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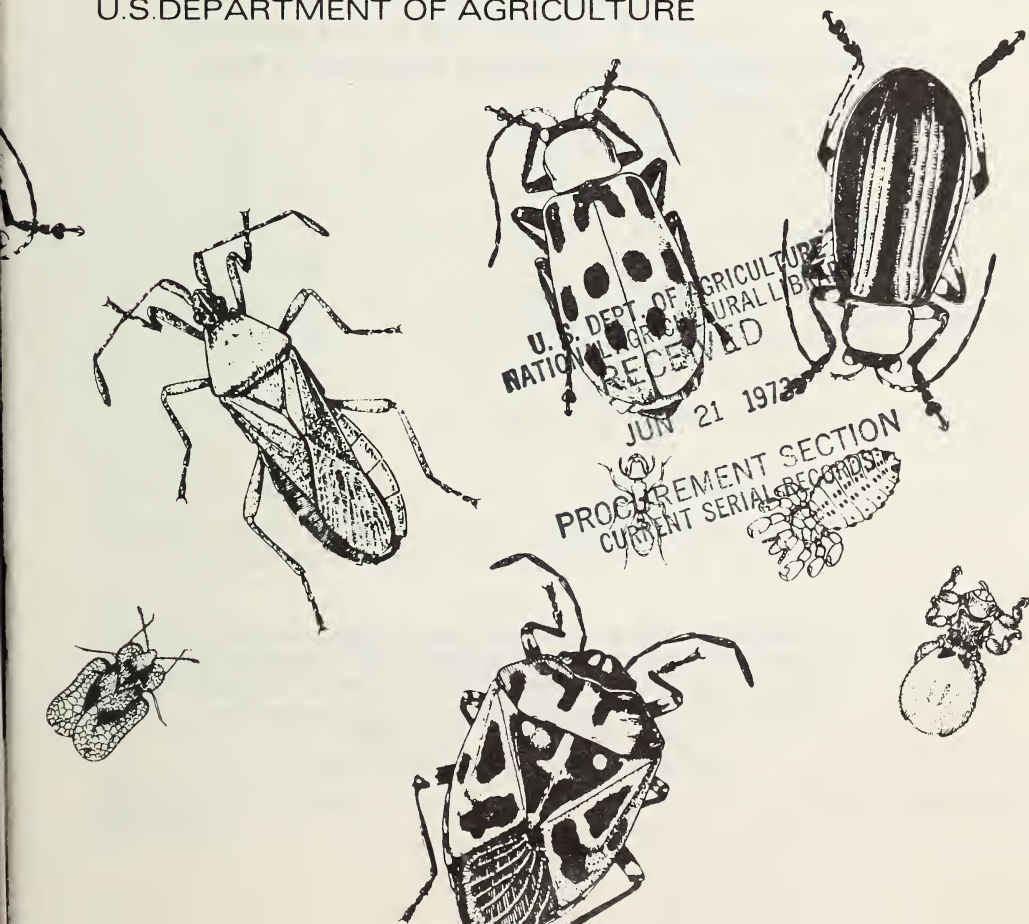
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ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
PEST SURVEY AND TECHNICAL SUPPORT STAFF

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 Service serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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CEIR
Pest Survey and Technical Support Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM heavy and scattered on small grains in western Oklahoma and south-central Kansas; moth collections increased sharply in Michigan. Armyworm not expected to be widespread problem in Illinois this season; infestations below economic levels in Maryland. (p. 335). See Light Trap Collections, pages 350 and 351. POTATO LEAFHOPPER heavy for time of year in alfalfa in east-central Illinois. (p. 336).

ALFALFA WEEVIL damaged alfalfa in eastern two-thirds of Kansas. Damage and larval populations light in Wisconsin, generally lighter than 1972 in Ohio. Predation continued to reduce ALFALFA SNOUT BEETLE populations in infested areas of New York. (pp. 338-339).

An ALFALFA WEEVIL COMPLEX in California damaged strawberry fruit. Controls in cherry orchards effective. (p. 343).

BOLL WEEVIL feeding on small cotton squares in Texas. BEET ARMYWORM larvae heavily damaged 1,900 acres of seedling cotton in Pahrump Valley of Nevada. (p. 340).

DARKSIDED CUTWORM required some controls in sugar beets in Minnesota. (p. 341).

COMMON CATTLE GRUB adult incidence and FACE FLY heavier than normal in California; STABLE FLY epidemic in some northern areas of State. MOSQUITO adults and larvae reported heavy in several areas. (pp. 345, 346).

PAINTED LADY larvae moving into crops in some Western States. (p. 346).

GRASS BUGS damaged range grasses in some Western States. (pp. 347-348).

Detection

New State records include two DROSOPHILID FLIES in Hawaii (p. 349), a LECANODIASPIDID SCALE in South Carolina (p. 344), and TUMID SPIDER MITE in Delaware (p. 343).

For new county records see page 349.

Reports in this issue are for week ending June 1 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance.....335

Insects Affecting

Corn, Sorghum Sugarcane....	336	Beans and Peas.....	342
Small Grains.....	337	Cucurbits.....	342
Turf, Pastures, Rangeland..	338	Deciduous Fruits and Nuts..	343
Forage Legumes.....	338	Small Fruits.....	343
Soybeans.....	340	Ornamentals.....	343
Cotton.....	340	Forest and Shade Trees....	344
Tobacco.....	341	Man and Animals.....	344
Sugar Beets.....	341	Miscellaneous Wild Plants..	346
Miscellaneous Field Crops..	341		
Beneficial Insects.....	347		
Federal and State Plant Protection Programs.....	347		
Hawaii Insect Report.....	349		
Detection.....	349		
Light Trap Collections.....	350		

WEATHER OF THE WEEK ENDING JUNE 4

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: The Pacific Northwest remained dry, as did California. A Low charted a rainy, sometimes destructive, course across the Nation's eastern half early in the week. A rather confusing conglomeration of weather systems brought some storms, some sunshine east of the Rockies during midweek. A huge Low deepened in Canada north of the Dakotas over the weekend, spreading violent weather over the Nation's midsection.

