fields averaged 6, 7, 10 and 4, respectively. All larvae either first or second instar. No larvae detected in other fields checked in these counties, nor were any found in Scott, Washington, Tazewell and Giles Counties. All eggs examined recently laid. (Tarpaley). Larvae averaged 2-3 per tip locally in Culpeper County. (Rowell, Hutcheson; Apr. 7). **NORTH CAROLINA** - Heavily damaged alfalfa in Caswell, Rockingham, Wake and Franklin Counties; 4 of 10 fields observed in Wake and Franklin Counties in good condition, but rest heavily damaged. One of these fields had 80 larvae per sweep and others had just been treated. Some pupation observed. (Jones, Falter, Mount). **SOUTH CAROLINA** - By week of April 6, more damage showing up in Laurens County from treated fields than previously reported. Damage noted in farmer field in Anderson County where field research began on April 11. (Tombes). **GEORGIA** - First to fourth instars observed in 3 northwest area alfalfa fields. All other fields showed no feeding damage. Alfalfa 12-14 inches tall. (Johnson). Larvae 115 per sweep on untreated alfalfa; 2 per sweep on treated alfalfa in Spalding County. (Tippins). **UTAH** - Adults active in alfalfa at Morgan, Morgan County, and at Uintah, Weber County. (Knowlton). **WYOMING** - No adult activity found in alfalfa in Big Horn, Hot Springs and Fremont Counties. (Fronk, Marks). **COLORADO** - Adult emergence underway in Weld County. (Ext. Serv., Boyes).

CLOVER LEAF WEEVIL (*Hypera punctata*) - DELAWARE - Half-grown to nearly full-grown larvae averaged 3-4 per clover plant in areas of New Castle and Kent Counties; caused moderate injury. (Burbutis). **ILLINOIS** - Larval populations per square foot in clover and alfalfa averaged 4.0 in northwest, 14.5 in west, 8.8 in central, 14.9 in west-southwest, 8.7 in east-southeast and 10.4 in southwest district. Few larvae spun cocoons in extreme southern area, but none actually pupated. Damage to clover ranged from noneconomic to moderate. The large decrease in population shown in west and west-southwest districts due in part to an actual decrease and in part to fact that different parts of these districts surveyed this week. Some larvae now dying from disease. (Ill. Ins. Rpt.). **WISCONSIN** - Larvae ranged from first to third stages in more advanced alfalfa. (Wis. Ins. Sur.). **MISSOURI** - Larvae 1-2 per alfalfa plant in southeast. (Houser, Thomas, Wood). **KANSAS** - Occasional larva observed on alfalfa in east central and northeast areas. (Peters). **NEBRASKA** - Occasional larva present in Lancaster County alfalfa. (Bergman). **UTAH** - Adults active in alfalfa at Midvale, Salt Lake County. (Knowlton).

AN ALFALFA WEEVIL (*Hypera brunneipennis*) - CALIFORNIA - Medium populations on alfalfa in Pauma Valley, San Diego County. (Cal. Coop. Rpt.).

CLOVER HEAD WEEVIL (*Hypera meles*) - ALABAMA - This species and *H. nigrirostris* (larvae and adults) light on crimson clover in Dallas, Lowndes and Lee Counties. *H. meles* dominant and apparently laying eggs; some first-stage larvae feeding. (Alsobrook, et al.).

LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) - DELAWARE - First adults of season noted on alfalfa in New Castle County. (Burbutis).

CLOVER ROOT CURCULIO (Sitona hispidula) - KANSAS - Occasional adult observed on alfalfa in east central and northeast areas. (Peters). ILLINOIS - Curculios, primarily this species, ranged 0-20 (averaged 7.5) per 100 sweeps in clover and alfalfa in southwest district. (Ill. Ins. Rpt.).

STRIPED FLEA BEETLE (Phyllotreta striolata) - OHIO - Light to moderate in red clover in southeast. First report of season. Most abundant flea beetle found in State at present. (Galford, Lyon).

PEA APHID (Acyrthosiphon pisum) - OREGON - Counts on alfalfa in Umapine area ranged 0-20 per tip with 50 percent alates at high infestations. All stages found including second generation from overwintering eggs. (Halfhill). NEVADA - Only occasional specimens found in alfalfa hay fields in Lathrop Wells, Nye County. (Bechtel, Zoller). ARIZONA - Averaged 150-250 per 100 sweeps in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Not a problem in alfalfa statewide; most fields in Dona Ana County appear free of this pest. (N.M. Coop. Rpt.). OKLAHOMA - Continues at generally low levels throughout most of State on alfalfa; ranged 10-250 per 10 sweeps in south central counties with one report of 500 per 10 sweeps from Jefferson County. Limited treatments underway in Payne County. (Okla. Coop. Sur.). ARKANSAS - Averaged 25-30 per sweep of 15-inch net on alfalfa in Pulaski County, central area. Somewhat lower on crimson clover in several southern counties. (Ark. Ins. Sur.). MISSOURI - Average per 10 sweeps 5 in Cape Girardeau County, less than 1 on alfalfa in Perry County and 300 in New Madrid County on hairy vetch. (Houser, Thomas, Wood). Counts 25 per alfalfa plant in Pemiscot County. (Harrendorf). KANSAS - Ranged from a trace to 1,400 per 100 sweeps on alfalfa in east central and northeast districts. Small degree of parasitism (5 percent) noted in Coffey County. (Peters). NEBRASKA - Very few specimens present in southeast areas. (Bergman). WISCONSIN - Nymphs half grown in more advanced alfalfa; relatively high counts in Brodhead area, averaged 2 per leaflet in marginal area of field. Most of feeding occurring on folded leaflets but on higher portions of plants. (Wis. Ins. Sur.). ILLINOIS - Ranged 0-210 (averaged 31.25) per 100 sweeps in clover and alfalfa in southwest district; much lighter in other districts. (Ill. Ins. Rpt.). OHIO - Light on red clover and alfalfa in several southeastern counties; range per 50 sweeps 5 in Morgan County to 25 in Gallia County. No specimens found north of U.S. Route 40. (Lyon). PENNSYLVANIA - Appearing on alfalfa in Armstrong and Butler Counties. (Adams). MARYLAND - Building up rapidly on alfalfa in Eastern Shore counties; ranged 12-50 per sweep. (U. Md., Ent. Dept.). DELAWARE - Increasing rapidly on alfalfa; counts per 100 sweeps averaged 500 in New Castle County and 1,000 in Kent County. (Burbutis). VIRGINIA - Practically none observed in alfalfa examined in Floyd, Grayson, Lee, Russell, Scott, Washington, Tazewell and Giles Counties. (Tarpley).

SPOTTED ALFALFA APHID (Theroaphis maculata) - NEVADA - Heaviest counts averaged 2 per sweep in alfalfa hay fields in Lathrop Wells, Nye County. (Bechtel, Zoller). NEW MEXICO - Winged adults relatively abundant in few fields of alfalfa in Dona Ana County near Texas line. Populations remain light in most fields in northern Eddy County. Few treated fields had to be treated twice to obtain adequate control. (N.M. Coop. Rpt.). OKLAHOMA - Counts remain generally low on alfalfa throughout State. Ranged 0-50 per 10 sweeps (averaged fewer than 25 per 10 sweeps) in south central counties. Ranged up to 1,500 per 10 sweeps in Jefferson County. Counts low in southwest and west central counties. (Okla. Coop. Sur.). ARKANSAS - Surveys negative in Pulaski County. (Ark. Ins. Sur.). KANSAS - None found in east central and northeast areas. (Peters). NEBRASKA - One specimen found in 3 fields surveyed in Howard County; none found in fields checked in Dundee County. Alfalfa growth comparable throughout State. Eggs hatching. (Manglitz, Stevens). WISCONSIN - Eggs hatched in alfalfa at observation site near Brodhead. Counts ranged as high as 12 per leaflet in marginal area of field and averaged about 4 per leaflet. Doubtful if all eggs hatched yet; practically all confined to lower portions of plants. (Wis. Ins. Sur.).

YELLOW CLOVER APHID (Theroaphis trifolii) - ILLINOIS - Ranged 0-90 (averaged 30) per 100 sweeps in clover in southwest district. (Ill. Ins. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - First adults of season noted on alfalfa in Kent County areas. (Burbutis). PENNSYLVANIA - Few noted on alfalfa in Butler and Armstrong Counties. (Adams). OHIO - Heaviest populations 1 per sweep in alfalfa near Gallipolis, Gallia County. No adults collected north of U.S. Route 40. (Lyon). ILLINOIS - Adults ranged 0-30 (averaged 5) per 100 sweeps in clover and alfalfa in southwest district. Lighter in other districts. (Ill. Ins. Rpt.). NEBRASKA - Adults occur in very small numbers in southeast area legumes. (Bergman).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Adults found in alfalfa in southern counties; 2-10 per 100 sweeps in Eddy and Dona Ana Counties. Only an occasional nymph noted. (N.M. Coop. Rpt.). ARIZONA - Averaged 20-30 per 100 sweeps on alfalfa in Graham County. (Ariz. Coop. Sur.). UTAH - Common on roadside weeds at Collinston, Box Elder County; species largely L. elisus. (Knowlton).

RAPID PLANT BUG (Adelphocoris rapidus) - ILLINOIS - First nymphs of season observed in extreme southwestern area. (Ill. Ins. Rpt.).

MEADOW SPITTLEBUG (Philaenus spumarius) - PENNSYLVANIA - One nymph found on clover April 14 in Westmoreland County. (Udine).

THREE-CORNED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Averaged 30-40 per 100 sweeps on alfalfa in Graham County. (Ariz. Coop. Sur.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - WISCONSIN - Adults common in most alfalfa; as high as 8 per 25 sweeps locally in Iowa County. (Wis. Ins. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - DELAWARE - First larvae of season noted on alfalfa in area of New Castle County. (Burbutis). OKLAHOMA - Occasional larvae noted in south central area alfalfa. Adult activity light in most areas. (Okla. Coop. Sur.).

FORAGE LOOPER (Caenurgina erechtea) - KANSAS - A small larva found in alfalfa in Shawnee County; first specimen of season. (Peters).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Light, 0-4 per 10 sweeps, on alfalfa in south central area. (Okla. Coop. Sur.).

THRIPS - NEW MEXICO - Light infestations on alfalfa in northern Eddy County; extremely light in Dona Ana County alfalfa. (N.M. Coop. Rpt.).

GREENBUG (Schizaphis graminum) - TEXAS - Populations 500-3,000 per foot in isolated area within Randall and Swisher Counties. Some aerial spraying conducted, but Hippodamia convergens (convergent lady beetle) populations increasing rapidly; little damage expected. Greenbug population 1,000 per foot in one Potter County field. Ranged from almost nil to 3,000 per foot in Deaf Smith, Castro and Parmer Counties; however, few fields with this high number. Considerable insecticidal control applied in latter 3 counties - much of which was unnecessary. (Daniels). Occasional specimens found on small grains in Denton and Wise Counties. (Turnley, Meisch). KANSAS - Occasionally seen in some wheat in Johnson and Douglas Counties, east central area. Counts less than 20 per 100 sweeps. (Peters). OKLAHOMA - Checks throughout east central, south central, southwest and west central areas show infestations ranged noneconomic to light. Much of wheat jointing with some heading in south central area and threat of damage past. Controls continue in northwest counties. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - CALIFORNIA - Nymphs and adults light on barley in Chowchilla, Madera County. (Cal. Coop. Rpt.). KANSAS - Found in all wheat and barley examined in east central and northeast areas; ranged from a trace to 100 per 100 sweeps. (Peters). MISSOURI - Averaged 5 per 10 sweeps in Bollinger, Stoddard and New Madrid Counties, southeast. (Houser, Thomas, Wood). ILLINOIS - Ranged 0-90 (averaged 14) per 100 sweeps in wheat in southwest district. None observed in west-southwest district. (Ill. Ins. Rpt.). WISCONSIN - Alates

commenced appearing in rye fields in southern counties; populations insignificant at present. (Wis. Ins. Sur.).

