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Cooperative
**ECONOMIC INSECT
REPORT**

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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**Current Conditions

ARMY CUTWORM adults heavy in eastern Wyoming; ARMYWORM damaging corn in Ohio, Connecticut, and Virginia. BEET LEAFHOPPER increasing on sugarbeets in areas of Colorado. CORN LEAF APHID moderate to heavy on barley in Pershing County, Nevada, and on sorghum in northeast Oklahoma. (p. 573). POTATO LEAFHOPPER increasing on Eastern Shore of Maryland and in Michigan. (p. 574).

EUROPEAN CORN BORER flight and eggs heaviest for June in 15 years in Hudson Valley of New York; some damage in other States. (pp. 574, 575). ALFALFA WEEVIL damage worst in over 20 years in Millard County, Utah; damaging in some other States. (pp. 577-578). PEA APHID heavy on alfalfa in northeastern Colorado. (p. 579).

TOBACCO THRIPS and other species heavy on peanuts in southeast Alabama. (p. 581). BOLL WEEVIL generally heavy throughout southern and central Alabama; square damage heavy in southern area of State. (p. 581). BOLLWORM oviposition increased greatly throughout Alabama. COTTON FLEAHOPPER nymphs heavy in most fields in Waco area of Texas. (p. 582).

SUGAR-BEET ROOT MAGGOT damage extensive in Boulder and Weld Counties, Colorado. (p. 583). COLORADO POTATO BEETLE oviposition unusually heavy on Eastern Shore of Virginia; population heaviest in several years in Power County, Idaho. POTATO APHID troublesome in many tomato fields throughout New Jersey. MEXICAN BEAN BEETLE heavy on beans in southern Delaware. (pp. 584, 585).

CODLING MOTH larvae damaged apples in El Paso County, Texas; egg hatch should be heavy through June in western New York. (p. 587). Major APPLE MAGGOT emergence in progress and EUROPEAN RED MITE populations at critical levels in Vincennes, Indiana. (pp. 588, 589). FOREST TENT CATERPILLAR and FRUIT-TREE LEAF ROLLER defoliation widespread on hardwoods in north-central Lower Michigan. FALL CANKERWORM defoliated hardwoods on 800-1,000 acres in Shakey Lake Park, Michigan; damage heavy on elm in Portland, Maine. (p. 592).

HORN FLY heavy on cattle in Alabama, Oklahoma, and South Dakota; increasing rapidly in McNairy County, Tennessee. (p. 596). GRASSHOPPERS heavy on rangeland in De Baca County, New Mexico. (p. 598). GRASS BUGS almost completely destroyed over 5,000 acres of grass range in south-central, Utah. (p. 599).

Detection

New State records include an APHID in Missouri (p. 577), a WEEVIL in North Carolina (p. 586), a PLANT BUG in Delaware (p. 594), and a DEER FLY in South Carolina (p. 596).

For new county records see page 586.

Special Report

Distribution of Face Fly (map). (p. 602).

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WEATHER OF THE WEEK ENDING JUNE 24

HIGHLIGHTS: The West warmed during the week. The East was mostly cool but became hot and humid over the weekend. Widespread thunderstorm activity in the sultry gulf air provided most of the rain east of the Rockies.

PRECIPITATION: Frequent showers, mostly light during the week but heavier over the weekend, supplied most of the precipitation from the Washington and Oregon coast to the Continental Divide. No rain or only light sprinkles fell from California to the western slopes of the Rockies in Colorado and New Mexico. Showers fell almost daily over the northern Great Plains. Amounts ranged widely from about 0.50 inch to 2.50 inches generally but with a few weekly totals exceeding 4.00 inches. Many of the thundershowers were accompanied by damaging wind and hail. Wind and hail caused extensive damage in South Dakota on Thursday. Parts of the central Great Plains received no rain or only spotty thundershowers. The weekend brought widely scattered thundershowers to southern Iowa but more general rains in the north. A few showers fell in Oklahoma but for most of that State, last week was the driest week in five months. The "dry belt" extended southwestward across the Trans-Pecos in Texas to the Rio Grande. Variable cloudiness prevailed over the Southland, with thunderstorms in the sultry gulf air that flowed northward. Precipitation ranged widely from light sprinkles to more than 2 inches. However, tropical storm Candy dumped up to more than 8 inches in the Galveston, Texas, area over the weekend. The Southeast received most of their rain late in the week and over the weekend but parts of the Northeast received their heaviest showers from Monday to Wednesday. Last week was the 6th consecutive week with moderate to heavy showers at some New England localities but the 8th week with only light rains in northern Maine.

TEMPERATURE: The West warmed during the week and averaged above normal, reversing the trend of a week ago. Temperatures at Phoenix, Arizona, soared to 108° or higher on every afternoon and reached 115° on 4 consecutive days, Wednesday through Saturday. Most of the Southwest averaged 6° to 10° warmer than normal. The cen-
Weather of the Week continued on page 600.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Chorizagrotis auxiliaris) - WYOMING - Adults heavy in Niobrara, Crook, Weston, Campbell, Converse, and Johnson Counties. (Parshall).

ARMYWORM (Pseudaletia unipuncta) - VERMONT - Found on corn at 2 locations in State. (MacCollom). CONNECTICUT - Destroyed 85 percent of forage corn planting in North Branford; numbers noted in 3 other fields in area. Larvae less than half grown. Damage evident in New Haven and Windham Counties. (Savos, June 18). VIRGINIA - Medium and spotted on corn throughout Russell County. (Allen, Abbott, June 10). Moderate to severe in 100 acres of sod-planted corn; damage 40 percent. (Allen, Scyphers). OHIO - Larvae averaged one plus per plant in cornfield in Wayne County; foliage damage extensive. (Barry). MICHIGAN - Sharp decrease in flights indicated in blacklight traps at Sodus past period. (Janes, June 17). NEBRASKA - Averaged less than 1 per square yard in wheat in Lancaster, Cass, and Sarpy Counties. Mostly third and fourth instars ranged 4-13 (average 5) per square yard in Saunders County. (Keith, Rai).

ASTER LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - Light in all areas except northwest district. Counts per 100 sweeps averaged 204 on small grains and flax and 800 on barley in northwest district. Apparently migrated into district last week. (Minn. Ins. Rpt.). WISCONSIN - Increased to 10-12 per 100 sweeps in Montello area; increase not significant. (Wis. Ins. Sur.). MICHIGAN - Moderate in muck areas; controls recommended. Disease transmission very high during third and fourth weeks of June past 2 years; expected to be less infectious this year. (Bath, June 17).

BEEF LEAFHOPPER (Circulifer tenellus) - COLORADO - Increased on sugarbeets June 12-20; ranged 2-3 per square foot in several fields at Loma, Fruita, Mack, and Clifton. Controls needed in late-starting 4 to 8-leaf sugarbeets. (Bulla). ARIZONA - Averaged 5 per plant in Cochise County. (Ariz. Coop. Sur.).

CORN EARWORM (Heliothis zea) - DELAWARE - Few adults collected in blacklight trap in Sussex County during first half of June. (Burbutis). VIRGINIA - Single larva feeding on emerging sweet corn tassel in Westmoreland County. (Allen, Ptucha). MISSOURI - Damaged commercial tomato plantings in southeast area; controls in progress. (Jones). OKLAHOMA - Ranged 1-3 per plant on corn in Tillman and Jackson Counties; 1-5 per 10 sweeps in alfalfa in southwest area. (Okla. Coop. Sur.). ARIZONA - Light in 10 acres of corn at Safford, Graham County. (Pearson).

CORN LEAF APHID (Rhopalosiphum maidis) - NEVADA - Medium to heavy on barley in Lovelock area, Pershing County. Generally heaviest in Upper Valley; spotted and heavy in Lower Valley. Controls applied. (Martinelli). ARIZONA - Ranged 20-30 per plant in milo at Elfrida, Cochise County; moderate on 45 acres of grain sorghum at Safford, Graham County. (Ariz. Coop. Sur.). TEXAS - Light on grain sorghum in Burleson, Lee, Washington, Austin, and Guadalupe Counties. (Green, New). OKLAHOMA - Medium to heavy in sorghum in northeast area. (Okla. Coop. Sur.). NEBRASKA - Light, 0-9 (average less than 1) per plant, on 2 sorghum fields in Lancaster County. (Keith, Rai). ILLINOIS - Occasionally on corn in northwest, west, and central districts. (Ill. Ins. Rpt.).