PRECIPITATION: Early in the week the weather was dominated by a Low that made things wet and sometimes dangerous east of the Rockies. Monday through Wednesday the Low drifted from the central Corn Belt northeastwards into Labrador, with a cold front trailing through roughly the Nation's eastern third. Saturday the 26th through Tuesday the 29th, at least 195 tornadoes occurred which were associated with this storm system, mostly in the South, Illinois, and Indiana. Cloudy and wet Memorial Day weather affected most of the Nation's eastern half. North Georgia had 5.58 to 5.91 inches of rain that morning. A strip extending from south-central North Carolina through Georgia's southwestern tip was deluged with 2.10 to 3.39 inches of rain. The storm wove an erratic pattern of destruction throughout the South into Tuesday. It generated rain and drizzle elsewhere east of the Mississippi. Behind the storm, the sun shone Tuesday afternoon over the Mississippi Valley, the Plains, the southern Rockies, and the intermountain region, as a High moved in from Canada. Through midweek, clear weather prevailed through most of the Nation. New England and eastern areas did, however, receive some rain caused by a Low which had moved north of Labrador. A midweek Low intensified over northern Ohio, generating some light precipitation and cloudiness Wednesday and Thursday, before it filled and dissipated. Local midweek thunder-

Weather of the week continued on page 352.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Euxoa auxiliaris) - OKLAHOMA - Moderate larval populations continued to damage alfalfa in Woodward County. (Okla. Coop. Sur.). KANSAS - First-generation moths in flight in Barton, Finney, and Greeley Counties. (Bell).

ARMYWORM (Pseudaletia unipuncta) - OKLAHOMA - Scattered, heavy infestations in wheat and barley in Blaine, Washita, Beckham, Custer, Caddo, Grady, Kingfisher, Canadian, Garfield, and Kay Counties. Ranged 0.2-5 per linear foot and up to 50 per square foot in blown-down areas. Head clipping light to date with most feeding on awns and leaves, but many fields being treated. Damage more common in barley than in wheat in Garfield and Kingfisher Counties. Moderate in spots in wheat in Garvin and Alfalfa Counties and in barley in Jackson County. Scattered, heavy infestations reported in Bermuda grass pastures in Comanche County; moderate in lawn checked in Payne County. (Okla. Coop. Sur.). KANSAS - Damaging infestations reported in barley from Cowley County and in wheat in Sedgwick and Harvey Counties. (Bell).

ILLINOIS - P. unipuncta overall populations very light week ending May 25, although small larvae found in roadside grasses as far north as Champaign County. Species not expected to be widespread problem in State in 1973. Current populations up to 3 per plant in field of 6 to 8-inch corn in Calhoun County; treatment required. Second field in Calhoun County averaged 3 small larvae per 100 plants. Larvae generally light in wheat throughout southern half of State. Larvae averaged one per 10 row feet in 2 fields in Washington County. Heaviest infested wheat field surveyed averaged 3 larvae per 10 feet in Calhoun County. (Ill. Ins. Rpt.). MICHIGAN - Adult collections increased sharply in all blacklight traps; total of 123 taken in Lenawee County week ending June 1. Larvae can be expected in fields next 14-21 days. (Sauer).

VIRGINIA - P. unipuncta damage to corn began in Wythe, Montgomery, Roanoke, and Pulaski Counties; some fields required treatment. Damage light in Franklin County even with high percentage of infested plants. Control critical in first 21 days following planting of no-til corn. (Allen). MARYLAND - Remained below economic levels in all sections. Heaviest larval counts ranged 3-4 per square foot in Dorchester County barley; counts taken in lodged areas only. (U. Md., Ent. Dept.).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Slight increase in small grains noted. About one adult per 200 sweeps taken in eastern Sauk and northern Grant Counties, 2 per 200 sweeps near Spring Green, southern Sauk County. (Wis. Ins. Sur.). MINNESOTA - Counts in alfalfa over State increased; ranged 30-40 per 100 sweeps. (Minn. Pest Rpt.).

CORN EARWORM (Heliothis zea) - OHIO - First adult of season collected May 27 in blacklight trap at Wooster, Wayne County. This is unusually early for State as first moths normally not collected until early August. Possibly carried in by high winds from more southern region, or may have overwintered in area. (Rings). GEORGIA - Fed in whorls of corn in Louisville area, Jefferson County. (Jordan).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Present in many grain sorghum and cornfields in Calhoun County; no economic damage noted. Moderate on grain sorghum in Erath and surrounding counties in Blacklands area. Light to moderate on older grain sorghum in Knox County. (Cole et al.). KANSAS - Light in 10 percent of whorls of 2-inch sorghum in Wabaunsee County. (Bell).

GREENBUG (Schizaphis graminum) - TEXAS - Survey indicated light, scattered populations on grain sorghum in Calhoun County; no economic damage reported. Light to moderate infestations reported from Knox County on grain sorghum. (Cole, Boring). OKLAHOMA - Destroyed stands of Sudan grass, and sorghum and Sudan crosses in Garfield and Noble Counties. Also discoloring leaves of seedling sorghum in several areas of Garfield County. (Okla. Coop. Sur.). KANSAS - Alates, along with small colonies of immatures, noted on lower leaves of 20 percent of 2-inch sorghum plants in field in Pottawatomie County and on 30 percent of 3-inch plants in Wabaunsee County field. None found in newly emerged sorghum field in Shawnee County. No serious infestations on sorghum reported; however, all fields where seedlings emerged require frequent checking for damaging buildups. (Bell).

POTATO LEAFHOPPER (Empoasca fabae) - MINNESOTA - Few found on alfalfa in Red River Valley, but some heavy concentrations found in roadsides. Ranged 10-20 per 100 sweeps, with 70 per 100 sweeps found at one location, in Marshall County. Some yellowing noted in occasional alfalfa field. (Minn. Pest Rpt.). WISCONSIN - Adults being collected more frequently in alfalfa; averaged up to 3 per 25 sweeps in some fields. (Wis. Ins. Sur.). ILLINOIS - Counts per 100 sweeps, week ending May 25, by county as follows: Ogle 60, Grundy 40, Champaign 400, Ford 100, Livingston 320, Adams 125. Champaign and Livingston Counties considered heavy for time of year. (Ill. Ins. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - TEXAS - Caused light to moderate damage to alfalfa in Hardeman County. (Boring).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - TENNESSEE - Immatures damaged whorls of corn in several western area fields. (White). DELAWARE - Adult collections in Kent and Sussex County light traps ranged 4-5 per night. (Burbutis). OHIO - First-generation moths emerging in northeast area. Mating and oviposition will occur soon. (Rings). MICHIGAN - First female moth of season taken in blacklight trap May 24 in Lenawee County. (Sauer). KANSAS - Light trap catches indicate moths flying in Finney and Brown Counties. (Bell).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Larvae found in damaging populations in two Salt River Valley area, Maricopa County, sorghum fields. (Ariz. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - This species and Euetheola rugiceps (sugarcane beetle) damaged 50-acre field of 18-inch corn in Henry County. Most damage occurred in sandier soils where 70 percent of plants badly damaged. (Bond et al.).