APHIDS - ALABAMA - Continue to feed, damaging and multiplying at an extremely high rate, on crimson clover, vetch and caley peas in Dallas, Lowndes, Macon and Lee Counties. Several hundred per sweep easily collected in many areas. (Alsobrook, et al.).

CHINCH BUG (Blissus leucopterus) - TEXAS - Light infestations appearing on grain sorghum in lower Rio Grande Valley. (Texas Coop. Rpt.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH DAKOTA - Percent winter mortality of overwintering larvae averaged 37.5 in Clay County, 30 in Lincoln County, 35 in Yankton County, 22.5 in Union County, 17.5 in Minnehaha County and 40 in Moody County. (Hintz). WISCONSIN - Larvae appear to have overwintered reasonably well; 75 percent survival in Dane-Rock-Green County area as of April 16. Of the remaining, 18 percent dead and 7 percent in moribund condition. (Wis. Ins. Sur.). MARYLAND - No pupation as of April 15 on lower Eastern Shore, although many larvae appear ready to pupate. (U. Md., Ent. Dept.). DELAWARE - Pupation of overwintered larvae averaged 7 percent in Kent County. (Burbutis).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Examination of overwintered larvae in Bradley County, south central area, showed that no pupation had occurred to April 17. (Ark. Ins. Sur.).

CORN EARWORM (Heliothis zea) - TEXAS - All stages (first instar through full-grown larvae) reported in moderate numbers, approximately one larva per 3 stalks of sweet corn, in Hidalgo County. (Texas. Coop. Rpt.; Page). ARKANSAS - Moth activity decreased; probably due to cooler nights. Only one moth taken at each trap at Hope (southwest) and Kelso (southeast). Few eggs found on crimson clover in southern area; no larvae observed. (Ark. Ins. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - FLORIDA - This species, beet armyworm (Spodoptera exigua) and corn earworm (Heliothis zea) causing light to moderate damage to ears of sweet corn at Plantation, Broward County. (McLean).

ARMYWORM (Pseudaletia unipuncta) - WISCONSIN - Adults began appearing at Middleton blacklight trap on April 15. Total of 7 caught at that location on April 16. (Wis. Ins. Sur.).

ARMY CUTWORM (Chorizagrotis auxiliaris) - COLORADO - Counts 0-2 per linear foot in wheat west of Ault in Weld County. (Jenkins). IDAHO - Populations in range-land areas light to nonexistent in Owyhee and Elmore Counties. (Gittins, ARS personnel).

BLACK CUTWORM (Agrotis ipsilon) - MISSOURI - Adults beginning to fly in Boone County, central area. (Houser, Thomas, Wood).

CUTWORMS - ILLINOIS - Ranged 0-3 (averaged 1.1) per square foot in clover and alfalfa in southwest district, 0-3 (averaged 0.9) in west-southwest district and lighter in other districts. (Ill. Ins. Rpt.).

SOD WEBWORMS (Crambus spp.) - COLORADO - Damaging to lawns in suburban areas of Weld County; some difficulty in control reported. (CACA, Titensor, Ext. Serv., Boyes).

BROWN WHEAT MITE (Petrobia latens) - TEXAS - Moderate, local infestations reported in wheat in Childress County; some controls applied. (Rummel). Counts 2,000-3,000 per foot in many parts of Panhandle, but apparently causing little damage. (Daniels). OKLAHOMA - Light to moderate counts continue in Kiowa, Greer and Harmon Counties; 150-600 per linear foot of row. Heavy and damaging to wheat and barley in Canadian County. (Okla. Coop. Sur.). KANSAS - Continues a problem in Comanche (south central) and Clark (southwest) Counties. Several

reports of mite infested wheat received from Ness County (west central). (DePew). UTAH - Active on winter wheat on dry farms south of Magna, Salt Lake County. (Knowlton).

WHEAT CURL MITE (Aceria tulipae) - KANSAS - Present in planted wheat in trace numbers in Kingman, Harper, Comanche, Meade, Gray, Haskell, Seward, Stevens, Hamilton and Ness Counties based on samples collected April 6-9. Samples collected April 13-14 showed trace counts in Shawnee, Anderson and Lyon Counties; one sample from Osage County severely infested. (Somsen, Peters).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Very light infestations present on small grains in Denton and Wise Counties. (Turney, Meisch). Moderate to heavy populations reported from Baylor County wheat. (Rummel).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Adults noted in trace numbers in most wheat examined in east central and northeast areas; ranged 0-250 per 100 sweeps. (Peters).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Winter survival of adults appears to be high; approximately 60 percent in favored sites as opposed to 30 percent survival during 1962-63 winter. Weather conditions will be important factor in influencing relationship between high beetle numbers now and pest problems later this spring and summer. A cooperative suppression program planned again this season. Aerial treatment to be applied where populations highest. (Ruppel, Turner).

CORN FLEA BEETLE (Chaetocnema pulicaria) - ILLINOIS - Adults ranged 10-110 per 100 sweeps in grass and 0-90 per 100 sweeps in wheat in southwest district. (Ill. Ins. Rpt.).

SEED-CORN BEETLE (Agonoderus lecontei) - KANSAS - Adults flying in large numbers in Finney County on April 10. (DePew). WISCONSIN - Adults appearing in Middleton blacklight trap. (Wis. Ins. Sur.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - TEXAS - Heavy populations causing damage to corn seedlings in localized areas of Brazos County. (Randolph). FLORIDA - This species, striped cucumber beetle (Acalymma vittata) and southern potato wireworm (Conoderus falli) causing light to moderate damage to at least 20-25 acres of 2,200-acre field of corn having plants 4-8 inches high at Oklawaha, Marion County. (Dekle, Kuitert, Habeck).

WIREWORMS - TEXAS - Moderate, local infestations of undetermined species reported attacking corn in Guadalupe County. (New).

GREEN JUNE BEETLE (Cotinis nitida) - GEORGIA - Larvae heavy in Bermuda grass pasture in Schley County. (Fletcher, Apr. 3).

JAPANESE BEETLE (Popillia japonica) - MARYLAND - Moderate numbers of larvae occurred in lawn at Carrollton, Prince Georges County. (U. Md., Ent. Dept.).

GRASSHOPPERS - KANSAS - Surveys in Sedgwick, Reno, Pratt and Barber Counties, south central area, yield primarily late instars and adults of overwintering species. Only Melanoplus confusus first instars found to represent first of spring hatch. Overwintering species now adults or late instars include Psoloessa texana, Arphia conspersa, Eritettix simplex, Chortophaga viridifasciata, Pardalophora phoenicoptera and Hadrotettix trifasciatus. (Brusvan). OKLAHOMA - First instars of Melanoplus sp. and Ageneotettix deorum present in Woodward, Beaver and Harper Counties. (Okla. Coop. Sur.). WISCONSIN - Arphia conspersa adults present in Spring Green area and fifth-stage nymph of Chortophaga viridifasciata found in Iowa County. (Wis. Ins. Sur.).

MORMON CRICKET (Anabrus simplex) - OREGON - Emergence of nymphs well along in northern Sherman and Gilliam Counties. Crickets locally abundant in protected

canyons; counts up to 10 per square yard found April 6 and 7. No acreage figures available. (Coleman).

A SAP BEETLE (Meligethes nigrescens) - OREGON - Adults collected on mustard blossoms in Salem area week of April 6. (Goeden).

FRUIT INSECTS

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

This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau's 30-day outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect and Disease Summary" usually released twice each month.

CITRUS RUST MITE (Phyllocoptura oleivora) population will remain near moderate level until early May. A strong upward trend in June will move population into high range. Infestations will be heavier in cold-damaged groves. A majority of groves will harbor CITRUS RED MITE (Panonychus citri) and about 30 percent of groves will develop important infestations. Most of these will be cold-damaged groves. Increase of TEXAS CITRUS MITE (Eutetranychus banksi) is expected until late June, when a majority of groves will have moderate to heavy infestations. Both Texas citrus mite and citrus red mite can occur as mixed populations; hence, the combined count should be considered when evaluating the potential for causing injury. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) will be of little if any importance. A strong buildup of BLACK SCALE (Saissetia oleae) will start in early May and continue through June. Most cold-damaged groves will have lighter infestations than normal, whereas warm groves will have heavier infestations. GLOVER SCALE (Lepidosaphes gloverii) population will continue at high level with buildup expected on interior leaves and fruit through June. An increase of YELLOW SCALE (Aonidiella citrina) is expected on outer leaves and fruit in all districts. Scattered groves will have important infestations. CHAFF SCALE (Parlatoria pergandei) population will remain near current high level. WHITEFLIES will continue to be above normal abundance with the larval form again reaching a peak in May.

Other species will be at or below average levels and none are expected to be of much importance. (W. A. Simanton).

CITRUS THrips (Scirtothrips citri) - ARIZONA - Large populations noted on citrus throughout Salt River Valley of Maricopa County. (Ariz. Coop. Sur.).

COTTONY-CUSHION SCALE (Icerya purchasi) - CALIFORNIA - Medium on citrus in nursery in Davis, Yolo County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - CONNECTICUT - Overwintering eggs appear to be fewer in number than in previous years at Storrs. (Savos, Apr. 8).

PENNSYLVANIA - Eggs abundant on apple in south central area; in black-head stage, which is an early date. Also present on peach, pear and plum in same area.

(Pepper). OHIO - Active nymphs noted in commercial orchard near Pedro, Lawrence County, south central; eggs very heavy on many trees. Several trees could not be adequately sprayed due to steep terrain. (Forsythe, Lyon).

PEAR PSYLLA (Psylla pyricola) - MASSACHUSETTS - Egg laying began April 12 in orchards with southern exposures in western area. (Wave). Adults active and occasional eggs noted on warm, sunny slopes in eastern area April 10. (Whitcomb). CONNECTICUT - Adults noted on pear spurs April 6. Egg laying underway in New Haven, Southington and Storrs April 15. Eggs not numerous, indicating egg laying just begun. (Savos). PENNSYLVANIA - Abundant in pear orchards in southeast area. (Menusan). WASHINGTON - Eggs on pear noted February 21 and first nymphs of season seen April 2 at Zillah, Yakima County. (Capizzi).

APPLE APHID (Aphis pomi) - MASSACHUSETTS - Many nymphs now in second stage in western area; about 50 percent of eggs still unhatched. (Wave). CONNECTICUT - Hatching underway at New Haven and Storrs; few young forms found in Southington and Middlefield areas. Should become more numerous as fruit bud development continues. Overwintering eggs appear more numerous this year. (Savos, Apr. 15). PENNSYLVANIA - This and other species appearing on apple in south central area; numbers fewer than normal. (Pepper).

ROSY APPLE APHID (Anuraphis rosea) - PENNSYLVANIA - More abundant than for several years on apple in south central area. (Pepper).

SAN JOSE SCALE (Aspidiotus perniciosus) - FLORIDA - Scattered on stem and bark of pear at Monticello, Jefferson County. (Miller, Apr. 7).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - CALIFORNIA - Light on crab apple nursery stock in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - CONNECTICUT - Egg masses fairly abundant around Cheshire and appear ready to hatch. (Garman, Apr. 15). Pest appears easier to find this year; growers having trouble in 1963 should be alert this year. (Savos).

LESSER PEACH TREE BORER (Synanthedon pictipes) - MICHIGAN - Active larva removed from peach tree in Grand Traverse County April 6; temperature in 50's. (McManus).