GREENBUG (Schizaphis graminum) - NEBRASKA - Ranged 5-45 (average 25) per plant on sorghum 6 inches tall; on 90+ percent of plant. (Keith, Rai). VIRGINIA - Five adults collected in oatfield in Nansemond County April 30, 1968. Det. by L.M. Russell. This is first report of species in county. (Allen).

PAINTED LADY (Vanessa cardui) - OHIO - Larvae abundant on Canada thistle in oatfields in Williams County June 8 and 13; some on oats in Mercer County. (Rose). MISSOURI - Larvae feeding on soybeans in northeast area; ranged from one per 8 row feet to one per foot. (Thomas). NEBRASKA - Most larvae left thistle and cocklebur; many remain on nettles. (Keith, Rai). COLORADO - Larvae on beans where Canada thistle borders on fields. Damage very light and noneconomic. (Colo. Ins. Sur.). OREGON - Second instars and older larvae very numerous, 2+ per

plant, on small Canada thistle in meadow near Umapine, Umatilla County, June 12. (Westcott, Goeden). Mostly last instars currently very abundant on Canada thistle at Monmouth area, Polk County; more abundant than in 1967. Parasitism less in 1968. (McCorkle).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Increase begun in Eastern Shore areas; not significant on alfalfa in central area. Ranged 6-10 per 10 sweeps on 10 acres of second-growth alfalfa near Cambridge, Dorchester County. (U. Md., Ent. Dept.). OHIO - May increase soon on second-growth alfalfa and cause damage. (Rose). MICHIGAN - Increasing on alfalfa in State. (Ruppel, June 17). INDIANA - Adults ranged from 6 per 10 sweeps to 11 per sweep (average 3 per sweep) on 6 to 14-inch second-growth alfalfa in southeast district and central third of State; nymphs ranged from 2 per 10 sweeps to 8 per sweep (average 2 per sweep). (Huber). ILLINOIS - Counts per 100 sweeps averaged 31 (light) on alfalfa and clover in west-southwest district and 155 in east district. (Ill. Ins. Rpt.). MISSOURI - Ranged 10-65 per 10 sweeps on alfalfa in east-central and southeast areas; some discoloration of plants in east-central area. (Munson). NEBRASKA - Ranged 7-27 per 10 sweeps in Dawson County. (Stevens).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Nymphs noted on Lycium at Fort Lupton, Platteville, and Gilcrest, Weld County. Adults 0-50 per 100 sweeps; eggs and nymphs 0-5 per leaf. Adults 0-20 per 100 sweeps on potatoes. (Johnson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - UTAH - Very light in Santa Clara and Washington area, Washington County. (Knowlton, June 11). NEW MEXICO - Averaged 60-70 per 30 trifoliolate leaves on Chaves County alfalfa. (Mathews). None in San Juan County. (Heninger). NEBRASKA - Ranged 0-11 per 20 sweeps on Dawson County alfalfa. (Stevens). ARKANSAS - Survey negative in Independence County. (Boyer, Barnes).

TOBACCO BUDWORM (Heliothis virescens) - SOUTH CAROLINA - Moderate on some tobacco in Florence, Clarendon, Marion, and Horry Counties. (Thomas, June 18).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Egg laying since June 10 at Geneva. First summer larvae June 14; 2 of 19 egg masses hatched June 17, others in black head stage. First-generation flight heaviest in recent years at Geneva; flight and eggs heaviest for June in 15 years in Hudson Valley. Moth emergence from stalks collected from ground about ended June 10; emergence (mostly females) from stalks above ground since fall 1967 decreased after June 10 in Hudson Valley. Moths decreased from peak of previous period in weed hedgerows at New Paltz. Total of 53 egg masses found on 45 of 100 plants in area by June 10; 5-10 percent of eggs hatched. Total of 65 moths collected in 50 sweeps from hedgerow adjacent to cornfield at Accord June 12; 40 egg masses found on 50 plants. Second instars common in sweet corn at Hurley June 15. (N.Y. Wkly. Rpt.). NEW JERSEY - First injury on sweet corn May 17. Hatch increasing throughout State. (Ins.-Dis. Newsltr.). DELAWARE - Adults averaged 5 per night in blacklight traps in Sussex County; larvae light in early corn in Kent and Sussex Counties June 14. Adults currently less than 1 per night in blacklight trap collections in Sussex County; mostly fourth and some fifth instars in early planted sweet corn. (Burbutis). MARYLAND - First larvae of season ranged 8-17 per 100 plants on 12 to 18-inch high corn in Queen Annes, Talbot, and Caroline Counties; adults 3 per night in blacklight trap at Centerville June 14. Adults currently 2 per night in blacklight trap at Centerville, Queen Annes County. Larvae 2-5 per 25 plants on 170 acres near Centerville. First and second instars infested 30 percent of 50 acres of advanced corn near Kingston, Somerset County. Very little injury to date on early whorl stage in Frederick County; damage 12 percent in field near Woodshaw, Frederick County. (U. Md., Ent. Dept.). VIRGINIA - Larvae infesting field and sweet corn in Caroline, Westmoreland, and King William Counties; damage primarily on 20-50 percent of tassel stage corn. (Amos, Rowell). Controls not necessary.

(Allen). SOUTH CAROLINA - First-generation larvae on corn in Pickens County. (Thomas, June 18). INDIANA - No egg masses in central, east-central, or southeast districts June 19; most corn less than 24 inches extended leaf. Second instars in light soil area of southwest Vigo County ranged 2-6 per plant on 62 percent of 38 to 42-inch corn and 1-3 per plant on 20 percent of 32 to 36-inch corn. Feeding light on 3-6 percent of 24 to 30-inch corn; no live larvae noted. Egg masses per 100 plants averaged 12 on 38 to 42-inch, 20 on 32 to 36-inch, and 8 on 24 to 30-inch plants. (Huber). ILLINOIS - Average per 100 plants by district: Northwest - egg masses 24, plants infested 14, larvae 17; west - egg masses 5, plants infested 5, larvae 0; west southwest - egg masses 5, plants infested 5, larvae 2; central - egg masses 6, plants infested 5, larvae 3; east - egg masses 11, plants infested 8, larvae 5. (Ill. Ins. Rpt.). WISCONSIN - Foliage damage by first instars ranged from less than 1 percent in Grant County to 10 percent in western Dane County. (Wis. Ins. Sur.). MINNESOTA - First moth emergence in southwest, southeast, central, and east-central districts. Overwintering larvae in southwest, southeast, central, west-central, and east-central districts. Percent pupation averaged as follows: Southwest 80; west-central 20; central 90; and east-central 95. (Minn. Ins. Rpt.). IOWA - Emergence 100 percent at Ankeny, Polk County, June 20. (Showers). MISSOURI - Infestations 20-100 percent in early planted corn in southeast area. Third and later instars in most southern counties; many entered stalks. First to third instars infested 0-56 percent of plants in northeast and east-central areas. Moth emergence complete in north. (Munson). NEBRASKA - First brood (light) in areas surveyed. Damage ranged 0-10 percent in Lancaster, Cass, Sarpy, Douglas, Washington, Dodge, Saunders, and Dixon Counties. (Keith, Rai). KANSAS - Leaf damage on 14-29 percent of plants in Jefferson County, less than 10 percent in Wyandotte County. Mostly first instars. (Brooks). Leaf damage on 5-10 percent of plants in Riley County. (Simpson).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Larvae averaged 1 per plant in 40 acres of corn in Stewart District, Cochise County. (Kozloski).