BLACK CUTWORM (*Agrotis ipsilon*) - ILLINOIS - Moderate in some corn in St. Clair County; widespread in Cass County; treatment applied in selected areas of heaviest infested fields. Damage reported in Clay, Montgomery, and Pike Counties. (Ill. Ins. Rpt.). MISSOURI - Heavy infestation reported on corn in Boone County; field will probably be replanted. (Keaster).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - ILLINOIS - Caused light damage in most cornfields in west-southwest and southwest districts. Field of 8-inch field corn in Calhoun County averaged 50 beetles per 100 plants; damage noneconomic. (Ill. Ins. Rpt.). INDIANA - Adults present in all corn checked in southern districts; averaged less than one per plant on corn in 2 to 4-leaf stage. (Meyer). OHIO - Caused extensive damage to seedling corn in Huron County; adult damage heavy on all of 50 plants examined in one 10-acre planting. Lighter damage to 2-inch corn observed in Clark and Preble Counties with minor damage on less than 30 percent of plants. (Fox). MARYLAND - Damage levels decreased in Talbot, Queen Annes, Dorchester, and Caroline Counties due to good growing conditions. Counts ranged 3-10 per corn plant statewide. (U. Md., Ent. Dept.).

DESERT CORN FLEA BEETLE (*Chaetocnema ectypa*) - UTAH - Damaged young corn and sorghum throughout southern Washington County. (Huber).

CORN ROOTWORMS (*Diabrotica* spp.) - TEXAS - Heavy population damaged corn about 3 miles northwest of Beeville, Bee County. Corn lodged and heavy populations of adults noted cutting silks off ears of corn. (Deer).

CORN BLOTCH LEAFMINER (*Agromyza parvicornis*) - NORTH CAROLINA - Larvae caused blade damage to scattered cornfields in Coastal Plain. Damage noted in 8 fields in Sampson, Bladen, and Duplin Counties; 60-acre field in Sampson County hosted general infestation. Yield reduction rare except in cases of extreme foliar damage. (Heath, Hunt).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Populations appeared in some sorghum fields in Calhoun County. (Cole).

SMALL GRAINS

RICE WATER WEEVIL (*Lissorhoptrus oryzophilus*) - ARKANSAS - Due to late rice crop, only small percent of fields flooded in Lonoke and Prairie Counties. Feeding signs found on average of 35 percent of new leaves in 20 fields checked; ranged zero to 90 percent with only 2 fields ranked zero. Heaviest count 3 adults per square foot. Weevils found in ground trash samples in most fields, indicated some weevils still in hibernation; however, counts low and feeding signs light in oldest rice. (Barnes, Boyer).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - OKLAHOMA - Continued moderate in wheat heads in Garfield and Kingfisher Counties. (Okla. Coop. Sur.).

HESSIAN FLY (*Mayetiola destructor*) - GEORGIA - Pupae heavy on wheat in Dougherty County. (Hays, Harris).

TURF, PASTURES, RANGELAND

TWOLINED SPITTLEBUG (Prosapia bicincta) - ALABAMA - First adult emergence of season occurred on lawn in Lee County with 1-5 adults per 500 square feet. Controls applied. (Henderson).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEVADA - Larvae ranged 20-30 per sweep with up to 70 per sweep in Orovada, Humboldt County, alfalfa seed fields. Treatments completed or to be completed this period in Churchill, Douglas, Lyon, and Pershing Counties. (Hilbig et al.). UTAH - Development slowed by late spring and cool weather. Much control expected after first alfalfa crop harvested. (Davis). Some damage apparent in Utah County alfalfa. (Daniels). COLORADO - Erratic in occurrence; ranged 20-1,200 larvae per 100 sweeps of alfalfa in Otero County. (Schweissing).

TEXAS - H. postica infestations reported in northern Panhandle in Hansford, Lipscomb, Ochiltree, and Donley Counties. In Donley County, adults ranged 1-2 per sweep. Hansford is a new county record. (Clymer). OKLAHOMA - Still light in alfalfa in southern half of the State. Larvae still damaging in few west-central and northwest counties; adults moderate to heavy in many counties in these 2 areas. (Okla. Coop. Sur.). MISSOURI - Larval counts per 100 alfalfa stems by county: Adair 160, Marion 361, and Schuyler 281. (Munson). KANSAS - Damaging infestations common in alfalfa in many areas of eastern two-thirds of State, especially in cut fields where regrowth delayed. Infestations generally light in fields surveyed in southwest district; ranged about 50-100 larvae per 100 sweeps. Some damaging infestations reported in some fields of Clark County. (Bell).

NEBRASKA - H. postica larvae ranged 12-97 (averaged 53.9) and adults 0-3 (averaged 0.3) per 100 sweeps in 23 alfalfa fields in Otoe County week of May 23. Larvae 28 and one adult per 100 sweeps taken in one field at Mead, Saunders County. In Gothenburg and Cozad areas of Dawson County, larvae ranged 14-2,095 (averaged 261.9) per 100 sweeps in 11 fields; adults ranged 1-39 (averaged 6.5). Counts in Lexington and Overton ranged 0-520 larvae (averaged 114.8) and 0-8 adults (averaged 2.6) per 100 sweeps in 10 fields. (Manglitz). SOUTH DAKOTA - Moderate in alfalfa near Spearfish, Lawrence County, week ending May 25. Adults ranged 32-225 per 100 sweeps. (Walstrom).

WISCONSIN - H. postica damage and larval survey underway; completed in some areas. Data indicate light damage and very low larval counts in alfalfa due to fact many eggs still being laid. Females heavy with eggs but warm evenings needed for oviposition. Hatch will not occur for about 7 days. Most alfalfa probably will be cut prior to significant feeding. Hatch underway in some sandier soiled areas and in fields with southern exposure. Increased numbers of first instars noted in such fields but alfalfa in hard-bud stage, some laying in progress. Some cocoons of Bathyplectes curculionis (an ichneumon wasp) appeared where larvae from overwintered eggs pupated. Heaviest H. postica larval counts reached 5 per 25 sweeps with comparable number of adults taken. (Wis. Ins. Sur.).

ILLINOIS - Hypera postica larval counts per 100 sweeps, week ending May 25, by county as follows: Ogle 60, Grundy 40, Champaigne 400, Ford 140, Livingston 120, Adams 10,000. (Ill. Ins. Rpt.). INDIANA - Larvae active in northernmost counties. In 29 fields checked in northernmost tier of counties, average infestation ranged 53-77 percent and larvae per terminal ranged from 1-2.5 to 1-3. Infestation much heavier in northernmost tier of counties than in tier immediately south. Damage to alfalfa reported in counties south of Indianapolis. (Huber, Meyer). MICHIGAN - Egg hatch rapid in Lansing area alfalfa May 28 and larvae common in southern part of State. (Sauer). OHIO - Larval counts and damage generally lighter in alfalfa and clover than in 1972. First cutting of alfalfa underway; anticipated that hay will be cut before damage occurs in many areas. Some economic damage reported in Knox, Franklin, and Pickaway Counties, however. (Fox).