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - WASHINGTON - Larvae infesting tree crotches, not confined to trunk, at Zillah, Yakima County, February 21. (Johnson).

PECAN NUT CASEBEARER (Acrobasis caryae) - ALABAMA - Overwintered larvae very active in poorly kept pecan orchard in Dallas County. In other orchards, well protected in 1963, no infestation or damage noted. (Alsobrook et al.). TEXAS - Larvae on pecan trees in Denton County range up to three-fourths grown. (Turney, Meisch).

HICKORY SHUCKWORM (Laspeyresia caryana) - GEORGIA - Unusually heavy emergence in Albany area, Dougherty County. (Tedders, Oshorn; Apr. 1).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - GEORGIA - Light on leaves of pecans in Lee County. (Tedders, Apr. 8).

PLANT BUGS - ALABAMA - Early nymphal stages very noticeable on early pecan buds in central counties. (McQueen).

SAWFLIES - GEORGIA - Probably Periclista sp., heavy and spotted on pecans. (Oshorn, Apr. 10). TEXAS - Unspecified species light locally on pecan trees in Mason County. (Garrett).

TRUCK CROP INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - ARIZONA - Continues to cause losses on carrots and other plants in Pinal County. (Ariz. Coop. Sur.).

A WEEVIL (Hyperodes texana) - TEXAS - Surveys of 7 carrot fields in Bexar County showed 6 fields infested, with 50 percent of plants infested in one field. Infestation ranged downward from this level in other fields. (Kennedy, Pelham, Meisch).

ASPARAGUS BEETLE (Crioceris asparagi) - DELAWARE - Some injury noted on few small asparagus spears in areas of New Castle County. (Burbutis).

CABBAGE SEEDPOD WEEVIL (Ceutorhynchus assimilis) - OREGON - Adults abundant on mustard blossoms in Marion County week of April 6. (Goeden).

Potato Psyllid Survey, Spring Breeding Areas of Texas and Southeastern New Mexico

The 1964 potato psyllid (Paratriozza cockerelli) survey was completed on April 3. Wild Lycium host plants were late in leafing out in 4 of the 6 areas surveyed, thus delaying the survey. Potato psyllid populations are heavy in the Big Spring, San Angelo and Del Rio areas. Late March information indicates they have increased considerably in the Del Rio area since it was surveyed. Egg deposits are heavy in these 3 areas. (PPC and cooperating agencies).

Potato Psyllid Survey on Overwintering Hosts

Average Number Per 100 Sweeps

<u>State</u>	<u>District</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>
Texas	Big Spring (Howard County)	16	21	255
Texas	San Angelo (Tom Green County)	15	33	155
Texas	Del Rio (Val Verde and Kinney Counties)	2	26	52
Texas	Marathon-Sanderson (Terrell, Pecos and Brewster Counties)	6	29	8
Texas	El Paso (El Paso and Hudspeth Counties)	2	23	25
New Mexico	Las Cruces (Dona Ana County)	0.67	23	9

POTATO PSYLLID (Paratriozza cockerelli) - ARIZONA - Large populations causing many potato growers to use multiple control applications in Maricopa County. (Ariz. Coop. Sur.). NEVADA - No adults or eggs found on Lycium spp. examined in extreme southern Clark County; however, light adult population and light to medium egg numbers present on Lycium spp. in Ash Meadows-Beatty area, Nye County. (Bechtel, Hilbig, Zoller).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Increasing, following usual seasonal pattern, at Hastings, St. Johns County; all stages present, but damage caused mainly by young larvae on unsprayed plants. Control good where spray program followed. (Fla. Coop. Sur.). Infested 56 percent of 200 sampled cabbage plants at Sanford, Seminole County; damage light to heavy. (Desin).

IMPORTED CABBAGEWORM (Pieris rapae) - DELAWARE - Adults common throughout State. (Burbutis). PENNSYLVANIA - Adults flying in south central area. (Pepper). MICHIGAN - Few early spring adults noted flying in Ingham County April 6 when temperatures rose into 60's. (Newman).

DIAMONDBACK MOTH (Plutella maculipennis) - UTAH - Present at Brigham City, Box Elder County. (Knowlton).

OMNIVOROUS LEAF ROLLER (Platynota stultana) - CALIFORNIA - Larvae light on strawberry plants in Selma, Fresno County. (Cal. Coop. Rpt.).

A CUTWORM - GEORGIA - Moderate to heavy on cabbage in Spalding County. (Dupree).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Overwintering eggs in viable condition on early potatoes in Gilcrest area, Weld County, on April 15; deposition moderate to heavy, beginning to hatch. (Simpson, Berry). WASHINGTON - Young forms and apterous adults noted on sugar beets growing on cull piles at beet receiving station at College Place, Walla Walla County, April 2. This is an early record. (Wallis).

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Light to moderate on cabbage in Brooks and Colquitt Counties. (Johnson, Apr. 11). FLORIDA - Infested 54 percent of 200 sampled cabbage plants at Sanford, Seminole County; damage light. (Desin).

THRIPS - NEW MEXICO - Numbers of unspecified species per onion plant decreased in many fields checked; averaged 1-8 per plant in Mesilla Valley. Scattered, spotted, very light infestations noted in few lettuce fields in same area. (N.M. Coop. Rpt.). ARIZONA - Frankliniella spp. infesting carrots and onions in some areas of Pinal and Maricopa Counties. (Ariz. Coop. Sur.). OHIO - Thrips tabaci light on old onions at Columbus, Franklin County, central area; 2-3 per plant. (Galford).

AN OTITID FLY (Euxesta notata) - COLORADO - Maggots found in recently planted field of carrots in Weld County; no seed damage noted. (Hantsbarger).

A GALL MIDGE - COLORADO - Larvae found in soil of recently planted beet field in Weld County. (Marsh).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Heavy on tobacco in plant bed and in the field. (Johnson, Apr. 8). SOUTH CAROLINA - Present on tobacco in localized areas and causing slight injury. (Nettles et al.).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - SOUTH CAROLINA - Infesting tobacco in localized areas; causing slight damage. (Nettles et al.).

GARDEN SPRINGTAIL (Bourletiella hortensis) - MARYLAND - Abundant in tobacco beds in Calvert County. (U. Md., Ent. Dept.).

COTTON INSECTS

Report on Survival of Boll Weevil as Determined by Surface Trash Examinations During the Spring in Alabama and Tennessee - Spring collections of surface trash in Alabama were made March 2-4 in Henry County, March 16-18 in Dallas County, March 24-25 in Tuscaloosa County and March 31-April 1 in Morgan County. Each sample consisted of 18 square feet of trash and soil. Three samples were taken from each of 10 farms in the 4 counties sampled. The four counties selected represent a wide variation of climatic conditions in the State. A total of 120 samples were taken. The average number of live boll weevil (Anthonomus grandis) adults per acre of woods trash was 537 in Henry County, 242 in Dallas County, 81 in Tuscaloosa County and 0 in Morgan County. The average for the State was 215 weevils per acre. There had been very high weevil population counts in all parts of Alabama for several years until the spring and summer of 1963, although no hibernation survival counts are available. Because of undetermined conditions following the severe winter of 1962-63, boll weevil infestations throughout Alabama were spotted. The first emergence of weevils in June was low and thereby most areas of the State escaped severe infestation buildups during the second and even the third generations. By late fall, weevils had again built up to rather high numbers in most areas of the State except localized areas in a few southern sections and more widespread areas of north Alabama. The winter of 1963-64 was not so severe as the 1962-63 winter and it will probably reflect more widespread, early infestations of boll weevil in the State during the first egg-laying period of May and June as suitable squares develop to support the first generation of 1964 weevils. A survey for these conditions will be made in April, May and June in the four counties surveyed in March. (McQueen, et al.).

A survey was made in McNairy County, TENNESSEE, to determine the population of boll weevil which overwintered in the western portion of the State. This county was chosen for the survey because it usually represents the "hot spot" of weevil infestations for the following counties: Hardin, McNairy, Hardeman, Fayette and Shelby. The fall trash examinations indicated that the average number of weevils per acre was 1,089. The spring examinations of cotton field environ trash taken March 17-31 indicated that there were 242 weevils per acre, with 10 percent survival. This is a relatively low number of weevils to overwinter in the southern counties. Spring survival counts in the spring of 1963 were 1,412 live weevils per acre. Even though the 1964 counts are low, with a wet season, there could be

some damage over the regularly weevil infested portion of the cotton-growing area. It is expected that the infestations will be spotted as was the case in 1963. (Locke).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Light numbers appearing on cotton in lower Rio Grande Valley. (Texas Coop. Rpt.). ARIZONA - Small numbers appearing on seedling cotton in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

BLACK FLEAHOPPERS (Spanogonicus spp.) - ARIZONA - Appearing in fields of seedling cotton in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WISCONSIN - Analysis of data from examination of pine samples for overwintering mortality, revealed a 20-percent survival. This is relatively high compared with year before. Populations would appear higher in Manitowoc, Sheboygan and Kewaunee County areas than in more southerly lake-bordering counties. (Wis. Ins. Sur.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - MARYLAND - Pupae ranged moderate to heavy in young loblolly pines in Wicomico County and in Virginia pines at Bowie, Prince Georges County. (U. Md., Ent. Dept.).

PINE NEEDLE MINER (Exoteleia pinifoliella) - MARYLAND - Heavy in stands of Virginia pine near Lanham, Prince Georges County. (U. Md., Ent. Dept.).

SILVER-SPOTTED TIGER MOTH (Halisidota argentata) - CALIFORNIA - Defoliating fir trees in Fieldbrook, Humboldt County. (Cal. Coop. Rpt.).

A TWIG MOTH (Dioryctria ponderosae) - CALIFORNIA - Pupae present on shoots of Monterey pine in Sacramento, Sacramento County. Adults emerged April 6 in San Francisco. (W. Bemis, CDF).

SPRUCE APHID (Aphis abietina) - CALIFORNIA - Heavy on Colorado blue spruce nursery stock in Reedley, Fresno County, and in Redwood City, San Mateo County. (Cal. Coop. Rpt.). OREGON - Winter feeding damage very pronounced on needles of Colorado blue spruce in Multnomah County nurseries. (Larson).

WHITE-PINE APHID (Cinara strobi) - OHIO - Remains of many eggs noted on few white pines near Johnstown, Licking County, central area; ranged 8-14 per needle. (Lyon).

PINE APHIDS - ALABAMA - Eulachnus rileyi and Cinara osborniana very light on pines in Montgomery, Tuscaloosa, Chilton and Lee Counties. E. rileyi was reported from these areas in extremely large numbers during December 1963, with C. osborniana also present in much smaller numbers. Det. by L. M. Russell. (McQueen). See CEIR 13(48):1365, 13(50):1395 and 13(51):1407. CALIFORNIA - Essigella californica medium on pine trees in Vista, San Diego County. (Cal. Coop. Rpt.).

SARATOGA SPITTLEBUG (Aphrophora saratogensis) - FLORIDA - First specimen of season taken in blacklight trap at Gainesville, Alachua County, April 13. (Perry).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NEW YORK - Infestations in Scotch pine Christmas tree plantations in northern Cayuga County increased over 1963; one grower near Martville unable to market any trees in 1963 due to approximately 90 percent infestation on one 4-acre area. (N.Y. Wkly. Rpt., Apr. 13).

CONNECTICUT - A problem on pines at Storrs. (Savos, Apr. 15). UTAH - Severe on Austrian pine at Roy, Weber County. (Knowlton).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - OHIO - Eggs observed on Scotch pine Christmas tree planting near Lisbon, Columbiana County, northeast. Eggs appear more difficult to locate this year compared with one year ago; however, spray program used in planting last year. (Neiswander).