STALK BORER (Papaipema nebris) - INDIANA - Early and middle instars infested up to 15 percent of 1-6 border rows deep in less than 5 percent of central area corn. (Huber, Matthew). WISCONSIN - Few small larvae in late corn in western Iowa County. (Wis. Ins. Sur.). MINNESOTA - Damage light, less than 1 percent, on corn margin rows. (Minn. Ins. Rpt.). NEBRASKA - Damage light, less than 1 percent, to border rows of corn in Lancaster, Cass, Sarpy, Douglas, Washington, Dodge, and Saunders Counties. Found in potato vines and bromegrass heads in Lancaster County. (Keith, Rai).

BLACK CUTWORM (Agrotis ipsilon) - WISCONSIN - Some damage to corn in Outagamie and Marathon Counties; damage insignificant to light in most areas. Some heavy damage in Marathon County. (Wis. Ins. Sur.). OHIO - Larvae tunneled into plants in cornfield in Marion County; up to 5 percent of plants dying. Corn growth 12 inches. (Parrott, Blair).

CORN ROOTWORMS (Diabrotica spp.) - MINNESOTA - First hatch of season in Hennepin and Wright Counties. (Minn. Ins. Rpt.). IOWA - Few small larvae noted. (Peters). NEBRASKA - Hatch June 12 in Saunders County; 10-20 percent by June 17. D. longicornis and D. virgifera first and second instars; few third instars. D. undecimpunctata howardi present. (Munson, Lawson). KANSAS - Few D. virgifera in most cornfields in Jefferson, Wyandotte, and Johnson Counties; heavier than usual. (Brooks). WISCONSIN - Corn samples for D. longicornis larvae taken at 13 sites June 14. Total of 11 larvae collected from samples at 5 sites, negative in other samples. (Wis. Ins. Sur.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - MICHIGAN - First of season 3 per 10 sweeps in 2 Ingham County cornfields. (Newman, June 17). KANSAS - Averaged one per plant in Jefferson, Wyandotte, and Johnson Counties; heavier than usual. (Brooks).

CORN FLEA BEETLES (Chaetocnema spp.) - MARYLAND - C. pulicaria damage light in Frederick and Washington Counties; light to moderate on 15 percent of 40-acre

field near Frederick June 14. Damage currently heavy on field corn near Creagers-town. (U. Md., Ent. Dept.). DELAWARE - Chaetocnema pulicaria common on corn in many areas. (Burbutis, June 14). ARIZONA - C. ectypa averaged 100 per 100 sweeps in Maricopa County corn and sorghum. (Ariz. Coop. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Total of 8 taken in 34 fields in Milam, Bell, and Robertson Counties; 5 taken in 10 fields in Burleson and Lee Counties. (Thomas, Green).

CORN BLOTCH LEAF MINER (Agromyza parvicornis) - MARYLAND - Damaged 50 acres of corn 3.5 feet high near Kingston, Somerset County. Numbers heavy; blotching on 80 percent of leaves in stand. Adults 5-10 per sweep. (U. Md., Ent. Dept.).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Averaged 2 per plant in cornfield in Tillman County. (Okla. Coop. Sur.). TEXAS - Very light, 2-3 per stalk, in 20 Waller County fields. Very light in Grimes County. (Parker).

FALSE CHINCH BUGS (Nysius spp.) - ARIZONA - Averaged 2 per plant on 60 acres of milo at Elfrida, Cochise County. (Ariz. Coop. Sur.).

A FLEAHOPPER (Spanogonicus albofasciatus) - ARIZONA - Averaged 40 per 100 sweeps in sorghum at Casa Grande, Pinal County, and 2 per plant on 40 acres of corn in Steward District, Cochise County. (Ariz. Coop. Sur.).

MAIZE BILLBUG (Sphenophorus maidis) - MARYLAND - Damage heavy to 40 percent of 10-acre cornfield near Quantico, Wicomico County; replanting necessary. (U. Md., Ent. Dept.).

DUSKY SAP BEETLE (Carpophilus lugubris) - MARYLAND - First adults of season feeding in corn whorls infested with Ostrinia nubilalis. Adults 1-2 per isolated plant in 50 acres of corn near Kingston, Somerset County. (U. Md., Ent. Dept.).

WHITE GRUBS - WYOMING - Ranged 2-29 (average 14) per plant around base of plants near Lusk, Niobrara County. (Burkhardt, Parshall).

GRASS THRIPS (Anaphothrips obscurus) - DELAWARE - Very heavy on corn in most areas of State; damage very heavy on corn in Kent and Sussex Counties. (Burbutis, June 14).

SLUGS - VIRGINIA - Destroying sod-planted field corn in Pulaski County. (Allen, Scyphers). MARYLAND - Damaged many fields in Baltimore, Frederick, and Carroll Counties. Damaged 10 percent of field at Westminster, Carroll County. Injured 100 percent of stand in fields near Thurmont, Frederick County. Some controls required. (U. Md., Ent. Dept.). OHIO - Deroceras sp. damage continues in field corn in Wayne County June 15-19. Counts per sweep averaged 2 in 5-acre field and ranged 10-13 in another field. Corn growth 4-8 inches June 19. (Glass). Damaging in Geauga (Miller) and Hamilton Counties (Rose).

GARDEN SYMPHYLAN (Scutigereella immaculata) - OREGON - Destroyed young cornfield in Polk County. (Capizzi, June 15).

SMALL GRAINS

SAY STINK BUG (Pitiedia sayi) - UTAH - Moderate on grain field margins west of Kanosh, Millard County; some moving to wheat and barley at Oak City and half-grown nymphs present to west of Kanosh. (Knowlton, June 11). Very numerous on tansy mustard in Delta and Sutherland area. (Davis, Knowlton, June 11). COLORADO - Damaged wheat, barley, and other grains approaching dough stage in Fruita and Loma areas of Mesa County. Adults up to 2-4 per head on some fields; 15-25 per sweep in heavily infested fields. Controls used in ripening grain fields. (Colo. Ins. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WISCONSIN - Light, less than 1 per sweep, in most oatfields; up to 50 percent alates. Heavy in oats in Door County. (Wis. Ins. Sur.).

WHEAT STEM MAGGOT (Meromyza americana) - SOUTH DAKOTA - White heads common in 80-acre field of winter wheat near Wagner, Charles Mix County; infestation under one percent. (Balsbaugh, Alleman).

EUROPEAN WHEAT STEM SAWFLY (Cephus pygmaeus) - MARYLAND - Collected on wheat at Roe, Queen Annes County, May 22, 1968, by J.L. Hellman. Det. by D.R. Smith. This is a new county record. (U. Md., Ent. Dept.).

TURF, PASTURES, RANGELAND

WESTERN TUSSOCK MOTH (Hemerocampa vetusta) - NEVADA - Generally light on bitterbrush (Purshia tridentata) in Jacks Valley area, Douglas County; Carson City, Ormsby County; and Washoe Valley, Washoe County. Spotted and heavy in Jacks Valley; light on western serviceberry (Amelanchier alnifolia) in southern Washoe Valley. (Heringer).

AN APHID (Iziphya flabella) - MISSOURI - Collected from sedge May 5, 1968, by W.S. Craig. This is a new State record. (Munson).