WEST VIRGINIA - H. postica tip infestation 88 percent with 20 percent defoliation to alfalfa in Pleasants County May 23. (Cutlip). VIRGINIA - Defoliation 50 percent on 5 acres of alfalfa at one Montgomery County location and 95 percent on 10 acres at another location. (Surles). MARYLAND - Damage levels declined statewide, pupation underway. First cuttings of alfalfa underway throughout central area. (U. Md., Ent. Dept.).

ALFALFA SNOUT BEETLE (Otiorhynchus ligustici) - NEW YORK - Predation continued to reduce populations as this pest entered oviposition period. First eggs of season found in Wayne County May 25. Controls can still be made where necessary with expectations of success as egg laying proceeds slowly. Beetles continued to move about in northern areas of Jefferson County infestation. (N.Y. Wkly. Rpt., May 29).

ALFALFA LOOPER (Autographa californica) - OREGON - Very heavy in many parts of State. Adults 150+ nightly in light traps at Ontario, Malheur County; 75+ per night taken in blacklight trap at Hermiston, Umatilla County. Total of 252 adults taken in pheromone traps at university vegetable farm in Linn County, May 22-29. (Brown et al.).

VARIEGATED CUTWORM (Peridroma saucia) - OKLAHOMA - Larvae continued to damage alfalfa in Washita and Caddo Counties. (Okla. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Averaged 5 per sweep in Reese River, Lander County, alfalfa seed fields and 100 per sweep in Virgin Valley, Clark County, alfalfa hay. (Zoller et al.). ARIZONA - Ranged 200-400 per 100 sweeps of alfalfa at Yuma Valley, Yuma County, and 50 in western area of Phoenix, Maricopa County. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - MISSISSIPPI - Vacuum samples in Bolivar County alfalfa indicate 10,000 adults per acre. (Schuster).

ALFALFA LEAF BLOTCH-MINER (Agromyza frontella) - VERMONT - Adults prevalent in alfalfa, leaf mines appeared week ending May 30. (MacCollom).

BROWN WHEAT MITE (Petrobia latens) - NEVADA - Occasional specimens taken from alfalfa at Reese River, Lander County. This is a new county record. (Bechtel, Peters).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Overwintered adults active throughout Eastern Shore and southern area. Light, less than 6 adults per 20 row feet in newly emerged soybeans. Egg laying underway in Somerset, Worcester, Wicomico, and Dorchester Counties. Overwintered populations appear to be moderate. (U. Md., Ent. Dept.). TENNESSEE - Fed on soybeans in Franklin County. (Cagle).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Overwintered adults feeding in small squares in Calhoun County; infestation appears very light. Pheromone traps continued to catch weevils in Blacklands area. In McLennan County, catch of 14 weevils from 6 traps reported. In Hill County weevils averaged 2 per trap; Coryell averaged 3.5. In Rolling Plains, 37 weevils captured on pheromone trap in Cottle County and 10 each in Hardeman and Wilbarger Counties. Nine weevils trapped in Childress County; 3 in Haskell County. None taken in Jones, Knox, and Hall Counties. (Cole et al.). OKLAHOMA - Leggett trap collections showed 3 adults in Jackson County and one adult in Caddo County. (Okla. Coop. Sur.). ARKANSAS - Total weevils taken in Leggett traps increased over previous period. Generally, numbers heavier in northern area than in southern area, except in Phillips County in east-central area where 230 weevils taken in 10 traps this period. (Boyer).

MISSISSIPPI - Leggett traps indicate weevils emerged in many counties where no diapause control used. Average trap catches by county: Holmes 3.8 per trap (10 traps); Bolivar 3 per 173 traps; Grenada 9.4 per trap (19 traps); Webster 28.4 per trap (17 traps); Panola 27.6 per trap (8 traps); Tallahatchie 18.8 per trap (6 traps); Yalobusha 5.55 per trap (31 traps, 41 acres), 8.58 per trap (26 traps, 47.5 acres), 4.31 per trap (26 traps, 24 acres), 3.84 per trap (31 traps, 28 acres). (Robinson). ALABAMA - Live weevil counts on presquare cotton in 3 to 5-leaf stage in Covington County much heavier than previous weeks. None found on 4 farms in Monroe County and several farms in Shelby and Limestone Counties. (Pike et al.). GEORGIA - Up to 155 adults per Leggett trap taken in southern area; adults feeding on seedlings and caused "black flagging." (Womack, Barry). TENNESSEE - One weevil found in cotton terminal in Fayette County. Survey limited due to excessive rains. (Locke).

BOLLWORMS (Heliothis spp.) - GEORGIA - Fed on seedlings in southern area. (Womack). ARKANSAS - Due to lateness of cotton crop, sugar lines being operated primarily on vetch. Few H. zea (bollworm) moths observed in Lonoke and Mississippi Counties, none seen on vetch in Jackson County. (Boyer).

BEE T ARMYWORM (Spodoptera exigua) - NEVADA - Larvae heavily damaged about 1,900 acres of seedling cotton in Pahrap Valley, Nye County. Treatments applied. (Hoff, Zoller).

FLEAHOPPERS - ARIZONA - Spanogonicus albofasciatus averaged 2 per plant in one cotton field on west side of Maricopa County. Some fields treated at Yuma, Yuma County. Averaged 5 per 100 sweeps in 2 cotton fields at Yuma. (Ariz. Coop. Sur.). TEXAS - Pseudatomoscelis seriatus (cotton fleahopper) heavy on horsemint in south-central area. Some adults may be found in cotton fields but no reproduction noted. Slight damage recorded in some cotton. (Cole).

TARNISHED PLANT BUG (Lygus lineolaris) - MISSISSIPPI - Sweep samples from Erigeron annuus (annual Fleabane), a wild host, indicate this plant bug developing in large numbers. Total of 128 adults and 253 nymphs taken in 100 sweeps of 12-inch net in Monroe County. (Robinson).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - ALABAMA - Heavy in field borders on vetch and cotton in 5 cotton fields examined in Limestone County. Controls applied on one field border. (McDonald et al.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults on newly transplanted tobacco ranged 3-8 per plant in northern Prince Georges County. Damage subeconomic to date. Recent rains promoted good growth, plants outgrowing injury. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Reached threshold levels in about 25 percent of tobacco fields in Bladen and Robeson Counties. Fields with plants "buttoning" or near this stage usually have higher percentage of plants infested. (Robertson, Hunt).

SUGAR BEETS

DARKSIDED CUTWORM (Euxoa messoria) - MINNESOTA - Present in sugar beet fields in Norman and Clay Counties. Damage noticeable enough in some fields to start controls. Situation expected to become more serious; growers advised to watch fields closely next 7-14 days. (Minn. Pest Rpt.).