SPRUCE SPIDER MITE (*Oligonychus ununguis*) - MARYLAND - Eggs hatching on Norway spruce and Pfitzer juniper at College Park, Prince Georges County, April 12. (U. Md., Ent. Dept.).

EASTERN TENT CATERPILLAR (*Malacosoma americanum*) - DELAWARE - First larvae and small tents of season noted April 13 on wild cherry in eastern Kent County. (Burbutis). MARYLAND - First tents of season noted April 15 on *Prunus* sp. at Salisbury, Wicomico County. (U. Md., Ent. Dept.). VIRGINIA - Young larvae common on flowering crab apple in Kempsville area of Virginia Beach; first infestation of season. (Sims, Apr. 13). Tents becoming noticeable in Montgomery, Floyd, Carroll, Grayson, Washington, Scott, Lee, Russell, Tazewell and Giles Counties. (Tarpley). GEORGIA - Larvae moving from wild cherry to rose in Spalding County. (Tippins). ARKANSAS - Nests 4-6 inches in diameter observed in upper Arkansas River area. (Ark. Ins. Sur.). OKLAHOMA - Defoliation of native and domestic fruit trees occurring throughout State. (Okla. Coop. Sur.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - TEXAS - This species and *Malacosoma* sp., probably *tigris*, continue to damage live oak and ash trees over most of State. Infestations appear considerably worse than in past several years. (Texas Coop. Rpt.). ALABAMA - Larvae, apparently second and third stages, quite heavy on gum trees in Mobile County area. (Bolton, Seibels). FLORIDA - Light on oak at Dunnellen, Marion County, April 6. (Adkins). VIRGINIA - Larvae noted on cherry-laurel at a location in Chesterfield County; eggs hatched April 3. (Matheny).

GREAT BASIN TENT CATERPILLAR (*Malacosoma fragile*) - NEVADA - Medium larval numbers present on *Prunus fasciculata* (desert peachbrush) in Goodsprings area, Clark County. (Hilbig).

SPRING CANKERWORM (*Paleacrita vernata*) - MICHIGAN - Adult females still active April 5 in Livingston and Ingham Counties. (Newman). MINNESOTA - Moths, tentatively determined as this species, numerous at an unspecified location evening of April 15. (Minn. Ins. Rpt.). NORTH DAKOTA - Light emergence of male adults continues in southeast; small numbers of adult females observed in Fargo area, Cass County. (N.D. Ins. Sur.).

FALL CANKERWORM (*Alsophila pometaria*) - MICHIGAN - Few adult females collected April 5 in Ingham County. (Maki).

A NOCTUID MOTH (*Oncocnemis punctilinea*) - NEVADA - Larvae heavily damaging ash trees in Ash Meadows area, Nye County; some trees almost defoliated. (Bechtel, Zoller).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - NEBRASKA - Present in pupal stage in Lincoln, Lancaster County. (Guinan).

WESTERN DRYWOOD TERMITE (*Incisitermes minor*) - NEVADA - Medium in partly dead leatherleaf ash (*Fraxinus velutina*) in Ash Meadows area, Nye County. This is first record for Nye County and second record for State. (Bechtel, Zoller).

A SOFT SCALE (*Lecanium* sp.) - TEXAS - Reported from wide area of State on various hosts, but oak appears to be predominant. (Meisch).

A GALL WASP (*Callirhytis cornigera*) - NEW YORK - Ready to emerge in Erie and Niagara Counties, western area. Emergence from galls taken into room temperatures occurred within several days. Infestation very severe on pin and red oaks at Grand Isle in Buffalo; branches literally covered with galls over entire trees. Galls continuous on branches for over 1-foot length of twig in some instances. (N.Y. Wkly. Rpt., Apr. 13).

AZALEA LEAF MINER (*Gracilaria azaleella*) - ALABAMA - Very active and mining azalea leaves in cold frames and beds under lath at Semmes, Mobile County. (Seibels).

A PYRALID MOTH (*Herculia phoezalis*) - CALIFORNIA - Larvae and pupae medium on Italian cypress on Point Hueneme Naval Base, Ventura County. (Cal. Coop. Rpt.).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Larvae causing extensive damage to lawns in Elmira, Chemung County. (N.Y. Wkly. Rpt., Apr. 13).

APHIDS - CALIFORNIA - Amphorophora ceanothi adults infesting Ceanothus cordulatus in El Dorado, El Dorado County. Toxoptera aurantii light on camellia plants in a Reedley nursery, Fresno County. (Cal. Coop. Rpt.). ARIZONA - An undetermined aphid damaging roses and bedding plants in nurseries and home plantings in Maricopa County, and Hysteroneura setariae infesting ornamentals in many areas of county. (Ariz. Coop. Sur.). OKLAHOMA - Several species becoming increasingly active on variety of ornamentals across State. Cinara tujafilina heavy on arborvitae in Jefferson County, south central. (Okla. Coop. Sur.). FLORIDA - Aphis gossypii severe on leaves of hibiscus and Aphis spiraecola moderate on leaves of viburnum at Fairville, Orange County. (Griffith, Apr. 3). MARYLAND - Unspecified species infesting azaleas at Carrollton, Prince Georges County, and swamp maple at Crumpton, Queen Annes County. Aphis pomi heavy on buds and new leaves of several flowering crab apple trees at Carrollton. (U. Md., Ent. Dept.). DELAWARE - Aphis pseudohederae adults and nymphs common on new terminal growth of Boston ivy in area of New Castle County. (Burbutis).

COCCIDS - CALIFORNIA - Aspidiotus degenerata heavy on camellia plants in Princeton, Colusa County, and A. degenerata and Parlatoria camelliae heavy on camellia plants in Trowbridge, Sutter County. Parlatoria oleae and Aspidiotus juglansregiae medium on Modesto ash planting stock in Santee, San Diego County. Aonidiella citrina light on viburnum leaves in Sacramento, Sacramento County. Aspidiotus camelliae adults heavy on leaves and twigs of holly nursery stock in Fairfield, Solano County, and A. perniciosus adults heavy on cotoneaster in Martinez, Contra Costa County. (Cal. Coop. Rpt.). ALABAMA - Toumeyella liriiodendri on tulip-trees and Unaspis euonymi and Fiorinia theae on Burford holly and camellia locally in Montgomery and Lee Counties. (Barwood et al.). Lepidosaphes newsteadi, along with undetermined spider mites and arborvitae blight, causing considerable damage to few isolated arborvitae plants in Jefferson County. (McGlohon). Eriococcus azaleae heavy on azaleas in Walker County; seriously damaged home planting. (Keeble). SOUTH CAROLINA - Egg laying by Fiorinia theae noted on camellia at Clemson March 31. (Farrar).

MEALYBUGS - FLORIDA - Adults of Rhizoecus americanus collected on Dieffenbachia sp. at Fern Park, Seminole County, on March 6, 1964, by C. O. Youtsey. Det. by R. F. Wilkey. This is a new State record. R. americanus is a root inhabiting species. (Fla. Coop. Sur.). CALIFORNIA - Rhizoecus cacticans medium on "Rubra Ray" nursery stock (succulent plants) in Santa Cruz, Santa Cruz County. Pseudococcus adonidum medium generally in greenhouse in La Jolla, San Diego County. (Cal. Coop. Rpt.).

WHITEFLIES - ALABAMA - Nymphs of unspecified species heavy on isolated plantings of gardenias in Dallas County. (Alsobrook et al.). Aleuroplatus ilicis nymphs very heavy on cherry-laurel in Lee County. Det. by L. M. Russell. (McQueen).

TWO-STRIPIED WALKINGSTICK (*Anisomorpha buprestoides*) - ALABAMA - Continues feeding on azaleas and causing much concern among nurserymen at Semmes, Mobile County. (Seibels).

ERIOPHYID MITES - MASSACHUSETTS - Aceria paradianthi serious on carnation over large range in Woburn, Middlesex County. First report from this area in over a year. (Whitcomb). NEW YORK - Probably Triseticus sp. active and abundant in needle sheaths of Scotch pine at Ithaca, Tompkins County. Nalepellia tsugifolia, leaf vagrant on hemlock, active and hatching from overwintering eggs at Poughkeepsie in Hudson Valley; has been extremely abundant during early spring and late fall for past 2 years, especially in nurseries on Long Island. (N.Y. Wkly. Rpt., Apr. 13). FLORIDA - Acaphylla steinwedeli moderate on leaves of camellia at Orlando, Orange County. (Griffith, Apr. 7).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - FLORIDA - Moderate to heavy on *Chrysanthemum* sp. at Ft. Lauderdale, Broward County. (McLean, Apr. 8).
ARIZONA - Heavy populations causing considerable damage to evergreens, roses and other ornamentals in Maricopa County. (Ariz. Coop. Sur.).

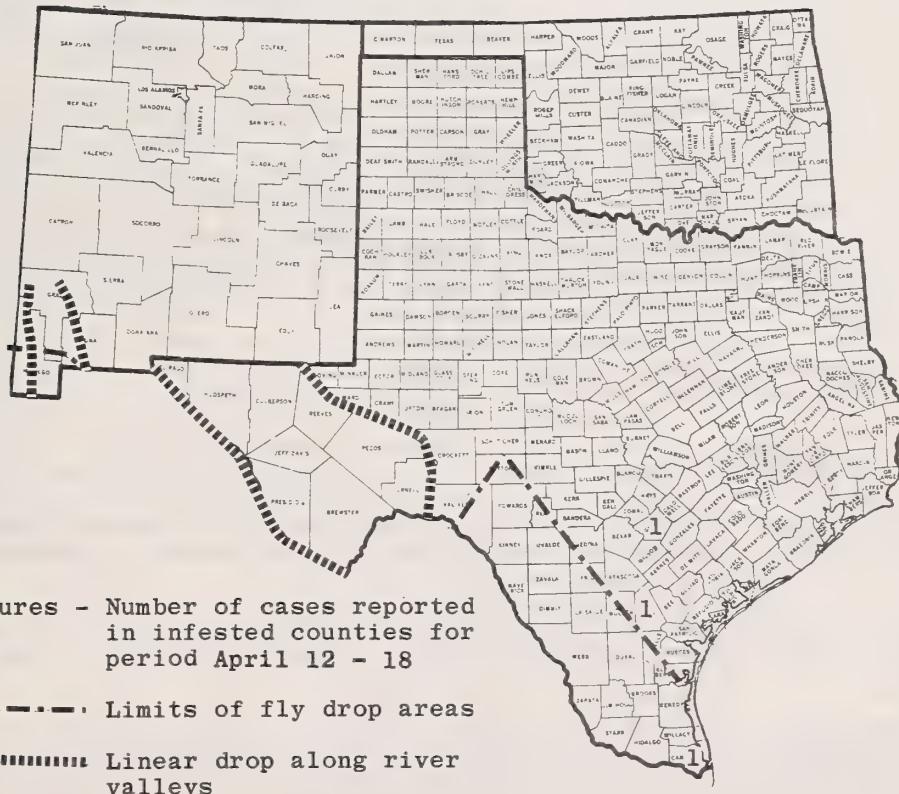
SPIDER MITES (*Oligonychus* spp.) - CALIFORNIA - *Oligonychus* sp., near *milleri*, medium on juniper nursery stock in Arlington, Riverside County. *O. subnudus* light on Italian cypress trees in San Diego, San Diego County. (Cal. Coop. Rpt.).

SLUGS - GEORGIA - Heavy on cannas in De Kalb County. (Vanderford, Apr. 7).

INSECTS AFFECTING MAN AND ANIMALS

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

During the period April 12-18, only 3 screw-worm cases were reported from TEXAS. To this date this year, 22 cases of screw-worm have been submitted for identification. During this same period last year, 456 screw-worm cases were reported. A total of 83,283,450 sterile screw-worm flies was released during this period: Texas received 18,454,250, New Mexico 810,000 and the Republic of Mexico 64,019,200. (Anim. Dis. Erad. Div.).