A SCUTELLERID BUG (Eurygaster alternata) - CALIFORNIA - Nymphs and adults light to moderate on 50 acres of rangeland in Avila Beach, San Luis Obispo County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MAINE - Generally second and some third instars increasing in alfalfa in Gorham and Westbrook; development enhanced by favorable weather. (Boulanger, June 18). NEW HAMPSHIRE - Damage continues to increase in alfalfa; economic primarily in southern area. Damage moderate to regrowth in some fields. Tip damage 30-50 percent in Suncook and Concord. Larvae 65-126 per 10 sweeps at Concord June 13; many last instars and first cocoon of season noted. (Sutherland). VERMONT - Very few freshly laid eggs noted. All instars found in Chittenden, Grand Isle County, areas; damage severe in cut fields. (MacCollom). CONNECTICUT - Larvae 1,000+ and adults 15 per 100 sweeps June 18 at Storrs; pupation begun. Terminal damage 90+ percent. (Savos). NEW YORK - First pupae in Ithaca area June 12; mostly mid to late instars in area. Damage noted as far north as Niagara, Monroe, southern Jefferson, and Lewis Counties. Pupae increasing in Wayne County; damage 50+ percent in most alfalfa up to Lake Ontario. (N.Y. Wkly. Rpt.). DELAWARE - Larvae light and damage very light on second-growth alfalfa in New Castle and Kent Counties. (Burbutis, June 14). MARYLAND - Adults still emerging on Eastern Shore. Adults 1-2 per 10 sweeps on 10 acres near Cambridge, Dorchester County. Adults 1-18 and larvae 5-130 per 10 sweeps on 9 Frederick County farms. (U. Md., Ent. Dept.). OHIO - Harvest of first-growth alfalfa for hay 45 percent complete June 10; alfalfa and clover-timothy mixture in good condition. (Tucker). Stubble treatments on second-growth continues major concern in State. Stubble sprays applied in most fields in Medina and Wayne Counties; much damage to untreated new growth in these counties and in Ashland County. Damage severe in some uncut fields. (Thoburn, Glass). Larvae decreased to 2-4 per sweep in second-growth alfalfa in Pickaway and Ross Counties. (Rose). MICHIGAN - Summer adults evident on alfalfa in State. (Ruppel, Gomulinski, June 14). Adults 2 per 100 sweeps on 2 farms in Ingham County; present in Eaton County. Averaged 2 per 200 sweeps on margins. Noted in one field during survey of Kent, Ionia, and Clinton Counties. Kent County is a new county record. (Janes, June 17). Population 20 percent in cocoon, 70 percent final instars, and 10 percent first and second instars in Monroe and Lenawee Counties. Adults 40 percent from 1968 brood. Larvae ranged from 300 in Hillsdale and Branch Counties to 1,350-1,850 per 200 sweeps in Monroe, Lenawee, and St. Joseph Counties. Pupae 60

percent, larvae 20 percent, and adults 20 percent in 150 cocoons. (Newman, June 20). INDIANA - Larvae 1-13 (average 3) per sweep on second-growth alfalfa throughout central district. Leaf feeding light on 10-20 percent of plants. Adults 0-20 (average 4) per 10 sweeps on second-growth alfalfa in central area. (Huber). MISSOURI - All instars 0-12 per 10 sweeps on alfalfa in east-central area; adults in weedy vegetation outside fields. (Munson). ARKANSAS - Survey negative in Independence County. Heavy in area earlier in year. (Boyer, Barnes). NEBRASKA - Larvae decreasing to 0-48 per 100 sweeps in 10 fields in Dawson County. (Stevens). SOUTH DAKOTA - Damaged much alfalfa in southern Butte, Lawrence, and Meade Counties. Increased sharply; up to 2,200 larvae and 40 adults per 100 sweeps on 10 to 18-inch high alfalfa. First cutting of alfalfa underway in Lawrence County. Some controls applied. Damage will increase markedly in uncut fields within 10 days. (Jones, Walstrom). NORTH DAKOTA - First through third instars heavy, 30-5,640 (average 1,077) per 100 sweeps, in irrigated alfalfa in Yellowstone and Missouri River Valleys, McKenzie County. Adults up to 150 (average 40) per 100 sweeps; terminal damage up to 100 (average 64) percent. Up to 5 (average 1.3) percent of foliage eaten. Controls will be necessary where first crop used for seed production. Larvae ranged 10-200 (average 70) and adults up to 2 (average less than 1) per 100 sweeps in Ft. Clark area in Mercer and Oliver Counties; less than one percent of foliage eaten. Late bud to early bloom alfalfa 12-30 inches high. First cutting underway. Larvae 1 per 300 sweeps in alfalfa in White Earth River area, Mountrail County, for new county record. (Brandvik).

WYOMING - Activity increased on north-central and northeast area alfalfa. Averages per 100 sweeps by county: Converse - 218 larvae, 18 adults; Crook - 850 larvae, 49 adults; Niobrara - 80 larvae, 3 adults; Weston - 500 larvae, 30 adults; Campbell - 1,500 larvae, 27 adults; Johnson - 1,500 larvae, 114 adults. Damage moderate in Campbell and Johnson Counties. Alfalfa in bud stage. (Parshall). COLORADO - High in most uncut fields in northeastern area; larvae 1,000-3,000 and adults 10-70 per 100 sweeps in many fields in Weld, Larimer, and Boulder Counties. Larvae 10-60 and adults 10-20 per 100 sweeps in Arkansas Valley. (Johnson, Rothman). NEW MEXICO - Heavy on San Juan County alfalfa; adults 25-66 and larvae 400-700 per 25 sweeps. Leaves and tips badly damaged. Widespread throughout San Juan County. Some controls applied. (Heninger). UTAH - Damage, according to observers, worst in more than 20 years in Delta and Sutherland area of Millard County June 11. Larvae heavy and adults numerous in fields. Damage severe at Lake Point, Tooele County. Larval damage moderate to severe to first-crop alfalfa in St. George and Santa Clara area, Washington County; damage evident in Kanosh area. Damage unusually severe June 20 on unsprayed alfalfa at Abraham and Hinckley, Millard County. Some seed fields sprayed 3 times. (Knowlton). NEVADA - Larvae peaked June 8-14 in Fallon, Churchill County; Mason Valley, Lyon County; and Lovelock, Pershing County. Reaching peak in Douglas County. Newly emerged adults in Churchill, Lyon, and Pershing Counties; first and second instars numerous in Douglas County. (Arnett). IDAHO - Controls applied to alfalfa field south of Mountain Home, Elmore County, June 14; larval damage on 85 percent of terminal buds June 17. (Edwards, Portman). Larval damage on all plant terminals in 4 Lincoln County alfalfa fields. Pupae expected within week. Less than 10 percent small and early instars. (Hopkins, Portman). Larval damage general on 75+ percent of terminals throughout southern area. Harvest underway. General population expected by hay removal time. (Portman). OREGON - Larvae up to 10 per sweep in many fields in Klamath County; damage extensive. (Jendrzewski, June 15). Larvae 5 per sweep June 13 in unsprayed field near Adrian, Malheur County; 2 adults taken. Damage light in area. First and later instars currently averaged 0.05-0.15 per sweep in new growth and 0.30-0.50 per sweep in uncut field; 2 adults in uncut field. Damage negligible at Sauvie, Multnomah County. This is a new county record. (Westcott, Goeden).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Adults and larvae collected in white and hop clover in Crawford, Iron, Stoddard, and Washington Counties. These are new county records. (Munson).

CLOVER LEAF WEEVIL (Hypera punctata) - IOWA - Adult damage severe to 51-acre alfalfa and clover field; adults up to 28 per square foot. (Iowa Ins. Sur.).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - MISSOURI - Adults collected from white clover at Kahoka, Clark County, June 16, 1968, by L.H. Barrows. This is a new county record. (Munson).