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Most larvae have pupated; fly emergence about 10 percent in Walsh and Pembina Counties. Flies moved into new beet fields, up to 25 eggs per plant present on beets. Most beets in 4-leaf stage. (Kaatz). MINNESOTA - Adults very active in 1972 beet fields in Norman and Clay Counties. Egg laying probably underway in area. (Minn. Pest Rpt.).

MISCELLANEOUS FIELD CROPS

REDBACKED CUTWORM (Euxoa ochrogaster) - OREGON - Larvae pupating in Culver City area, Jefferson County, mint fields. First pupae (3) found May 30. It is estimated that about 1 percent of population pupated. (Berry).

BEET ARMYWORM (Spodoptera exigua) - NEVADA - Larvae of this species and Trichoplusia ni (cabbage looper) caused moderate damage to about 300 acres of mint and required treatment in Pahrump Valley, Nye County. (Hoff).

WHITELINED SPHINX (Hyles lineata) - NEVADA - Larval migrations heavy into cropland and across roads in Fallon area, Churchill County, and Schurz, Mineral County. (Knous et al.).

POTATOES, TOMATOES, PEPPERS

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Heavy populations defoliated potatoes near Munday, Knox County. Also damaged lettuce, beans, and tomatoes in home gardens in Brazos County. (Boring et al.).

TOMATO PINWORM (Keiferia lycopersicella) - TEXAS - Light to moderate populations attacked tomatoes at several locations in Brazos County. Tomatoes averaged 2 infested leaves per plant in two gardens examined. (Green).

POTATO SCAB GNAT (Pnyxia scabiei) - WASHINGTON - Field infestations in central area not evident at present. Suspect that populations greatly reduced by sudden cold conditions in late fall. (Landis).

BEANS AND PEAS

PEA LEAF WEEVIL (Sitona lineatus) - WASHINGTON - Population levels, based on damage to young peas, much lower in Whitman County than in previous 2 years; suspect cold dry conditions last winter and early spring responsible. (Landis, Entenmann).

PEA APHID (Acyrtosiphon pisum) - TENNESSEE - Heavy on pea plantings in Fayette County. (Gordon).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - MISSISSIPPI - Larvae of this pierid and Trichoplusia ni (cabbage looper) moderate on 100 acres of cabbage in Copiah County. (Ray).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - MARYLAND - Adults active in watermelon and cantaloupe fields in Dorchester and Wicomico Counties. Damage light to date. Most growers held off sprays due to rain. Sprays expected in all fields within next 7 days. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

ALFALFA WEEVIL COMPLEX (Hypera spp.) - CALIFORNIA - Still entering cherry and apricot orchards in several areas; damaged ripening fruit and stems of cherries. Treatment applied by many cherry growers very effective. Weevils still moving from alfalfa in unusual numbers. Even in areas far from alfalfa, homeowners complained about weevils entering homes. Bur clover hard hit this spring and widespread in occurrence. Due to plentiful rainfall, clover unusually succulent. (Cal. Coop. Rpt.).

CODLING MOTH (Laspeyresia pomonella) - MICHIGAN - Pheromone trap catches indicate moth emergence underway throughout western area fruit belt. Moths appeared in northern counties about May 23. (Sauer).

CALIFORNIA PEARSLUG (Pristiphora abbreviata) - CALIFORNIA - Active in northern pear-growing areas; defoliated pear orchards. Treatment required. (Cal. Coop. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Egg laying unusually light in all areas checked through May. White eggs found as far north as southern Pottawatomie County by May 31; red and white eggs present in south-central counties. Infestations averaged 1 or 2 percent in most areas but ranged up to 6 percent in few areas. (Okla. Coop. Sur.). TEXAS - Based on moth emergence, control measures indicated for Cottle County and counties farther north during period June 4-9. Moths continue to emerge in Wichita, Wilbarger, Young, and Baylor Counties in Rolling Plains. Producers in Hill, Limestone, and other counties urged to continue checking trees in central area. (Boring, Hoelscher).

PECAN PHYLLOXERA (Phylloxera devastatrix) - TENNESSEE - Caused light to severe damage to wild and cultivated pecans in several western counties. (H.D. Gordon, C.D. Gordon).

SMALL FRUITS

ALFALFA WEEVIL COMPLEX (Hypera spp.) - CALIFORNIA - Adult weevils damaged strawberry fruit in 30-acre planting in Sanol, Alameda County. Damage occurred in dooryard strawberry patches and commercial plantings in San Joaquin County. Also reported on cherries, apricots, and beans. (Cal. Coop. Rpt.). See CEIR 23(22): 321.

EUROPEAN RED MITE (Panonychus ulmi) - PENNSYLVANIA - Overwintering eggs in one Concord grape vineyard averaged 33 per nodal area. Eggs hatched, larvae and nymphs appeared on grape leaves. Motile forms averaged 3 per leaf in one vineyard. (Jubb, May 25).

ORNAMENTALS

TUMID SPIDER MITE (Tetranychus tumidus) - DELAWARE - Very common on philodendron house plant in Newark, New Castle County, May 23, 1973. Collected and determined by G. Ide. Confirmed by E. Baker. This is a new State record. (Burbutis).

SPRUCE SPIDER MITE (Oligonychus ununguis) - FLORIDA - Nymphs and adults severely infested 90 percent of 7,450 juniper plants (Juniperus excelsa) and 90 percent of 81,000 arborvitae plants at nursery in Baker County May 24. (Fla. Coop. Sur.).

TEA SCALE (Fiorinia theae) - SOUTH CAROLINA - Infested sasanqua in Greenville County May 17, 1973. This is a new county record. (McCaskill).

AN ARMORED SCALE (Pseudaonidia paeoniae) - SOUTH CAROLINA - Moderately infested camellia plants in Greenville County May 17, 1973. Collected and determined by D.K. Pollet. This is a new county record. (McCaskill).

A LECANODIASPIDID SCALE (Lecanodiaspis prosopidis) - SOUTH CAROLINA - Heavy infestation on wild azalea in Oconee County April 30, 1973. Collected and determined by D.K. Pollet. This is a new State record. (McCaskill).

A SOFT SCALE (Ceroplastes ceriferus) - SOUTH CAROLINA - Light on camellias in Pickens County nursery. Moderate to heavy on sasanqua at same nursery. Controls applied. (McCaskill).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - MISSISSIPPI - Moderate to heavy on pine at several locations in Madison County. (Boone).

PINE SAWFLIES (Neodiprion spp.) - MASSACHUSETTS - Several larval infestations of N. sertifer (European pine sawfly) noted on pines at Longmeadow, Hampden County; pines almost totally defoliated. (Jensen). WEST VIRGINIA - N. pratti pratti heavily defoliated one Virginia pine in Doddridge County, May 27, 1973. Collected and determined by A.R. Miller. This is a new county record. (Hacker). TENNESSEE - N. taedae linearis defoliated 50 percent of year-old needles in pine stand in Haywood County. (Gordon).