MOSQUITOES - FLORIDA - Light trap catches of salt-marsh species increased sharply first week of April in Lee County. Highest count for Aedes taeniorhynchus was 420 females per trap night and 19 for Aedes sollicitans, both on April 7. Fresh water species continued more numerous in traps in northern part of State, with highest counts being 252 on April 3 and 102 on April 7, both at Santa Rosa, Walton County. (Fla. Coop. Sur.). Aedes sollicitans annoying humans at Guana Wildlife Management area, South Ponte Vedra Beach, St. Johns County. (Mead). Culex salinarius, Aedes canadensis and Psorophora horrida taken in small numbers biting humans in a Gainesville suburban area, Alachua County. (Mead, Apr. 11). ALABAMA - Aedes sollicitans very heavy in coastal areas of Mobile County. Culex pipiens quinquefasciatus appearing in light numbers in east central counties. (Seibels, Barwood, et al.). WISCONSIN - Culex pipiens adults appearing in Dane County area. (Wis. Ins. Sur.). MINNESOTA - Hibernating adults of Culiseta inornata active on warm days. Larvae of Aedes stimulans, Aedes implicatus, Aedes excrucians, Aedes fitchii and Aedes cinereus collected in Minneapolis-St. Paul area; most in first and second stages; some fourth stage present. Earliest larval collection made April 6. (Minn. Ins. Rpt.). UTAH - Few adults of unspecified species reported in northern counties; 90 percent of larvae on Great Salt Lake Front in Weber County are Aedes dorsalis and spraying underway for past 30 days. (Knowlton, Fronk).

CATTLE GRUBS (Hypoderma spp.) - UTAH - Present in backs of cattle throughout Summit County; sometimes numerous in younger stock. (Knowlton). NORTH DAKOTA - Some larvae remain in backs of cattle in south central and southwestern areas. Numbers varied from none to heavy on individual animals; averaged in low medium range. Many grubs have dropped. Both H. bovis and H. lineatum taken in State. (N.D. Ins. Sur.). OKLAHOMA - Considerable adult activity by H. lineatum continues in Payne, Woodward and Harper Counties. (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Ranged 50-75 per head in Payne, Woodward and Harper Counties. (Okla. Coop. Sur.). GEORGIA - Averaged 2.05 per head on 108 Hereford cattle in Putnam County April 7. Averaged 30 per head on herd of Hereford cattle in Pike County April 15. (Roberts).

FACE FLY (Musca autumnalis) - SOUTH CAROLINA - Numerous males observed on sunny side of building and 3 females on copula March 27 in northern Oconee County. About 10 other buildings and herds checked, but negative. First activity of season. (Henson, Seawright, Adkins).

HOUSE FLY (Musca domestica) - UTAH - Present in cattle feed yards in Ogden-Hooper area, Weber County. (Knowlton).

SHEEP KED (Melophagus ovinus) - OHIO - Sheep shearers in central area report populations lower than in 1963; however, quite abundant on few flocks. (Kramer).

CALLIPHORID FLIES - WISCONSIN - Unusually abundant and causing considerable annoyance in houses. Large numbers present on freshly cut elm stumps and common in Middleton blacklight trap. (Wis. Ins. Sur.).

MIDGESES - NORTH CAROLINA - Unspecified species breeding in oxidation pond at poultry processing plant in Lincoln County. Numerous enough to annoy residents in vicinity. (Ashton).

CATTLE LICE - UTAH - Common in Summit County beef herds not yet treated. (Knowlton). SOUTH CAROLINA - Unusually active on unsprayed herds. (Nettles et al.). GEORGIA - Solenopotes capillatus averaged 5.45 per animal in herd of 108 Hereford cattle in Putnam County. (Roberts, Apr. 7). Linognathus vituli infested herd of Hereford cattle in Pike County; averaged 1 per square inch. (Johnson).

BED BUG (Cimex lectularius) - UTAH - Infesting buildings of labor camp near Tremonton, Box Elder County. (Knowlton).

ROCKY MOUNTAIN WOOD TICK (*Dermacentor andersoni*) - IDAHO - Unusual numbers present in sagebrush desert land areas in southeast part of State. Heaviest infestations noted in area just east of Mountain Home, Elmore County, averaging 15 per person per day. Lesser numbers found in Rattlesnake area south of Mountain Home and in Sailor Creek area south of Glenns Ferry. (Manis; ARS personnel).

EAR TICK (*Otobius megnini*) - TEXAS - Light locally on livestock in Eastland County. (Cooper).

HOUSEHOLD AND STRUCTURAL INSECTS

CLOVER MITE (*Bryobia praetiosa*) - CALIFORNIA - Medium on clover lawns and entering residences in Fresno, Fresno County. (Cal. Coop. Rpt.). NEVADA - Continues a nuisance to homeowners in southern Washoe County. (Lauderdale). UTAH - Present in several homes at Brigham City, Box Elder County. (Knowlton). KANSAS - Annoying homeowners in Garden City, Finney County, southwest. Springlike weather during past several weeks undoubtedly increased activity. (DePew). MARYLAND - Numerous on outsides of several homes in Calvert and Prince Georges Counties. (U. Md., Ent. Dept.). VIRGINIA - Annoying at locations in Emporia, Greensville County, and in Catlett, Fauquier County. (Rowell, Jennings, Tudor). NORTH CAROLINA - A nuisance at a Hertford County location. (Langdon, Mount).

BOXELDER BUG (*Leptocoris trivittatus*) - VIRGINIA - Adults abundant in and around homes at locations in Northumberland, Montgomery and Floyd Counties. (Rowell, Coggsdale, Talley). MARYLAND - Troublesome at a location in Spencerville, Montgomery County, April 9. (U. Md., Ent. Dept.). PENNSYLVANIA - Warmer weather caused increased activity in homes in southern half of State. (Pepper). MINNESOTA - Reported from several locations in Minneapolis-St. Paul area. (Minn. Ins. Rpt.).

BLACK CARPET BEETLE (*Attagenus piceus*) - PENNSYLVANIA - Numerous on seventeenth floor of office building in Harrisburg, Dauphin County. Suspected of breeding in debris above false ceiling. (Simons). Large numbers noted about windows in home in Indiana County. (Udine). MARYLAND - Larvae found in kitchen of home in Annapolis, Anne Arundel County. (U. Md., Ent. Dept.). ALABAMA - Light infestations reported in few homes in southern Mobile County. (Seibels). WYOMING - Probably this species, light in home in Cheyenne, Laramie County. (Spackman).

FURNITURE CARPET BEETLE (*Anthrenus flavipes*) - MICHIGAN - Adults reported in homes in Genesee and Ingham Counties recently. (Cole).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - TEXAS - Heavy, local populations annoying around homes in Titus County. (Neal). VIRGINIA - Adults common in homes in Emporia, Greensville County; Salem, Roanoke County; Locust Grove, Orange County; and Mt. Holly, Westmoreland County. (Rowell, Jennings, Estes, Dawson).

COCKROACHES - MARYLAND - Supella supellectilium infested home at Rockville, Montgomery County, April 9. Blatta orientalis nymphs found in attic and other parts of house at College Park, Prince Georges County. (U. Md., Ent. Dept.).

ANTS - OREGON - Winged forms of Prenolepis imparis abundant in and around homes in western area; many inquiries received. (Larson). MARYLAND - Workers of unspecified species troublesome in Baltimore home. Acanthomyops interjectus winged forms appeared in homes in Prince Georges County and at Baltimore. (U. Md., Ent. Dept.).

SUBTERRANEAN TERMITES - CONNECTICUT - Reticulitermes spp. continue to swarm statewide. (Savos, Apr. 15). PENNSYLVANIA - Reticulitermes flavipes swarming in building at Manada Hill and in greenhouse at Middleton, Dauphin County, April 11. (Simons, Quackenbush). Several incidences of R. flavipes swarming reported from western part of State. (Udine). NEW JERSEY - Swarmers of unspecified species

very active in all areas. (Ins.-Dis. Newsltr.). VIRGINIA - Unspecified reproductive forms noted in Cumberland, King George, Franklin and Madison Counties. (Rowell, Seay, Hall, Tucker, Owings). NORTH CAROLINA - Alates of R. flavipes noted April 14 in Pitt County. (Kilpatrick, Mount). ALABAMA - R. flavipes emerging in great numbers from homes, storage buildings, gasoline stations, fence posts, dead trees and many other wood structures in Dallas, Lee and other central counties. (Baker, Alsobrook et al.). UTAH - Unspecified species infesting another home and garage at Logan, Cache County. (Knowlton).

WESTERN DRYWOOD TERMITE (Incisitermes minor) - CALIFORNIA - Infesting building in La Canada, Los Angeles County. (Cal. Coop. Rpt.).

CARPENTER ANTS (Camponotus spp.) - MINNESOTA - Winged forms reported from several locations in Minneapolis-St. Paul area. (Minn. Ins. Rpt.). CALIFORNIA - Heavy population of C. hyatti damaging residence in San Jose, Santa Clara County, by building nests between walls. Carpenter ant infestations have been reported more frequently during past 2 years than for many years previous. (Cal. Coop. Rpt.).

POWDER-POST BEETLES - ALABAMA - Lyctus africanus causing considerable damage to bamboo curtains in Mobile County home. As far as is known, this is first report of this species from State. Det. by T. J. Spilman. (Seibels, Bolton). UTAH - Unspecified species damaged floor and supporting timbers of older home at Logan, Cache County. Also damaged 8 new homes at Garland, Box Elder County, particularly hardwood floors. (Knowlton).

BENEFICIAL INSECTS

LADY BEETLES - OREGON - Mostly Hippodamia spp., ranged 0-8 per collection of 60 alfalfa tips in 8 fields in Umapine area, Umatilla County. (Halfhill). NEW MEXICO - Adults of unspecified species becoming numerous in alfalfa and small grains in Dona Ana, Eddy and Chaves Counties; often as high as 16-50 per 100 sweeps. (N.M. Coop. Rpt.). ARKANSAS - Reproduction of several species well underway in legumes in southern area, with nearly full-grown larvae present. (Ark. Ins. Sur.). MISSOURI - Adults of Coleomegilla sp. and Hippodamia convergens noted on hairy vetch and small grains in southeast. (Houser, Thomas, Wood). KANSAS - Few H. convergens noted in wheat, barley and alfalfa in east central and northeast areas. (Peters). NEBRASKA - Hippodamia spp. adults common in Dundy and Howard Counties, and in eastern part of State. (Manglitz, Stevens, Bergman). WISCONSIN - Adults becoming more common. Chilocorus stigma observed on elm stumps in Rock County. H. convergens appearing in some alfalfa. Hippodamia parenthesis common in field of alfalfa at Brodhead, Green County, where aphids numerous; counts as high as 3 per alfalfa clump; mating noted. (Wis. Ins. Sur.). OHIO - H. convergens easily collected in alfalfa and red clover fields in southeast; many adults noted feeding on pea aphid. (Galford, Lyon). MARYLAND - H. convergens adults abundant in field of alfalfa at Easton, Talbot County. (U. Md., Ent. Dept.). VIRGINIA - H. convergens observed in fields in Washington and Giles Counties; mating observed in Giles County field. Single specimen of Coleomegilla maculata observed in Lee County. (Tarpley).

GREEN LACEWINGS (Chrysopa spp.) - ARKANSAS - Few adults being noted in legumes; no eggs or larvae found. (Ark. Ins. Sur.). NEW MEXICO - Adults becoming noticeable in small grains and alfalfa in Dona Ana, Eddy and Chaves Counties. (N.M. Coop. Rpt.).