PEA APHID (Acyrtosiphon pisum) - WASHINGTON - Light, 50+ per sweep, on alfalfa in Touchet and Lowden area, Walla Walla County. (Featherston, June 14). OREGON - Averaged 20-30 per sweep in unsprayed alfalfa field near Adrian, Malheur County; predators one per sweep June 13. (Westcott, Goeden). UTAH - Light in alfalfa in Delta, Sutherland, and Oak City areas of Millard County. Counts per 10 sweeps ranged 1-4 in Santa Clara and St. George area, Washington County, and 2-7 in Kanosh and Delta area, Millard County. (Knowlton, June 11). ARIZONA - Counts per 100 sweeps in alfalfa averaged 600 at San Simon, Cochise County, and 200 in Litchfield area, Maricopa County. Moderate in Safford area, Graham County. (Ariz. Coop. Sur.). COLORADO - Heavy on uncut alfalfa in northeastern area. Counts per 100 sweeps ranged 5,000-10,000 in Boulder, Larimer, and Weld Counties and 250-1,000 in Arkansas Valley. (Johnson). WYOMING - Adults and nymphs per 100 sweeps ranged 10-200 in Niobrara, Weston, Crook, and Campbell Counties; 200-1,200 in Converse County; 1,000-9,000 in Johnson County. (Parshall). NORTH DAKOTA - Counts per 100 sweeps in alfalfa by county: McKenzie, 2,000-8,000 (average 4,300); Oliver and Mercer, 250-1,200 (average 700); Burleigh and Morton 120-2,500 (average 1,000). Lady beetles up to 90 (average 36), green lacewings 30 per 100 sweeps. (Brandvik). NEBRASKA - Ranged 1-63 per 20 sweeps in Dawson County. (Stevens). OKLAHOMA - Ranged 0-6 per 100 sweeps in 10 alfalfa fields in Tillman, Jackson, and Harmon Counties. (Okla. Coop. Sur.). WISCONSIN - Variable; increasing to 100+ per sweep in regrowth alfalfa in southwestern counties. Averaged 5 per plant on individual plants. Generally much lighter on first-growth alfalfa in southwest and central counties; lady beetles prevalent in many fields. (Wis. Ins. Sur.). INDIANA - Light, 5-20 per sweep, on central area alfalfa. (Huber).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Adults collected in Ste. Genevieve County for new county record. (Munson). WISCONSIN - Mostly adults in alfalfa in southwest and southern areas; up to 40 per sweep in few fields. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Ranged 80-90 per 100 sweeps in alfalfa at Safford, Graham County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - UTAH - Counts per 10 sweeps ranged 1-2 in alfalfa in Millard County and 0-1 in Washington County. (Knowlton, June 11). WYOMING - Larvae averaged 5 per 100 sweeps on Crook and Weston County alfalfa. (Parshall). COLORADO - Larvae increased to 10-30 per 100 sweeps in eastern area. (Johnson). NEW MEXICO - Larvae 10-20 per 25 sweeps on San Juan County alfalfa. (Heninger). OKLAHOMA - Ranged 1-5 per 10 sweeps in alfalfa in Kiowa, Jackson, and Tillman Counties. (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - First adult of season collected in blacklight trap in Sussex County June 7. (Burbutis). MARYLAND - Larvae 6-10 per 10 sweeps in 10 acres of second-growth alfalfa near Cambridge, Dorchester County. (U. Md., Ent. Dept.). INDIANA - Early instars 1-10 and late instars 0-5 per 10 sweeps on alfalfa in central area. Parasite eggs 2-6 per larva on 75 percent of late instars; none on early instars. (Huber). OKLAHOMA - Ranged 8-25 per 10 sweeps in alfalfa in southwest area; heavy in northeast area. (Okla. Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae 15 per 100 sweeps in 80-acre alfalfa field in Elfrida area, Cochise County. (Ariz. Coop. Sur.). NEW MEXICO - Larvae 1-5 per 25 sweeps on alfalfa in Roswell, Chaves County. (Mathews).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - NEVADA - Small larvae, especially this species, and Ceramica picta numerous in alfalfa in Yerington, Lyon County, and Lovelock, Pershing County. (Arnett, Martinelli).

CUTWORMS - WISCONSIN - Total of 165 Spaelotis clandestina, 33 Euxoa scandens, 45 Lacinipolia renigera, and 125 Orthodes cynica and Protorthodes oviduca complex determined from larvae previously collected in damaged alfalfa in central sands area. (Wis. Ins. Sur.). See CEIR 18(20):417, 18(21):439, 18(25):547. (PPC).

ALFALFA WEBWORM (Loxostege commixtalis) - OKLAHOMA - Averaged 4 per 10 sweeps in alfalfa field in Harmon County. (Okla. Coop. Sur.).

A PSYCHID MOTH (Apterona crenulella) - CALIFORNIA - Larvae moderate on alfalfa plantings in Alturas, Fort Bidwell, and Tulelake, Modoc County. Normally non-economic in limited infestation of northern area. (Cal. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - NEVADA - Nymphs and adults averaged 9 per sweep in alfalfa seed fields in Lovelock, Pershing County, and 12 per sweep in Jungo, Humboldt County. (Adams, Martinelli). UTAH - Adults 16-34 and nymphs 12-53 per 10 sweeps in alfalfa in St. George and Santa Clara area, Washington County; mostly L. elisus adults 27-38 and nymphs 12-23 per 10 sweeps in alfalfa at Oak City, Millard County, June 11. Ranged 3-38 per 10 sweeps on alfalfa at Abraham and South Deseret, Millard County, June 20. (Knowlton). WYOMING - Adults and nymphs 10-55 per 100 sweeps on alfalfa in Converse, Niobrara, Weston, Crook, Campbell, and Johnson Counties. (Parshall). NEW MEXICO - Increasing to 15-70 per 25 sweeps in alfalfa in State. (Mathews). ARIZONA - Counts per 100 sweeps on alfalfa by county: Cochise, 300 at San Simon and 250 at Elfrida; Graham, 210 at Safford; Pinal, 140 at Casa Grande. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 6-20 per 10 sweeps in 10 alfalfa fields in Tillman, Jackson, and Harmon Counties. (Okla. Coop. Sur.). INDIANA - Adults ranged from 3 per 5 sweeps to 2 per sweep and nymphs ranged 1-4 per 5 sweeps on second-growth alfalfa in central districts. (Huber).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Primarily adults prevalent in most alfalfa; few nymphs. (Wis. Ins. Sur.).

GARDEN FLEAHOPPER (Halticus bracteatus) - MISSOURI - Heavy, 80-200 per 10 sweeps, in alfalfa field in Ste. Genevieve County. (Munson).

SAY STINK BUG (Pitiedia sayi) - UTAH - Moderate on mustards at Oak City and on alfalfa west of Kanosh, Millard County; some moving to wheat and barley at Oak City and half-grown nymphs present west of Kanosh. (Knowlton, June 11). Very numerous on Sophia sp. in Delta and Sutherland area. (Davis, Knowlton, June 11). Ranged 1-7 per 10 sweeps on alfalfa in Deseret, Oasis, and Abraham, Millard County. More numerous on Sophia mustards at Oak City, Millard County. (Knowlton).

THRIPS - MISSOURI - Heavy, 1-8 per leaf, in alfalfa in southeast and south-central areas. (Munson). NEW MEXICO - Generally light to medium on alfalfa in all areas. (N.M. Coop. Rpt.). UTAH - Very numerous June 11 in alfalfa in Delta and Sutherland area, Millard County (Davis, Knowlton), and in St. George and Washington, Washington County (Knowlton, June 11). ARIZONA - Frankliniella spp. averaged 600 per 100 sweeps on alfalfa in Elfrida, Cochise County; heavy in all fields at Safford, Graham County. (Ariz. Coop. Sur.).

SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adult damage light to 10 percent in 20-acre soybean field near Preston, Caroline County; damage generally light on 1-10 percent of soybeans throughout Queen Annes County June 14. Damage generally light as of June 24. Injury less than 5 percent on 20 acres on Kent Island, less than 1 percent on 25 acres at Easton, and 10 percent (light) on 30-acre planting near Edgemere. (U. Md., Ent. Dept.). ILLINOIS - Light in State. Infestations averaged 16 percent in west district and 1 percent in east district. (Ill. Ins. Rpt.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Damage light, less than 5 percent, on 50 acres near Davidsonville, Anne Arundel County. (U. Md., Ent. Dept.). VIRGINIA - Light to heavy; heaviest in earlier planted soybeans. Adults ranged 1-20 per row foot. Controls necessary in few heavily infested fields. No larvae or egg masses noted in Westmoreland County. (Ptucha, June 14). One egg mass and 3 small larvae detected in Westmoreland County. (Allen, Ptucha). More prevalent in 1968 than in several years in many gardens in Fluvanna County. (Watts). More numerous than usual this year on Eastern Shore. Damaged beans and soybeans. (Hofmaster). Overwintered adults heavy in soybean-producing counties of State; seedlings damaged. (Rowell). SOUTH CAROLINA - Larvae in many fields; very few adults observed in Dillon and Chesterfield Counties. (Thomas, June 18).