SPRING CANKERWORM (Paleacrita vernata) - NORTH DAKOTA - Larvae defoliated Siberian elm single-row shelterbelts in Mayville area, Traill County. Some trees now 80 percent defoliated. Additional defoliation will occur; some shelterbelts expected to be 100 percent defoliated. (Brandvik).

ELM CALLIGRAPHA (Calligrapha scalaris) - KANSAS - Light larval infestations on American elm were found in Macksville, Stafford County, and heavier than usual infestations found on elms in McPherson, McPherson County, where significant defoliation observed. (Bell).

MAN AND ANIMALS

SCREWORM (Cochliomyia hominivorax) - Total of 148 confirmed cases reported in the continental U.S. during period May 20-26 as follows: Texas 10, New Mexico 11, Arizona 123, California 4. Total of 220 cases confirmed from Mexico. Number of sterile flies released in U.S. during this period totaled 100,971,900 as follows: Texas 81,641,400; New Mexico 3,630,000; Arizona 14,800,500; California 900,000. Total of 82,222,800 sterile flies released in Mexico. (Anim. Health).

CATTLE GRUBS (Hypoderma spp.) - KENTUCKY - Larvae, mostly H. bovis (northern cattle grub), averaged 0.8 per animal on backs of Holstein dairy cows of various ages in Fayette County. (Barnett). CALIFORNIA - H. lineatum (common cattle grub) still running cattle; season late with plenty of moisture. Fly incidence heavier than normal; will result in many infested animals. (Cal. Coop. Rpt.).

FACE FLY (Musca autumnalis) - CALIFORNIA - Occurred in heavier than usual numbers in infested counties. Infestations more general than past years; livestock owners who previously escaped infestation now feeling brunt of this pest. Mountain areas especially bad; calf populations suffering from attacks. Pinkeye increased, previous control materials inadequate due to resistance to phosphate materials. Livestock on irrigated pastures annoyed more than those on open range due to lack of shade or protection. (Cal. Coop. Rpt.). MISSISSIPPI - Adults averaged 6 per face on cattle in Monroe and Chickasaw Counties. (Robinson). INDIANA - Averaged 20 per head on some horses in Warren County. (Chandler). OHIO - Counts variable on beef and dairy cattle; ranged from 9 per face in Richland County to less than one per face in Butler County. (Fox).

MOSQUITOES - MARYLAND - Aedes sollicitans adults active in Wicomico and Prince Georges Counties. Landing counts ranged up to 23 females per 5 minutes. A. canadensis active in central area with landing counts in range of 2-4 per 5 minutes. (Md. Dept. Agr.; U. Md., Ent. Dept.). GEORGIA - Mosquitoes heavy, annoyed residents throughout State. (Nolan). TENNESSEE - Adults of various species heavy in flooded areas of western part of State. (Locke). INDIANA - Second and third-instar larvae of Culex restuans collected in Warren County May 25. Determined by D.A. Shroyer. (Meyer). WISCONSIN - Mosquitoes heavy in wooded lowlands. Cool, wet weather retarded activity; biting not as serious as could be, or as it will be. Light annoyance to dairy cattle reported in some areas. (Wis. Ins. Sur.).

MINNESOTA - Very heavy brood of Aedes vexans that hatched as result of rains May 21-25 now mostly third instar. Other important species in larval collections in Metropolitan Mosquito Control District include A. cinereus and Culiseta inornata. Light trap collections week ending May 25 totaled 382 females from 16 light traps; C. inornata comprised 30 percent of catch; remainder composed of 10 species of early spring Aedes spp. Daytime bite collections totaled 106 females; Aedes abserratus most frequently taken. (Minn. Pest Rpt.). OKLAHOMA - Psorophora ciliata, P. ferox, and P. cyanescens larvae ranged up to 60 per dip in temporary pools in Payne County area. (Okla. Coop. Sur.). UTAH - Aedes dorsalis and A. nigromaculis larvae heavy in irrigated pastures in Weber County; varied 0-500 per dip. (Fronk). NEVADA - Aedes spp. adults very heavy in McDermitt area, Humboldt County, and Virgin Valley, Clark County. (Lauderdale, Zoller).

HORN FLY (Haematobia irritans) - GEORGIA - Increased on cattle throughout State. (Nolan). MISSISSIPPI - Averaged 300 per cow in Monroe, Chickasaw, and Lee Counties; 200 per head in Newton County. (Robinson). TEXAS - Heavy on livestock throughout south-central area; heavy in Brazos County. Heavy numbers attacked untreated cattle in Blacklands counties near Stephenville. Moderate infestations reported from Wilbarger, Wichita, Knox, and Clay Counties in Rolling Plains. Built up throughout Panhandle on

cattle. (Cole et al.). OKLAHOMA - Ranged 700-750 per head on cattle checked in Payne County; moderate in southwest counties and in Pontotoc County. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - GEORGIA - Increased on cattle and horses throughout State. (Nolan). ILLINOIS - Averaged 43.5 per animal in two pastured herds in Jersey County. (Ill. Ins. Rpt.). OKLAHOMA - Averaged 4 per head on dairy cattle checked in Payne County. (Okla. Coop. Sur.). CALIFORNIA - Almost epidemic in some valley areas in northern part of State. Wet winter and poor sanitation contributing factors to this situation. (Cal. Coop. Rpt.).

SHEEP KED (Melophagus ovinus) - WYOMING - Ranged 2-21 and 2-39 on ewes in two Platte County flocks; ranged 108-242 and 19-54 on lambs in same flocks. Ranged 0-21, 24-37, and 1-17 on lambs in 3 Goshen County flocks. (Pfadt et al.).

BLACK FLIES - GEORGIA - Attacked horses in Clarke County and humans in Banks County. (Nolan, Jordan). WISCONSIN - Populations very heavy in some areas, i.e. Vilas, Iron, Lincoln, Fond du Lac, Juneau, Wood, and Portage Counties. In most areas, no biting reported, but heavy biting reported in Vilas County; probably due to species differences in various areas. (Wis. Ins. Sur.).

BITING MIDGES (Culicoides spp.) - INDIANA - Adults very annoying at dusk in Warren County; stopped field work in several instances May 26-27. (Chandler).

HOG LOUSE (Haematopinus suis) - OHIO - Infested about half of 525 feeder pigs in Preble County and 2 Duroc sows and 7 young pigs in Morrow County. (Deacon).

HEAD LOUSE (Pediculus humanus capitis) - CALIFORNIA - Several school buses treated in Sacramento, Sacramento County. "Gray backs" crawling over seats and bus interiors. Such infestations not seen for many years. (Cal. Coop. Rpt.).