DAMSEL BUGS (Nabis spp.) - MISSOURI - Small numbers of adults found in southeast area. (Houser, Thomas, Wood). KANSAS - Small numbers noted in wheat, barley and alfalfa in northeast and east central areas. (Peters). NEW MEXICO - Adults becoming numerous in Dona Ana, Eddy and Chaves Counties on alfalfa and small grains. (N.M. Coop. Rpt.).

A FLOWER BUG (Orius insidiosus) - ARKANSAS - First collections of season made in crimson clover in Bradley County, south central. (Ark. Ins. Sur.).

A BIG-EYED BUG (Geocoris punctipes) - ARKANSAS - Only adults present in small numbers in legumes in southern area. (Ark. Ins. Sur.).

SYRPHID FLIES - NEW MEXICO - Numerous adults noted in small grains and alfalfa in Dona Ana, Eddy and Chaves Counties. (N.M. Coop. Rpt.). MISSOURI - Larvae of unspecified species feeding on pea aphid on alfalfa in Pemiscot County, southeast. (Houser, Thomas, Wood).

HONEY BEE (Apis mellifera) - WISCONSIN - Gathering pollen, primarily from red maple and alder. (Wis. Ins. Sur.).

BRACONID WASPS - MASSACHUSETTS - Aliolus curculionis emerged from 2 percent of carrot weevil (Listronotus oregonensis) larvae collected at Concord, Middlesex County. Det. by C. F. W. Muesebeck. According to U.S. National Museum records, this is new host of this parasite. (Whitcomb). KANSAS - Small numbers of unspecified species noted in wheat, barley and alfalfa in east central and northeast areas. (Peters). OREGON - Adults of Aphidius sp. ranged 2-5 per collection of 60 alfalfa tips in 8 fields in Umapine area, Umatilla County. (Halfhill).

MISCELLANEOUS INSECTS

SAWFLIES - OHIO - Heavy numbers of unspecified species noted on laundry near Mantua, Portage County, northeast (Custer, Apr. 12); 4-5 sawflies per 25 sweeps collected in old field of wheat near Wooster, Wayne County, northeast (Lyon). Two species frequently collected throughout northeast during past 2 weeks. (Lyon). WISCONSIN - Adults of Dolerus unicolor and D. similis common along roadsides and prevalent on surface of freshly cut elm stumps in Rock County. (Wis. Ins. Sur.). PENNSYLVANIA - Dolerus sp. adults numerous and flying over grass and about building in Manada Hill, Dauphin County (Simons, Apr. 11); also flying in hay fields in Butler and Armstrong Counties (Adams).

WHITE-FRINGED BEETLES (Graphognathus spp.) - FLORIDA - Larvae light on plants along shoulder of highway 2-3 miles east of Altha, Calhoun County. (Brown, Nichols; Apr. 7).

A DARKLING BEETLE (Tribolium madens) - UTAH - Numerous in nesting material of leafcutting bees at Flowell, Millard County. Det. by T. J. Spilman. Small number of Trogoderma simplex also found in material from these nests. (Knowlton, Barnes).

A SAP BEETLE (Glischrochilus quadrisignatus) - WISCONSIN - Adults observed in corn fields. (Wis. Ins. Sur.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - WISCONSIN - Adults observed as far north as Jackson County on April 17. (Wis. Ins. Sur.).

A HAIRSTREAK BUTTERFLY (Incisalia henrici) - DELAWARE - Adults collected April 16, 1964, at Trap Pond State Park, Sussex County, by R. W. Lake and F. Murphey. This is first report of species in State. Det. by R. W. Lake. (Burbutis).

BLACK BLOW FLY (Phormia regina) - UTAH - Active on farm at Beaver Dam, Box Elder County. (Knowlton).

CORRECTIONS

CEIR 14(16):332 - CAROLINA GRASSHOPPER (*Dissosteria carolina*) should read *Dissosteira carolina*.

CEIR 14(16):350 - Next to last paragraph, end of line 5: A PSYLLID (*Aleuroplatus* ... , should read A WHITEFLY (*Aleuroplatus* ...

CEIR 13 and 14: References in these two volumes concerning TENT CATERPILLARS Malacosoma sp., probably texana, in TEXAS should be changed to read Malacosoma sp., probably tigris. M. texana is a synonym of M. tigris.

CEIR 14(16):349 - Next to last paragraph, line 3: P. fraxinipetalae should read read P. fraxinidipetalae.

(Weather continued from page 364).

storm. High temperatures prevailed over the central Great Plains: 94° at Grand Island, Nebraska; 92° at Huron, South Dakota; and 88° at Minneapolis, Minnesota. Severe thunderstorms broke out along the front that separated the cold air from the warm, humid air. By the end of the period, the front had become stationary and stretched from Colorado to Virginia. Severe thunderstorms and several tornadoes occurred in Texas, Oklahoma, Kansas, Nebraska, Iowa, and Missouri.

Temperatures during the week averaged slightly below normal over the Far Northwest, the Great Basin, the northern and central Rocky Mountains, and the northern edge of the Great Plains. Temperatures averaged above normal over most of the rest of the Nation. Temperature departures ranged from -7° at Spokane, Washington, to +8° at Pittsburgh, Pennsylvania. Over most of the Ohio River Valley, the temperatures averaged 6° or more above normal. Less than 0.50 inch of rain fell at most stations over the western half of the Nation except southern Texas. Most of the eastern half of the Nation received more than 0.50 inch. An area extending from east-central Texas to Alabama received more than 2.00 inches. Some stations in this area received several inches of rain. Ville Platte, Louisiana, received 14.55 inches from 5 o'clock Friday evening until 7 o'clock Saturday morning. Several stations in central Illinois and central Indiana and several in southern New England received more than 3.00 inches of rain during the week. (Summary supplied by U.S. Weather Bureau).

LIGHT TRAP COLLECTIONS

MV = mercury vapor; O = other.

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1963
(continued from page 361)

STORED-PRODUCT INSECTS

Highlights:

All known infestations of KHAPRA BEETLE were treated and no active infestations were known to exist by the end of 1963.

Inspections for the KHAPRA BEETLE (*Trogoderma granarium*) during 1963 were conducted on approximately 30,250 properties in ARIZONA, CALIFORNIA, NEW MEXICO and TEXAS. No infestations were found. The last premise in Arizona was released from Federal and State quarantines on December 3, 1963. No khapra beetle specimens have been found in New Mexico since May 1959, nor in Texas since April 1960. The last infestation discovered in California was in January 1962 and in Arizona in July 1962. Detection surveys for khapra beetle were conducted on nearly 32,000 properties in 37 States during 1963. No infestations were found, although a number of suspect specimens were submitted for determination. Other species of Trogoderma were found in California warehouses in light populations, and inspections also revealed Anthrenus spp., Attagenus spp. and Perimegatoma sp. to be present in California. In NEVADA, surveys for khapra beetle were negative; the species most commonly encountered was Trogoderma parabile. Since khapra beetle continues to be intercepted regularly at United States ports of entry, intensive detection surveys will be continued in all States.

CIGARETTE BEETLE (*Lasioderma serricorne*) infested various cereals and spices in all sections of MARYLAND; infestations were general and numerous over GEORGIA in a number of stored products; often reported on a variety of products including tobacco and processed citrus pulp in FLORIDA; and damaged stored products in one or more areas of TEXAS. DRUGSTORE BEETLE (*Stegobium paniceum*) was a pest of stored products in NEW JERSEY and was commonly reported in VIRGINIA. Drugstore beetle was in evidence in many instances during the year in CALIFORNIA. Infestations in that State were more continuous in 1963. They occurred in commercial warehouses, dry dog food, pantry shelves, packaged rat poison and packed cereal grains. These infestations became a nuisance in households and offices. Drugstore beetle was taken in routine warehouse inspections in California.

LESSER GRAIN BORER (*Rhyzopertha dominica*) heavily infested grain in storage in Wake County, NORTH CAROLINA, the third week of October, and was occasionally reported in KANSAS in 1963. BROADBEAN WEEVIL (*Bruchus rufimanus*) infested stored beans locally in a warehouse in San Mateo County, CALIFORNIA, and COWPEA WEEVIL (*Callosobruchus maculatus*) infested blackeyed peas locally in storage in Fresno County, same State. Cowpea weevil was also a pest of stored products in TEXAS as was COFFEE BEAN WEEVIL (*Araecerus fasciculatus*).

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) was one of the major pests of commercial stored grain during 1963 in WASHINGTON, and was taken in routine inspections of CALIFORNIA warehouses. Infestations in WYOMING were found in 51 percent of the farm granaries inspected, but most of the populations were small and not considered as an immediate danger. Saw-toothed grain beetle was frequently taken in inspections in KANSAS, with most being found in grain coming from farms. Infestations of grain were reported in southeast NORTH DAKOTA. Saw-toothed grain beetle infested a wide variety of stored products in buildings and on farms in MARYLAND and it was commonly reported in NEW HAMPSHIRE, NEW JERSEY, PENNSYLVANIA, VIRGINIA and NORTH CAROLINA. The beetle was a pest of stored products in one or more areas of TEXAS and caused minor injury in MICHIGAN. Another cucujid beetle, FLAT GRAIN BEETLE (*Cryptolestes pusillus*) was the most frequently found species

in stored products in KANSAS, particularly at seeding time. Flat grain beetle was also observed in grain and seed storage in NORTH DAKOTA. RICE WEEVIL (Sitophilus oryzae) was reported to be a problem in wheat and rye bins in McDowell County, NORTH CAROLINA, during October. It was also reported to be a pest of stored products in KANSAS, TEXAS and VIRGINIA as was GRANARY WEEVIL (S. granarius) in the latter two States. Granary weevil was also heavy in stored barley in Pershing County, NEVADA. Both rice weevil and granary weevil were taken in routine warehouse inspections in CALIFORNIA.

CADELLE (Tenebroides mauritanicus) infestations were found in 26 percent of the farm granaries inspected in WYOMING in 1963. Light damage was noted in most places and only limited controls were used. Cadelle was also a pest of stored products in TEXAS.

A SPIDER BEETLE (Mezium americanum) was found in a seed house in Fargo, Cass County, NORTH DAKOTA. This was the first collection of the species since 1939.

CONFUSED FLOUR BEETLE (Tribolium confusum) was one of the most common pests of stored products in PENNSYLVANIA and was reported as pestiferous in NEW JERSEY and TEXAS. It caused only minor injury in MICHIGAN. In WYOMING, infestations of confused flour beetle were found in 34 percent of the farm granaries inspected in the State, but all infestations were light. Infestations of RED FLOUR BEETLE (T. castaneum) in Wyoming were found in 44 percent of the farm granaries and very little was done to reduce infestations. Red flour beetle was heavy in stored barley in Pershing County, NEVADA, and the pest continued to be of major importance in commercial grain storage in WASHINGTON. Tribolium spp. were observed in grain and seed stores in NORTH DAKOTA during the year.

Infestations of YELLOW MEALWORM (Tenebrio molitor) were reported several times in GEORGIA, but most were light to moderate with only a few heavy infestations noted. Yellow mealworm caused minor injury in MICHIGAN during 1963.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was again the most important pest of farm-stored grain and corn in MARYLAND, and the pest damaged corn in cribs in Nemaha and Thayer Counties, NEBRASKA, in 1963. Damage was also recorded in TEXAS.

POTATO TUBERWORM (Gnorimoschema operculella) caused trouble in stored potatoes on the Eastern Shore of VIRGINIA in late August and occurred on stored potatoes in Harris County, TEXAS, during the year. A limited number of potato storages in Monroe County, MICHIGAN, were found to harbor light infestations of this pest following a summer when many fields in the area were attacked. Blacklight traps served as an excellent tool for sampling adults. Adult catches at traps were reduced greatly by fogging operations.