A WIREWORM (Limoni sp.) - INDIANA - Larvae destroyed 2-25 percent of seedlings in 200-acre field in Jasper County. (Lehker).

LYGUS BUGS (Lygus spp.) - ARIZONA - Averaged 3 per plant in Bowie, Cochise County. (Ariz. Coop. Sur.).

THRIPS - ARKANSAS - Banded thrips most numerous species in soybeans; noneconomic. (Boyer, Barnes). DELAWARE - Sericothrips variabilis on young soybean foliage in many areas. (Burbutis).

PEANUTS

TOBACCO THRIPS (Frankliniella fusca) - ALABAMA - Damage by this and other species continues heavy in untreated fields in southeast area, especially in Crenshaw and Bullock Counties. (Handley et al.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Weevils found in 8 of 21 untreated fields and in 3 of 26 treated fields in McLennan and Falls Counties. Averaged 20 (maximum 156) per acre in untreated fields and 8 (maximum 82) in treated fields. Overall average of 16 compares with 103 during same period in 1967. Percent punctured squares ranged 0-6 (average 0.9) in 8 treated fields and 0-18 (average 6.2) in 5 untreated fields. No weevils collected on flight screens. One weevil taken in sex attractant test; total to date 904. (Cowan et al.). See page 598 for High Plains and El Paso areas. OKLAHOMA - Weevils per 100 row feet averaged 4 in squaring field in Jefferson County and one in 6-leaf cotton in Jackson County field. Counts per 200 row feet averaged 3 in margins and 2 in interior of 8-leaf cotton field. Light in Marshall County. Negative in Tillman, Cotton, Harmon, Greer, Kiowa, Grady, and Washita Counties. Nearly 80-85 percent of cotton in 2 to 4-leaf stage throughout southwest counties. (Okla. Coop. Sur.). ARKANSAS - Overwintered weevils found in 13 of 2,370 fields surveyed. (Boyer, Barnes). LOUISIANA - Total of 28 weevils taken from cages and 52 from winged traps in sex attractant test in Madison Parish; 25 recovered from cotton plants. Males comprised 39.1 percent of collections from winged traps and 73.9 percent from cotton plants. Total weevils to date 2,383. Weevils averaged 50 per acre in 2 fields and 65 per acre in one field of 57 fields inspected. Punctured squares found in 29 of 57 fields. (Cleveland et al., June 20). MISSISSIPPI - Light and scattered in areas checked. First-generation egg punctures in some fields. Infestations ranged 2-3 percent in fields checked in south delta area. (Dinkins). Percent punctured squares averaged 2, 0.5, and 1 in 3 of 5 fields in delta counties; no weevils in terminals in 33 fields. (Pfrimmer et al.). ALABAMA - Overwintered weevils generally heavy throughout southern and central areas. Cotton fully fruiting in most fields from southern State line to Greene, Autauga, and Lee Counties. Punctured squares heavy, 20-85 percent, in southern area; new generation in extreme southern area. Controls general in area. Heavy in counties just north of this area, up to and including Bibb and Shelby; cotton not fully fruiting. Overwintered weevils in some fields and egg laying begun in

few other fields in northern area. Live weevils light in these counties and much below that of 1967. Earliest "hatchout" of weevils in this area expected July 10-25 and will be light and spotted. (McQueen). TENNESSEE - More overwintered weevils found this period than at any other time this season in southern tier of counties. (Locke).

BOLLWORMS (Heliothis spp.) - TEXAS - Eggs averaged 0.2 and larvae 0.1 per 100 terminals in 52 fields in McLennan and Falls Counties; injured squares averaged 0.4 percent in 13 fields. Total of 41 larvae previously collected on phlox, Texas star, corn, and alfalfa determined H. zea; 4 larvae taken from Texas star determined H. virescens. Total of 289 H. zea and 12 H. virescens determined from wild hosts to date. One H. virescens and 11 H. zea larvae collected on cotton. (Cowan et al.). ARKANSAS - Eggs only in 133 fields, larvae only in 74 fields, and eggs and larvae in 22 fields of 2,370 fields surveyed. (Boyer, Barnes). LOUISIANA - Larvae ranged 50-715 (average 195) per acre in 13 of 57 fields in Madison Parish. Eggs found in 41 of 46 fields checked. Collected 4 H. zea in light trap; no H. virescens. (Cleveland et al., June 20). MISSISSIPPI - First to third instars of H. zea and H. virescens light to moderate, mostly in terminals, in 15 fields in Yazoo County; some damage to squares. Decrease expected due to beneficial insects and absence of eggs. (Dinkins). Injured squares found in all 5 fields surveyed in delta counties; averaged 1.8 (maximum 2.5) percent. Eggs averaged 1.62 (maximum 11.5) per 100 terminals in 24 of 33 fields checked. (Pfrimmer et al.). ALABAMA - Egg laying increased greatly throughout State past 10 days; larvae increased sharply in some fields. Larvae heaviest in fields in Perry and Colbert Counties where controls killed most beneficial insects. (Ivey, Counts). TENNESSEE - Few eggs found in early cotton. (Locke).

BEE T ARMYWORM (Spodoptera exigua) - NEW MEXICO - Controls necessary in many fields in Eddy, Chaves, Dona Ana, and Sierra Counties. (N.M. Coop. Rpt.). TEXAS - Decreasing in most areas of High Plains. Heavy in some areas of Gaines and Yoakum Counties; light in Floyd, Terry, and Dawson Counties; moderate but decreasing in Cochran County. (Almand, June 18).

STALK BORER (Papaipema nebris) - TENNESSEE - Damaged terminal buds in several fields. (Locke).

SALT-MARSH CATERPILLAR (Estigmene acrea) - LOUISIANA - Collected 11 in light trap in Madison Parish. (Cleveland et al., June 20).

TARNISHED PLANT BUG (Lygus lineolaris) - LOUISIANA - Ranged 2-27 (average 10.9) per 100 sweeps in 24 of 25 fields in Madison Parish. (Cleveland et al., June 20). MISSISSIPPI - Spotted in Yazoo County; moderate to heavy in some fields and light in others. Damage to squares in most fields; some treatments required. (Dinkins). Found in 20 of 33 fields in delta counties; averaged 1.4 (maximum 4) per 100 terminals. (Pfrimmer et al.). ALABAMA - Adults plentiful in most fields in Colbert, Shelby, and other northern counties; destroying very small to larger squares. More widespread and damaging in northern area. (McQueen). TENNESSEE - Heavier than usual for time of year in southern tier of counties. (Locke).

LYGUS BUGS (Lygus spp.) - ARIZONA - Heavy at Marana and Sahuarita, Pima County. (McLain). Averaged 40 per 100 sweeps at Casa Grande, Pinal County, and 3 per plant in Cochise County; light at Safford, Graham County. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - TEXAS - Widespread in Dawson, Gaines, and Yoakum Counties; light to medium in Martin County. (Almand, June 18). Increase continues; nymphs heavy in most fields in McLennan and Falls Counties. Averaged 10.8 (maximum 45) per 100 terminals in 34 treated fields and 34.9 (maximum 78.3) in 18 untreated fields. (Cowan et al.). ARIZONA - Averaged 70 per 100 sweeps in field at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

FLEAHOPPERS - LOUISIANA - Averaged 1.5 per 100 sweeps in 4 fields in Madison Parish. (Cleveland et al., June 20). OKLAHOMA - Ranged up to 10 (average 2-3) per 100 row feet in southwest area. (Okla. Coop. Sur.). ARIZONA - Spanogonicus albofasciatus counts per 100 sweeps averaged 60 at Casa Grande, Pinal County, and 10 on west side of Salt River Valley, Maricopa County. Averaged 4 per plant in San Simon and Bowie areas, Cochise County. (Ariz. Coop. Sur.).

FALSE CHINCH BUGS (Nysius spp.) - ARIZONA - Ranged 2-5 per plant in 120 acres at Bowie, Cochise County. (Ariz. Coop. Sur.).