TICKS - SOUTH CAROLINA - Populations very heavy in many sections of State. One death contributed to Rocky Mountain spotted fever to date. (McCaskill). GEORGIA - Large numbers of Amblyomma americanum (lone star tick) and Dermacentor variabilis (American dog tick) collected on tick drags in coastal recreational areas. D. variabilis infested horses in Clarke County. (Nolan).

MISCELLANEOUS WILD PLANTS

PAINTED LADY (Cynthia cardui) - MONTANA - Present in all western counties of State east to Yellowstone County, from Beaverhead County to Canadian border. (Pratt). IDAHO - Larvae moved from several patches of stripped Canadian thistle to peppermint plants in a 20-acre mint field at Boise, Ada County. (Peterson). OREGON - Larvae very numerous, caused heavy damage to foliage of bull thistle (Cirsium vulgare) in Dixie Creek area (near Lime) of Baker County. (Brown). NEVADA - Heavy larval migrations occurred in Seven Troughs area, Pershing County; Eureka, Eureka County; Crescent Valley, Elko County; and Lake Valley, Lincoln County. In some areas migrating into alfalfa and barley. (Nev. Coop. Rpt.). Heavy larval infestations noted on musk thistle in Verdi area, Washoe County. (Adams, Martinelli). UTAH - Adults very abundant

on warm days; may be second generation from southern range areas. Appear to be smaller and browner (less orange) than earlier flights. (Davis et al.).

BENEFICIAL INSECTS

ICHNEUMON WASPS - MICHIGAN - Lemophagus curtus and Diaparsis n. sp. parasitized Oulema melanopus (cereal leaf beetle) larvae up to 28 percent in a field insectary in Berrien County. (Berger). WEST VIRGINIA - Diaparsis spp. released May 22-24 in Putnam, Cabell, and Jackson Counties. (Hacker). MISSISSIPPI - Bathyplectes curculionis, a parasite of Hypera postica (alfalfa weevil), averaged 1,300 per acre in alfalfa in Bolivar County. (Schuster).

A CHALCID WASP (Brachymeria intermedia) - WEST VIRGINIA - This pupal parasite of Porthetria dispar (gypsy moth) released May 25 in Kanawha County. (Coffman). Adults released in Jefferson, Berkeley, Hampshire, Pocahontas, and Hardy Counties. (Hacker).

A EULOPHID WASP (Tetrastichus julis) - OHIO - This larval parasitoid of Oulema melanopus (cereal leaf beetle) recovered for first time in Fairfield, Jackson, and Muskingum Counties. These are new county records. WEST VIRGINIA - Recovered for first time in Mason, Wood, and Pleasants Counties. These are new county records. (Berger).

A MYMARID WASP (Anaphes flavipes) - WEST VIRGINIA - This egg parasitoid of Oulema melanopus (cereal leaf beetle) released in following counties (number of release sites in parentheses): Jackson (2), Roane (1), Tyler (6), Preston (11), Taylor (4), Monroe (14), Raleigh (3), Summers (4), Mercer (2), Fayette (1), Nicholas (1). (Brooks et al.).

A LADY BEETLE (Coleomegilla maculata) - MISSISSIPPI - Averaged 16,000 adults and 25,000 larvae per acre in alfalfa in Bolivar County. (Schuster).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - NEW YORK - Adults collected from winter wheat at West Sparta, Livingston County, April 30 by R.E. Maire, and from wheat at Ulysses, Tomkins County, May 11 by P.E. Gerber. VIRGINIA - Adult collected on wheat at Purcellville, Loudoun County, May 6 by R.H. Morris. Larvae collected on barley at Orange, Orange County, May 14 and on barley and rye at Ruckersville, Greene County, May 16 by R.H. Morris and E.L. Thompson; and on wheat near Bassett, Henry County, May 23 by W.D. Jones. All determined by R.E. White. These are new county records. (PPQ). WEST VIRGINIA - Average counts per square foot in oats by county: Monroe - larvae 2, eggs 3; Pleasants - larvae 6, eggs 7; Putnam - larvae 2, 1 egg; Mason - larvae 11, eggs 5; Roane - larvae 2, eggs 3; Jackson - 1 larva, 3 eggs. (Besticm, Hacker). KENTUCKY - Completed surveys negative in Christian, Webster, and Union Counties. (Greene). MICHIGAN - Adults active in oats and eggs found in native grasses in Osceola County May 25. (Krich).

GRASS BUGS - NEVADA - Irbisia pacifica ranged from 9 per plant on small plants to 19+ per plant on large plants of ryegrass in McDermitt area, Humboldt County. (Lauderdale). IDAHO - Labops spp.

and *Irbisia* spp. present in spotted areas of about 400 acres of rangeland near Donnelly, Valley County; removed chlorophyll from grass leaves. (Olsen). UTAH - Labops spp. and Irbisia spp. ranged 200-300 per square foot in areas from Cedar City to Kanarraville, Iron County; grasses, mostly crested wheat-grass, badly bleached. Counts, mostly L. hesperius (90 percent adults), ranged 175-796 (average 470) per sweep in Wanrhodes Canyon, Utah County; 90 percent of grass leaf surfaces yellow. Damaged range areas will produce no seed. Other areas of damage observed in Sanpete, Sevier, and Garfield Counties. (Haws). WYOMING - L. hesperius ranged 75-100 per square yard on wheat-grasses in Laramie County. (Hardy, Patch).

GRASSHOPPERS - NORTH DAKOTA - Infestations in field margins, drainage ditches, and roadsides ranged up to 10 (averaged less than 1) per square yard in northern Cass and southern Traill Counties. Development first through third instar. Melanoplus bivittatus dominant species. Damaged sunflowers in Grandin and Drayton areas. Only scattered economic infestations expected in eastern counties this season. (Brandvik). WYOMING - Aulocara ellioti, Amphitornus coloradus, Ageneotettix deorum, and Melanoplus spp. ranged 2-6 per square yard in Hot Springs and Sheridan Counties. (Hardy). IDAHO - Grasshopper egg hatch well underway May 24, some second instars present; population not as heavy as one year ago north of Gooding, Gooding County. (Koester).