WHITE-SHOULDERED HOUSE MOTH (Endrosis sarcitrella) was a local pest of seed oats in Santa Barbara County, CALIFORNIA. Also in that State, normal occurrences of FILBERTWORM (Melissopus latiferreanus) were found in stored walnuts and other nuts.

INDIAN-MEAL MOTH (Plodia interpunctella) was one of the most commonly reported pests of stored food in NORTH CAROLINA and most commonly detected stored-product pest in VIRGINIA. It was heavy in stored wild bird seed in a large store in Prince Georges County, MARYLAND, and was commonly reported in PENNSYLVANIA, NEW JERSEY, NORTH DAKOTA and TEXAS. Indian-meal moth was very troublesome in commercial businesses handling feed and stored-grain products throughout NEW MEXICO. It damaged milo in a bin in Seward County, NEBRASKA, and caused minor injury during 1963 in MICHIGAN. MEDITERRANEAN FLOUR MOTH (Anagasta kühniella) was also commonly reported in VIRGINIA, and MEAL MOTH (Pyralis farinalis) caused minor injury in MICHIGAN. In CALIFORNIA, DRIED-FRUIT MOTH (Vitula edmandsae serratilineella) was a problem locally in dried fruit storage in Solano County. This pest was also occasionally reported from the field. It has not been of consequence in past years.

An OTITID FLY (Chrysomyza demandata) was a pest in one or more areas of TEXAS during 1963.

MUSHROOM MITE (Tyrophagus putrescentiae) infestations were found several times in stored grains and livestock feed in CALIFORNIA, and an ACARID MITE (Aleuroglyphus ovatus) was a pest of stored products in TEXAS.

BENEFICIAL INSECTS

LADY BEETLES were common on alfalfa and clover throughout VIRGINIA. An intensive survey of the distribution and abundance of the common species on clover and alfalfa was conducted in 1963. The most commonly encountered species were CONVERGENT LADY BEETLE (Hippodamia convergens), Coleomegilla maculata fuscilabris, Coccinella novemnotata and Hippodamia parenthesis. Convergent lady beetle adults and larvae were very heavy on late tobacco in MARYLAND, apparently feeding on green peach aphid (Myzus persicae) in Anne Arundel and Calvert Counties. Various species of lady beetles appeared in normal numbers in RHODE ISLAND. Heavy populations of convergent lady beetle built up in southwest OHIO alfalfa fields in early November, and Coleomegilla maculata lengi was found to be an active predator on cereal leaf beetle (Oulema melanopa) in MICHIGAN. Adults and larvae of C. maculata fuscilabris, Coccinella novemnotata, Hippodamia parenthesis, convergent lady beetle (H. convergens) and THIRTEEN-SPOTTED LADY BEETLE (H. tredecimpunctata tibialis) increased rapidly in ILLINOIS in pea aphid (Acyrthosiphon pisum) infested fields during May and undoubtedly helped in keeping the infestation of aphids from becoming too serious. In WISCONSIN, convergent lady beetle, Anatis quindecimpunctata and H. parenthesis were the dominant species present in grain and alfalfa fields. These lady beetles, with other predators, are credited with keeping aphid populations in check. The buildup of predators on grain and alfalfa was rapid until about the time corn leaf aphid (Rhopalosiphum maidis) commenced to increase on corn. There was a midseason drop of lady beetles, then an increase in late summer.

Lady beetles were abundant in forage and cereal crop fields in most areas of NORTH DAKOTA and appeared to affect aphid populations in many fields. Convergent lady beetle and TWO-SPOTTED LADY BEETLE (Adalia bipunctata) were the dominant species in North Dakota. In NEBRASKA, normal populations of Hippodamia spp. were present on most plants throughout the season. Some buildup on corn followed infestations of corn leaf aphid. Lady beetles were about normal in number in KANSAS, with convergent lady beetle the most numerous followed by Coleomegilla maculata fuscilabris. Several species of lady beetles ranged light to heavy in OKLAHOMA, with adults and larvae present in a variety of crops throughout the State during the year. Larvae and adults of lady beetles were the most abundant predators found on cotton during 1963 in ARKANSAS, and many species of lady beetles were noted attacking economic pests in various parts of TEXAS during the year. Lady beetles were very abundant in alfalfa, cotton and barley fields in Dona Ana County, NEW MEXICO, which may account for the lighter populations of aphids and thrips. Various species of lady beetles were active in COLORADO during the season. Large populations were found in WYOMING in alfalfa, corn, potato and sugar beet fields, with the largest numbers being found in August and early September in alfalfa fields. However, lady beetle populations were about the same as in 1962 in Wyoming. In WASHINGTON, lady beetles were unusually abundant on peaches in the Wenatchee area.

The PUNCTUREVINE WEEVILS (Microlarinus lareynii and M. lypriformis) have done an exceptional job of establishing themselves in CALIFORNIA and controlling puncturevine (Tribulus terrestris). The seed infesting species, M. lareynii, was 100 percent effective in areas where introduced. Continued spread and control are anticipated. In NEVADA, both species heavily infested puncturevine in the original release areas of Clark County. Both species were released in additional

areas of Clark County. In Churchill, Lincoln, Mineral and Nye Counties, Nevada, they passed through at least one generation before fall. M. lareynii appeared to have overwintered well at release site near New Mexico State University, University Park, Dona Ana County, NEW MEXICO. Additional releases made this past summer at New Mexico State University Experiment Substation near Artesia, Eddy County, and at Kirkland Air Force Base, Bernalillo County.

A GORSE WEEVIL (Apion ulicis) was very successful in spreading and working in gorse (Ulex europaeus) stands during the year in CALIFORNIA. A CERAMBYCID BEETLE (Crossidius pulchellus) has apparently aided in killing heavy stands of snakeweed (Gutierrezia sarothrae) on several sections of rangeland in Hidalgo County, NEW MEXICO. Lighter populations of this beetle were found in Grant, Luna and Dona Ana Counties, New Mexico.

The KLAMATHWEED BEETLES (Chrysolina quadrigemina, C. geminata and Agrilus hyperici) continue to work on klamathweed (Hypericum perforatum) in areas of CALIFORNIA where this weed has regenerated or in forest fringe areas. Areas that were lost for range feeding have now been satisfactorily reclaimed and the weed is no longer a problem. Chrysolina spp. continue to maintain their populations on klamathweed in satisfactory numbers throughout the western part of OREGON.

HYMENOPTEROUS PARASITES were noted attacking economic pests in various parts of TEXAS during 1963. In COLORADO, a release of Aphidius smithi, a parasite of pea aphid (Acyrthosiphon pisum), was made in Mesa County to determine its effectiveness. Pea aphid populations were reduced early in the season in Colorado by an unidentified hymenopterous parasite. Aphidius spp. held pea aphid populations down in the Walla Walla area of WASHINGTON during the late spring. Praon sp. increased on pea aphid populations by late June in Washington. Meteorus sp., a parasite of pine tussock moth (Dasychira plagiata), appeared in Douglas County, WISCONSIN, on May 16. The cocoons became noticeable in the area on June 13 and it is credited with keeping this tussock moth in check. In SOUTH DAKOTA, three parasites of European corn borer (Ostrinia nubilalis) were observed -- Microcentrus gifuensis, Sympiesis viridula and Horogenes punctorius. A heavy infestation of hornworms (Protoparce spp.) on staked tomatoes in Queen Annes County, MARYLAND, was heavily parasitized by Apanteles congregatus.

Moderate population levels of Bathyplectes curculionis, a parasite of alfalfa weevil (Hypera postica), was noted in COLORADO, but they were not as numerous as during the 1962 season.

HONEY BEE (Apis mellifera) is an important pollinator of red clover seed crops in central WASHINGTON and of white clover in the southeastern part of the State. Honey production was good in specific localities, notably in the Columbia Basin. Tree fruit pollination and fruit set was generally good, with some pollination service problem caused by communication and transportation difficulties. A total of 39,985 colonies were inspected in OREGON; 748 colonies were infected with American foulbrood and 175 colonies with European foulbrood. Of the 2,996 apiaries inspected, 348 were infected. Honey production was down 2 percent from 1962 in KANSAS. The State's 44 thousand colonies yielded 47 pounds of honey per colony for a total of 2.068 million pounds. A total of 3,856 colonies were inspected and 62 colonies were found to be infected with American foulbrood, while 4 colonies were infected with European foulbrood. A good honey flow in late summer provided for a State production of 8 percent above 1962 in MICHIGAN, the largest since 1959. Low moisture reserves in the soil during autumn were generally unfavorable for 1964 honey production.

ALKALI BEE (Nomia melanderi) populations in NEVADA, especially those produced in artificial beds, were at high levels in Humboldt, southern Nye and Pershing Counties. Alkali bee began emerging early in WASHINGTON, June 6-16 in the Yakima Valley, and was renesting by June 19. Many alfalfa seed growers timed their first cutting too late for effective pollination. The weather was too cool for good foraging activity.

A LEAFCUTTING BEE (Megachile rotundata) was at high population levels in alfalfa-seed producing areas of Humboldt, Lander and Pershing Counties, NEVADA. The species began emerging June 1 in the lower Yakima Valley of WASHINGTON, about a week later near Moses Lake, Grant County, Washington. The second generation began emerging by July 22. Osmia spp. were pollinators of white clover in southeastern Washington.

BUMBLE BEES (Bombus spp.) are important pollinators of red clover seed in central WASHINGTON and of white clover in the southeastern area. Although overwintering queens of B. mixtus were active as early as mid-February, most new nests were started April 10-May 1. Pollination activity was generally good on bogs of the Long Beach area, Pacific County, and Grayland area, Grays Harbor County, during June. Bumble bees were fairly common in RHODE ISLAND in 1963.

DAMSEL BUGS (Nabis spp.) were common in alfalfa and clover fields in VIRGINIA and MARYLAND; notably during May and June in the latter State. They were also active in clover and alfalfa throughout ILLINOIS. Nabis ferus was the most abundant beneficial insect collected in net sweepings of alfalfa in northwest OHIO in mid-November and N. roseipennis was the most abundant species in NORTH DAKOTA. Damsel bugs were active most of the season in COLORADO, commonly present in OKLAHOMA and attacked economic pests in various parts of TEXAS during 1963.

AN ANTHOCORID BUG (Orius sp.) was abundant in soybean fields during September on the lower Eastern Shore of MARYLAND. This predator may play a role in reducing corn earworm (Heliothis zea) eggs. An INSIDIOUS FLOWER BUG (Orius insidiosus) was the most numerous predator during the establishment of the first generation of European corn borer (Ostrinia nubilalis) in KANSAS as it was in 1962. It was also present in normal numbers on other plants in Kansas. This bug was common in OKLAHOMA and was found attacking economic pests in various parts of TEXAS. It was relatively abundant in cotton fields in ARKANSAS during 1963. Orius sp. was abundant throughout WYOMING, particularly in corn fields. However, populations were generally lower than in 1962.

A BIG-EYED BUG (Geocoris sp.) was abundant throughout WYOMING in alfalfa. The highest populations were found in Lincoln, Uinta, Fremont, Goshen and Platte Counties.

Various species of FLOWER FLIES (Syrphidae) were very common predators on crops infested with aphids in MICHIGAN, and larvae were common in alfalfa and clover throughout VIRGINIA. Larvae were also very active in COLORADO and they attacked various economic pests in TEXAS during the year. The insects were very abundant in alfalfa, cotton and barley fields in Dona Ana County, NEW MEXICO, and probably accounted for some reduction of economic pests.

Eggs of TACHINA FLIES were commonly found on tent caterpillar larvae in San Juan County, WASHINGTON, in early June. New tent caterpillar adults were scarce in July because of parasite and disease complex. Doryphorophaga doryphorae parasitized Colorado potato beetle (Leptinotarsa decemlineata) in the Walla Walla area during June.