APHIDS - TENNESSEE - Decreasing due to hot weather and predators. (Locke). TEXAS - Light in Cochran and Terry Counties. (Almand, June 18). Light in 24 of 30 fields in McLennan and Falls Counties. (Cowan et al.).

THRIPS - TEXAS - Light in Terry, Gaines, Yoakum, Cochran, and Lynn Counties; light to medium in Dawson and Martin Counties; light to heavy in Floyd County. (Almand, June 18). Light in 29 of 30 fields in McLennan and Falls Counties. (Cowan et al.). LOUISIANA - Ranged 0.02-0.87 (averaged 0.18) per plant in 9 late-planted fields in Madison Parish. (Cleveland et al., June 20). TENNESSEE - Damage light to moderate throughout western section; most cotton beyond stage for serious damage. (Johnson, June 14). MISSISSIPPI - Frankliniella spp. heavy on some seedling cotton throughout State; plant growth slowed. (Dinkins). ALABAMA - Adults and nymphs of F. fusca and other species heavily damaged untreated young cotton in much of northern area. Serious in 8-leaf cotton field in Colbert County; controls required. (McQueen).

SPIDER MITES - SOUTH CAROLINA - Controls repeated in Dillon County. First appeared at field edges in early May (Bauer, June 18); first noted in July in 1967 and usually in August in past years. (Witherspoon, Adams). MISSISSIPPI - Tetranychus spp. moderate to heavy in some areas of Washington, Coahoma, Leflore, and Holmes Counties. (Dinkins). ALABAMA - T. urticae increase continues during hot, dry weather in much of State; some controls applied. (McQueen).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Damage medium to heavy on 4 acres of newly set tobacco at Davidsonville, Anne Arundel County. (U. Md., Ent. Dept.). VIRGINIA - Decreased on tobacco in Pittsylvania County. (Dominick, June 14).

WIREWORMS - SOUTH CAROLINA - Infested several fields in Florence, Clarendon, Marion, and Horry Counties; numbers and damage heavy in one field. (Thomas, June 18).

CUTWORMS - MARYLAND - Feeding light on lower leaves of newly set tobacco near Davidsonville. (U. Md., Ent. Dept.).

SUGARBEETS

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - COLORADO - Larval damage extensive at Longmont, Boulder County, and Windsor, Weld County; infested 10-20 percent of many fields. (Johnson). NORTH DAKOTA - Pupation nearly complete. Most adults emerged and should peak in 7 days. Adults abundant in 1967 fields; moving into 1968 crop. (Dogger).

SPINACH LEAF MINER (Pegomya hyoscyami) - MICHIGAN - Mostly pupae in sugarbeets in Bay County; second generation should appear in 7-10 days. (Ruppel, June 17). COLORADO - Larvae infested 10-15 percent of plants in Weld, Boulder, and Larimer Counties. (Johnson).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Light in Mesa, Delta, and Montrose Counties. (Bulla).

MISCELLANEOUS FIELD CROPS

HOP LOOPER (Hypena humuli) - WASHINGTON - Damage 20-30 percent in basal hop foliage; infestations general in lower Yakima Valley, Benton County. (Klostermeyer, June 14).

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Larvae heavy on sunflowers near McGregor, McLennan County. (Teetes).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Light in potato plantings at Gorham. (Boulanger, June 18). NEW JERSEY - Still troublesome in many tomato fields statewide. (Ins.-Dis. Newsltr.). DELAWARE - Adults, eggs, and young larvae trace to common on some tomatoes in New Castle County. (Burbutis, June 14). Larvae heavy in commercial tomato plantings in Kent County. (McCreary, June 20). MARYLAND - Defoliation heavy on unsprayed tomatoes (2 acres) near Salisbury, Wicomico County. (U. Md., Ent. Dept.). VIRGINIA - Young to late larvae light to medium in 5-50 percent of plants; some controls applied in Westmoreland County. (Ptucha, June 14). Adults plentiful in 1968 where noneconomic past several years in Fluvanna County. (Watts). New-brood adults emerged and fed on Eastern Shore. Egg laying unusually heavy due to unseasonably low temperatures. Development 10-14 days ahead compared with 1967; extensive damage to potatoes could occur. Much injury could occur to tomatoes due to migration after potato harvest. (Hofmaster). COLORADO - Adults 1-5 and egg masses 2-3 per 100 row feet; all instars 0-10 per plant. (Johnson). IDAHO - Population heaviest in several years in southern Power County; adults and eggs on 75+ percent of plants. Lady beetles in all fields; destroyed eggs in some cases. (Portman). WASHINGTON - Eggs noted on potatoes in Pasco area of Benton and Franklin Counties; no damage. (Hokanson).

FLEA BEETLES - MAINE - Epitrix cucumeris abundant on potatoes at Gorham. Numbers light, damage light to moderate in Presque Isle. (Boulanger, June 18). VIRGINIA - First-brood adults of E. cucumeris present on Eastern Shore. (Hofmaster). MARYLAND - Chaetocnema confinis increasing in Wicomico County; 1-7 per plant in fields near Salisbury. (U. Md., Ent. Dept.).

TOMATO FRUITWORM (Heliothis zea) - ALABAMA - Larvae damaged 2 tomato fields (several hundred acres) on Chandler Mountain, St. Clair County. (Leeper). ARIZONA - Light in tomatoes in home gardens at Safford, Graham County; moderate in commercial tomatoes at Yuma, Yuma County. (Ariz. Coop. Sur.).

POTATO APHID (Macrosiphum euphorbiae) - NEW JERSEY - Troublesome in many tomato fields statewide. (Ins.-Dis. Newsltr.). DELAWARE - Colonies common on tomatoes in one area of New Castle County. (Burbutis, June 14). WISCONSIN - Moderate to heavy on tomatoes and potatoes in Dane County gardens. (Wis. Ins. Sur.).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Apteræ and alates on potatoes June 10 at Lynden, Whatcom County; more active than usual for period. (Landis, June 14). NEW JERSEY - Built up rapidly on potatoes near Lumberton, Burlington County; troublesome in many tomato fields statewide. (Ins.-Dis. Newsltr.). DELAWARE - Present on sweet peppers in Sussex County. (Burbutis, June 14).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Adults trace to common on snap beans in Sussex County; damage moderately heavy in some areas. (Burbutis, June 14). Heavy on commercial snap bean planting in southern area. (MacCreary, June 20). MARYLAND - Damage heavy to 90 percent of 20-acre planting near Vienna, Wicomico County; controls applied. Defoliation medium to heavy on 50 percent of plants in 10-acre field near Mardela Springs. (U. Md., Ent. Dept.). ALABAMA - Adults and larvae heavy on large pole bean acreage in Etowah County. (Smith et al.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adult damage light on 5 percent of 60-acre bean field near Ruthsburg, Queen Annes County. (U. Md., Ent. Dept., June 14).

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Variable; increasing to 30-50 per sweep on midseason peas (5 inches high) in southwestern counties. Some controls on peas underway. (Wis. Ins. Sur.).

A THRIPS (Sericothrips variabilis) - DELAWARE - Abundant; damage heavy in Sussex County. (Burbutis, June 14).

COLE CROPS

CABBAGE MAGGOT (Hylemya brassicae) - NEW YORK - Adults, pupae, and larvae in Ontario County; damage evident in untreated fields. (N.Y. Wkly. Rpt., June 17). MICHIGAN - Adults common in Monroe County. (Wells, June 24). OKLAHOMA - Ranged 8-12 per head on cabbage in Payne County home garden; damage heavy. (Okla. Coop. Sur.).

DIAMONDBACK MOTH (Plutella xylostella) - NORTH DAKOTA - Damaged mustard in Pierce County. Larvae per 100 sweeps by county: Ward, 0-4 (average 20); Bottineau, 1-180 (average 36); Pierce, 7-300 (average 93). Adults per 100 sweeps by county: Ward, 0-100 (average 50); Bottineau, 2-150 (average 41); Renville, 2-20 (average 8); Pierce 100-1,000 (average 683). Mustard growth ranged from few inches to over 2 feet; some advanced fields in half bloom. (Kaatz).