GYPSY MOTH (Porthetria dispar) - MAINE - Larvae produced minor but noticeable defoliation of elm at Augusta, Kennebeck County, and may have caused like symptoms on other hardwoods, such as oak in southern area. (Gall). VERMONT - Controls applied to 800 acres in residential and recreation areas in Burlington, Chittenden County, May 30. Larvae began entering second instar May 25. Defoliation apparent in some larger oaks in spray block. About 100 percent defoliation expected in some areas of block where no controls applied. (Benedict). MASSACHUSETTS - Larvae heavy on foliage of abandoned apple trees at Easthampton, Hampshire County. (Jensen). RHODE ISLAND - Some third-instar larvae found in Washington and Providence Counties. Heavy infestation of oaks in home grounds and adjacent areas reported from Washington, Kent, and Providence Counties. (Reli et al., May 23). NEW JERSEY - Larvae easy to find in blueberry fields in some Burlington and Ocean County areas. Controls recommended. (Ins.-Dis. Newsltr.). PENNSYLVANIA - Treatment for this pest totaled 8,596 acres in Bucks, Berks, Lebanon, Lehigh, Northampton, Schuylkill, and Carbon Counties. Treatment completed by May 28 in all but Berks, Carbon, and Schuylkill Counties. (Pa. Dept. Env. Res.).

JAPANESE BEETLE (Popillia japonica) - GEORGIA - First adult of season collected from trap May 22 in Richmond County. (Fortson).

WHITEFRINGED BEETLES (Graphognathus spp.) - ALABAMA - Larvae and adults damaged corn, grass in pastures, and peanuts on farm in Henry County. First report of adult emergence for 1973. (Burns et al.).

HAWAII INSECT REPORT

New State Records - One male and one female of Drosophila virilis Sturtevent taken at bait at Kihei, Maui, in June 1971. Leucophenga maculosa Coquillett, first collected during 1971 in Pohakuloa area on Hawaii, has since been collected at Kamuela, Hawaii, and several localities on Maui, Lanai, and Oahu. Determinations by M.R. Wheeler. These drosophilid flies are common over North and South America. (Kaneshiro).

General Vegetables - TOBACCO FLEA BEETLE (Epitrix hirtipennis) adults heavy on foliage of eggplants in Pearl City and in some fields at Waimanalo, Oahu. "Shothole" damage conspicuous on many leaves. (Kawamura).

Ornamentals - CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on foliage of commercial roses in Waianae, Oahu. (Haramoto).

Forest and Shade Trees - Larvae of a NOCTUID MOTH (Melipotis indomita) heavy under bark and under debris at bases of kiawe trees at Hickam Air Force Base, Honolulu, Oahu; 800+ larvae collected from 5 trees by 2 men in less than 30 minutes. (Kahale, Kumashiro). Light buildup of CUBAN LAUREL THRIPS (Gynaikothrips ficorum) occurred on Chinese banyan trees in Honolulu, Pearl City, Kaneohe, and many other areas on Oahu. Montandoniola moraguesi (an anthocorid bug), a purposely introduced predator, numerous in curled leaves and preyed on eggs, nymphs, and adults of G. ficorum in the areas. (Kawamura).

Miscellaneous Insects - Nymphs and adults of a small BANDEDWING GRASSHOPPER (Oedaleus abruptus) heavy in large weedy area adjacent to new stadium site at Halawa, Oahu; up to 10 individuals per square foot. (Kawamura).

DETECTION

New State Records - Two DROSOPHILIS FLIES - HAWAII - Drosophila virilis - Maui; Leucophenga maculosa - Hawaii. (p. 349). A LECANODIASPIDID SCALE (Lecanodiaspis prosopis) - SOUTH CAROLINA - Oconee County. (p. 344). TUMID SPIDER MITE (Tetranychus tumidus) - DELAWARE - New Castle County. (p. 343).

New County Records - HOLLYHOCK WEEVIL (Apion longirostre) VIRGINIA - Adults taken in Roanoke, Franklin, Pittsylvania, Campbell, and Bedford Counties May 30, 1973. (Allen).

ALFALFA WEEVIL (Hypera postica) TEXAS - Hansford (p. 338). AN ARMORED SCALE (Pseudaonidia paeoniae) SOUTH CAROLINA - Greenville (p. 344). BROWN WHEAT MITE (Petrobia latens) NEVADA - Lander (p. 340). CEREAL LEAF BEETLE (Oulema melanopus) VIRGINIA - Loudoun, Orange, Greene, Henry (p. 347). A CONIFER SAWFLY (Neodiprion pratti pratti) WEST VIRGINIA - Doddridge (p. 334). A EULOPHID WASP (Tetrastichus julis) OHIO - Fairfield, Jackson, Muskingum; WEST VIRGINIA - Mason, Wood, Pleasants. (p. 347). TEA SCALE (Fiorinia theae) SOUTH CAROLINA - Greenville (p. 344).

storms broke out over the Nation's midsection. The wettest band dumped from 1 to 2.25 inches of rain over central Oklahoma and northwestern Arkansas Wednesday and Thursday. A Low situated in Mexico caused considerable cloudiness over the west coast, and scattered thundershowers erupted in northern California and Oregon. Also, a tornado was sighted 27 miles north of San Francisco. Friday was again clear over most of the Nation; however, a few thundershowers lingered over Dixie. One storm dropped 4.20 inches of rain in southern Alabama. Friday, a Low drifted south from Canada and sat in the vicinity western North Dakota till mid-Saturday. East of its cold front, and south of an occluded front stretching from the Dakotas to Maine, muggy weather, peppered with thunderstorms and tornadoes, prevailed. Saturday and Sunday this system intensified. Sunday it deepened into a massive Low centered in Canada just north of the Dakotas. Severe weather returned to the Plains; thunderstorms erupted from Texas to the Great Lakes; winds gusted from 50 mph in Oklahoma and 62 mph near Ft. Worth, Texas; Hebron, Nebraska, got 2.82 inches of rain. Late Sunday and early Monday, warm, moist gulf air proceeded north to meet the system, resulting in numerous thunderstorms.

TEMPERATURE: The East recovered from last week's cold snap: Temperatures east of the Appalachians averaged mostly from 1 degree to 3 degrees above normal. Some of New England and eastern New York did, however, average from 1 degree to 3 degrees below normal. From the Appalachians through the Rockies, temperatures mainly averaged from 1 degree to 3 degrees below normal, with just a few pockets averaging 6 degrees below normal. The exception here was the northwestern Corn Belt and parts of the Dakotas and Montana which averaged from 1 degree to as much as 6 degrees above average. Southern California west into central Arizona had temperatures from 1 degree to 6 degrees above normal. This band of higher than usual temperatures extended inland into Canada, while the northern part of California's coastline and Washington and Oregon coastal areas averaged from 1 degree to 6 degrees below normal. East of the Mississippi, a Low kept the mercury down most of the week. Late in the week a High in the Atlantic off the Carolinas pumped moist, hot air into the East, first warming things up, then making muggy and miserable. Early in the week, morning lows along the gulf were in the high 60's and low 70's; however, warm, moist air pushed inland around Thursday. Morning lows thereafter were in the 60's to high 70's, with afternoon highs in the 80's and 90's. In the Pacific Northwest, Highs in the Pacific kept coastal temperatures relatively normal. While in the interior, some desert air did get north and raise some midweek temperatures as high as 90 degrees.

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