Mature larvae of an undetermined BEE FLY averaged 50 per square foot in egg pods of clear-winged grasshopper (Camnula pellucida) in the Burns area of Harney County, OREGON.

CHINESE MANTIS (Tenodera aridifolia sinensis) was found for the first time in SOUTH CAROLINA in 1963.

GOLDEN-EYE LACEWING (Chrysopa oculata) continued as one of the most common predators attacking aphids in MICHIGAN, and adults and larvae were common in pea aphid (Acyrthosiphon pisum) infested fields in the southern half of ILLINOIS. This species was one of the most abundant lacewings in forage and cereal crop areas of NORTH DAKOTA, and was especially abundant during the second generation of European

corn borer (Ostrinia nubilalis) in KANSAS. Golden-eye lacewing was found attacking economic pests in various parts of TEXAS in 1963. Green lacewings were very abundant in alfalfa, cotton and barley fields in NEW MEXICO and were common in OKLAHOMA, COLORADO and RHODE ISLAND. They were also more numerous than previously noted in the Wenatchee area of Chelan County, WASHINGTON; adults appeared as swarms in the fall. LACEWINGS were about normal for the year in KANSAS and NEBRASKA. Some buildup on corn followed infestations of corn leaf aphid (Rhopalosiphum maidis) in Nebraska.

A SCOTCH-BROOM TIP MOTH (Leucoptera spartifoliella) continued to make progress in controlling Scotch broom (Cytisus scoparius) in CALIFORNIA and it was very effective in many areas where introduced. Also in California, a CINNABAR MOTH (Tyria jacobaeae) has not become established as well as other beneficial insects due to the conditions it has been subjected to. Continued work with this pest of ragworts (Senecio spp.) looks promising. T. jacobaeae was introduced in Linn and Polk Counties, OREGON, in 1960, but has not yet shown satisfactory results.

The accent on beneficial insects and mites continued in CALIFORNIA in 1963 with thousands of beneficial insects released. Many species of parasites and predators were listed and released by the University of California Biological Control. Colonization of beneficial insects resulted from repeated releases during 1963 and past years. Several new insects and mites were introduced, tested and released. Over 5 million parasites were released during 1963. Native parasites and predators were abundant again this year. In many locations the beneficial insects reoccurred later in the season.

BRACONIDS

Phanerotoma flavitestacea
Trioxyx pallidus

ENCYRTIDS

Aphycus helvolus
Copidosoma koehleri

EULOPHIDS

Aphelinus varipes
Aphytis sp.
A. coheni
A. lingnanensis
A. near lingnanensis
A. melinus
Aspidictiphagus lounsburyi
Coccophagoides sp.
Dasysscapus parvipennis
Prospaltella perniciosi
Tetrastichus incertus

A PTEROMALID

Spalangia drosophilae

A TORYMID

Eupteromalus nidulans

A GREEN LACEWING

Chrysopa carnea

LADY BEETLES

Cryptolaemus montrouzieri
Rhizobius satellus

A KLAMATHWEED BEETLE

Chrysolina gemellata

PUNCTUREVINE WEEVILS

Microlarinus lareynii
M. lypriformis

A SCIOMYZID FLY

Sepedon praemiosa

PHYTOSEIID MITES

Phytoseiulus persimilis
Typhlodromus aerialis
T. hibisci
T. limonicus
T. rickeri

MISCELLANEOUS INSECTS

Highlights:

The JAPANESE BEETLE eradication program in the Sacramento area of California continued encouraging during 1963; no live beetles were taken. Populations in the Northeast were very low during the year. Important new infestations were found in Michigan and Illinois. EUROPEAN CHAFER was found for the first time during 1963 in Pennsylvania when an infestation was discovered at Erie in June. WHITE-FRINGED BEETLES and IMPORTED FIRE ANT were found in a number of new counties; 31 for the former and 22 for the latter.

Results of the cooperative Federal-State program to eradicate the JAPANESE BEETLE (*Popillia japonica*) outbreak in the Sacramento area of CALIFORNIA continued encouraging during 1963 as no live beetles were taken during the year. About 8,000 traps were in operation in that State. Visual inspections were intensified also. To locate possible spread from the generally infested area in the United States, over 60,000 traps were in operation in 36 States during the beetle flight period. Data from these survey operations provide the basis for eradication treatments in peripheral areas. No new long-distance spread was discovered in 1963; however, new infestations were discovered on the periphery of the area of general infestations. Among the more important new infestations were those at Battle Creek and Detroit, MICHIGAN, and Mattoon and Charleston, ILLINOIS. An area of some 67,744 acres in area of Battle Creek was found infested. Much of this and another smaller infestation at Ypsilanti were treated with ground equipment. A live beetle was taken on July 10 in a trap at Minneapolis-St. Paul International Airport. This was the only specimen found in MINNESOTA during 1963. The first adults of the season for INDIANA were collected June 22 in Newton County. The first adult collected in RHODE ISLAND was in Kingston, Washington County, May 31. Homeowners in Rhode Island reported heavy adult emergence in Pawtucket, Providence County, on June 12. Japanese beetle was generally present in sparse numbers July 1 through early September, but there was no evidence of a general emergence peak aside from some instances of slight buildup in isolated spots in early August. There were practically no complaints from property owners. The season was probably the lowest population level since this insect became established in Rhode Island. There were no reports of serious turf damage.

The use of blacklight and lure traps provided more effective survey of EUROPEAN CHAFER (*Amphimallon majalis*). The first infestation of this pest in PENNSYLVANIA was discovered at Erie in June. In addition, more than 179,000 acres were found infested for the first time in CONNECTICUT, NEW JERSEY and NEW YORK. Traps were operated in strategic locations in 15 additional States in an effort to detect any new infestations. All known infested areas were treated in New Jersey and Pennsylvania. Treatments in New York have been limited to isolated infestations and to transportation sites where a hazard of spread exists. The areas under regulation in Connecticut and New York were expanded to bring all known infestations under regulation. There has been no reoccurrence of the infestation at Capon Bridge, WEST VIRGINIA.

Infestations of *Ceratophyus* sp., a horned scarab, continued in the Vandenberg Air Force Base in CALIFORNIA, with a few instances of gopherlike mounds produced in lawn areas of yards and golf course. This is the only location this scarab is known to occur.

During the past year significant increases in WHITE-FRINGED BEETLES (*Graphognathus* spp.) occurred throughout the generally infested area. Along with this increase in population density, 31 new counties were recorded in the Southern States. These included 3 in ALABAMA, 4 in FLORIDA, 8 in GEORGIA, 2 in LOUISIANA, 3 in

MISSISSIPPI, 6 in NORTH CAROLINA, 2 in SOUTH CAROLINA, 2 in TENNESSEE and 1 in VIRGINIA. The outlying infestation in KENTUCKY has been treated and work is continuing in ARKANSAS in the 6 northeastern counties. In Virginia, work has been delayed until the new infestations in the Norfolk area are delimited and mapped. Throughout the generally infested area, more than 60,000 acres were soil-treated to eliminate heavy infestations. Regulatory treatments involved more than 10 thousand acres of nursery. In heavily infested areas, more than 1,000 acres were treated with foliage sprays to reduce populations. Method improvement efforts are being intensified to find more effective ways of dealing with these pests. During 1963, the white-fringed beetle quarantine regulations were revised to provide for suppressive areas within or adjacent to generally infested areas. This action will provide protection to areas being treated to eradicate the weevils by reducing the movement of host materials and other commodities into the area.

Light numbers of a WEEVIL (Compsus auricephalus) continue to be found in cotton and soybeans in ARKANSAS. Large numbers were found in a small area of Pope County; but they have not become economic.

Adult LEAF BEETLES (Disonycha xanthomelas, D. triangularis and Gastrophysa polygoni) were submitted in MICHIGAN due to their superficially resembling cereal leaf beetle (Oulema melanopa).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) treatment in the Southern United States involved 2,687,054 acres during 1963. Seven States reported finding this pest in 22 additional counties. In GEORGIA, 9 new county records were established. TEXAS and MISSISSIPPI reported 4 new county records each. FLORIDA discovered 2 additional counties infested and ARKANSAS, NORTH CAROLINA and SOUTH CAROLINA recorded one new county each. Swarms were observed on November 19 in Clayton County, Georgia, which is the latest date on record for swarms in that area. SOUTHERN FIRE ANT (Solenopsis xyloni) was common in lawns in the east central area of TEXAS.

SPOTTED CUTWORM (Amathes c-nigrum) outnumbered all other cutworm species in NEW HAMPSHIRE blacklight collections. A NOCTUID MOTH (Prothoerodes rufula) became a problem in CALIFORNIA homes by entering and chewing fabrics and rugs in local areas.

PUMPKIN CATERPILLAR (Diaphania indica) was occasionally caught in Steiner traps in FLORIDA in the Avon Park and Sebring areas of Highlands County.

SEED-CORN MAGGOT (Hylemya platura) adults infected with a fungus were numerous on various plants and other objects in MARYLAND in Montgomery and Prince Georges Counties.

Broods III and XXIII of PERIODICAL CICADAS (Magicicada spp.) emerged in ILLINOIS. Brood XXIII, a 13-year brood, appeared over much of southern Illinois. Emergence began at Carbondale on May 10 and the population reached a peak between May 20 and 30 when very heavy emergence occurred. The weather was intermittently cool. Egg laying began May 22 and was at a peak during the first week in June and continued into the third week. Several new county records were established for these two broods viz: Brown, Schuyler, Piatt, De Witt, Knox and Henderson.

An unprecedented outbreak of CYDNID BUGS (Sehirus cinctus and Corimelaena sp.) occurred throughout the southern area of LOUISIANA. S. cinctus appears to have seriously damaged sugarcane in localized areas of fields in Assumption Parish bordering headlands, pastures, ditchbanks and similar areas. Corimelaena sp. damaged rice along margins of pastures from which they had moved in fantastic numbers.

Heavy populations of a COREID BUG (Arhyssus scutatus) invaded homes in many locations statewide in CALIFORNIA. Populations started early and were active until late in the year.

WESTERN DRYWOOD TERMITE (*Incisitermes minor*) was collected for the first time in NEVADA. A heavy infestation was found in partly dead ash trees in the Spring Mountains of Clark County.

A SPRINGTAIL (*Entomobrya unostrigata*) was very plentiful in CALIFORNIA due to a wet spring. These insects created a nuisance in swimming pools, on walks and in yards and homes.

Medium populations of a TROMBIDIID MITE (*Dinothrombidium magnificum*) occurred in soil in Lucerne, San Bernardino County, CALIFORNIA.

SOLPUGIDS and ORB WEAVER SPIDERS caused above normal complaints in the northwest-ern counties of NEVADA. Unusual numbers of PSEUDOSCORPIONS were reported in a home in Northfield, Washington County, VERNONT.

A SNAIL (*Vallonia pulchella*) was noted in yards, driveways and walks in CALIFORNIA. Great numbers of this minute species occurred in many locations and became a considerable nuisance to homeowners.

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Included in the "Summary of Insect Conditions in the United States - 1963" are the following special reports:

1. Summary of Fruit Insect Conditions, 1963, New York-New England Fruit Spray Specialists' Conference, compiled by L. W. Boulanger, Maine Agricultural Experiment Station, from the conference held at Storrs, Connecticut, October 29-30, 1963.
2. The highlight section of Forest Insect Conditions in the United States - 1963, compiled by the Division of Forest Insect Research, Forest Service, U. S. Department of Agriculture.

3. Vector Control Briefs, Issue No. 11, January 1964. Edited by Mr. Leslie D. Beadle and Dr. Harry D. Pratt. Published by U. S. Department of Health, Education and Welfare, Public Health Service, Communicable Disease Center, Atlanta, Georgia 30333.

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