IMPORTED CABBAGEWORM (Pieris rapae) - IOWA - Larval feeding heavy in home garden cabbage in Polk County. (Iowa Ins. Sur.). OHIO - Larval damage by this species and Trichoplusia ni 5 percent in 30 acres of cabbage in Sandusky County June 15. (Maddy).

WESTERN BLACK FLEA BEETLE (Phyllotreta pusilla) - NORTH DAKOTA - Damage up to 50 percent in mustard in north-central counties. Counts per 100 sweeps by county: Ward, 85-350 (average 217); Bottineau, 7-1,250 (average 302); Renville, 30-350 (average 151); Pierce, 5-600 (average 135); McHenry, 800 in one field. (Kaatz).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittatum) - MAINE - Damage serious to squash and cucumber in many areas of State June 16. (Boulanger). DELAWARE - Damage continues on young cucumber plants. (MacCreary, June 20). MARYLAND - Generally damage heavy to young cucurbits on Eastern Shore; controls necessary on young plants in many counties. (U. Md., Ent. Dept., June 14).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Medium to heavy on cucumbers in Choctaw and Bryan Counties. Heavy, killing cucumbers in Payne County garden. (Okla. Coop. Sur.).

CUTWORMS - WISCONSIN - Foliage damage light on cucumbers in Waushara County; some plants killed due to severe infestation at soil surface. Some controls applied. Damage severe in home gardens in area. (Wis. Ins. Sur.).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Adults and eggs heavy on squash in Payne County; medium on squash in Washita and Bryan Counties. (Okla. Coop. Sur.).

INSECT DETECTION

New State Records

A WEEVIL (Hormops abducens) - NORTH CAROLINA - In squirrel nest box in Umstead State Park, Wake County, January 14, 1967. Collected by A.L. Kyles. Det. by R.E. Warner. (Weekman).

AN APHID (Iziphyia flabella) - MISSOURI - Collected from sedge May 5, 1968, by W.S. Craig. (p. 577).

A PLANT BUG (Orthotylus chlorionis) - DELAWARE - Fed on honeylocust at Wilmington, New Castle County, June 19, 1968. (p. 594).

A DEER FLY (Chrysops niger taylori) - SOUTH CAROLINA - Very abundant in Pawleys Island area of Georgetown County. (p. 596).

New County Records

AN ANT (Aphaenogaster tennesseensis) - MARYLAND - Collected from saw logs near Centreville, Queen Annes County, April 17, 1968, by J.L. Hellman. Det. by D.R. Smith. (U. Md., Ent. Dept.).

EUROPEAN WHEAT STEM SAWFLY (Cephus pygmaeus) - MARYLAND - Queen Annes County. (p. 577).

ALFALFA WEEVIL (Hypera postica) - MICHIGAN - Kent County. (p. 577). NORTH DAKOTA - Mountrail County. OREGON - Multnomah County. (p. 578).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Crawford, Iron, Stoddard, and Washington Counties. (p. 578).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - MISSOURI - Clark County. (p. 579).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Ste. Genevieve County. (p. 579).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Osceola County. (p. 590).

GLOVER SCALE (Lepidosaphes gloverii) - FLORIDA - Osceola County. (p. 590).

AN ERIOPHYID MITE (Eriophyes gardeniella) - FLORIDA - Dade, Martin, Osceola, and Highlands Counties. (p. 590).

A MOSQUITO (Aedes atlanticus) - MISSOURI - Boone County. (p. 595).

A BLACK FLY (Simulium gouldingi) - PENNSYLVANIA - Forest County. (p. 596).

CEREAL LEAF BEETLE (Oulema melanopus) - PENNSYLVANIA - Erie, Venango, Washington, Westmoreland, and Indiana Counties. (p. 599).

CORRECTIONS

CEIR 18(24):528 - IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) should read (Plagioder a versicolora)

CEIR 18(24):513 - ALFALFA WEEVIL (Hypera postica) - WISCONSIN - ... Damaged one per 10 terminals in 50 plants examined ... should read ... Damaged one in 50 terminals examined ... (Wis. Ins. Sur.).

GENERAL VEGETABLES

ASPARAGUS BEETLE (Crioceris asparagi) - MARYLAND - Adult and larval damage heavy to asparagus garden plots near Greenbelt, Prince Georges County. (U. Md., Ent. Dept., June 14). DELAWARE - Larvae feeding on asparagus ferns. (MacCreary, June 20).

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) - MARYLAND - First adult of season on asparagus at Greenbelt, Prince Georges County. (U. Md., Ent. Dept., June 14).

TORTOISE BEETLES - MARYLAND - Metrona bicolor, Agroiconota bivittata, Deloyala guttata and Chelymorpha cassidea lightly defoliated 5-acre sweetpotato planting near Salisbury, Wicomico County. (U. Md., Ent. Dept.).

CUTWORMS - MAINE - In gardens in most areas of State. Very heavy in coastal areas of Waldo County. (Boulanger, June 18). MICHIGAN - Sharp decrease in flights indicated by blacklight traps. Flights peaked much closer together than normal due to weather. Flights of Agrotis ipsilon and Amathes c-nigrum nearing end at Sodus June 17. Caught 68 Spaelotis clandestina moths, 2.5 times higher than usual, in blacklight traps in Berrien County June 11-12. Local problems possible. (Janes).

ONION MAGGOT (Hylemya antiqua) - CALIFORNIA - Larvae heavy on green onions at Susanville, Lassen County. (Cal. Coop. Rpt.). MICHIGAN - Second-generation adults prevalent on onion in many central areas. (Wells, June 24).

THRIPS - COLORADO - Thrips tabaci adults averaged 0-4 per onion plant in most eastern areas, except in southeast Weld County and at La Junta, Crowley County, where counts range 10-15 per plant. (Johnson). CALIFORNIA - Limothrips cerealium adults heavy on vegetables at Laguna Hills, Orange County. (Cal. Coop. Rpt.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - WASHINGTON - Larvae entering peach shoots at Moxee, Yakima County, June 5. (Johnson, Hudson). COLORADO - Moths in attractant traps in all southwestern peach areas, mostly low counts at present date. (Colo. Ins. Sur.). TEXAS - Damaged El Paso County apples. (Dickson). MISSOURI - Moderate in unsprayed apples in central area; light in southeast and west-central areas. (Wkly. Rpt., Fr. Grs., June 18). INDIANA - Caught 7 overwintered males in sex lure traps in Vincennes orchard. (Dolphin, June 17). WISCONSIN - Caught 9 in blacklight trap at Madison June 13-19. (Wis. Ins. Sur.). DELAWARE - Emergence complete in Woodside cage. (MacCreary, June 20). NEW JERSEY - Caught 8 in bait jar June 11-18 in Gloucester County. (Ins.-Dis. Newsltr.). NEW YORK - Larval entries in apple orchard at Geneva June 16. Adult emergence heavy during hot weather; hatch should be heavy through June. Eggs scarce and in red ring stage June 14 in Ulster County. (N.Y. Wkly. Rpt.). VERMONT - Flight continues; light due to cool weather. (MacCollom).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - First summer-brood emergence continues at Vincennes; adults numerous. (Dolphin, June 17). NEW JERSEY - Caught 10 in bait jar June 11-18 in Gloucester County. (Ins.-Dis. Newsltr.). CONNECTICUT - Terminal damage at New Haven and Glastonbury. (Savos, June 18).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - WISCONSIN - Emergence begun in Dane County. (Wis. Ins. Sur.).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - WASHINGTON - Adults emerging on pears; males numerous June 11 in blacklight trap at Wenatchee, Chelan County. (Burts). WYOMING - Larvae heavy on chokecherry and apple trees at Newcastle, Weston County. (Parshall). IDAHO - Pupation occurring, remaining first-generation larvae mostly in last instar at Moscow, Latah County. Much evidence of high larval

mortality due to disease. (Manis).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - First summer-brood emergence peaked (2,399 males) in virgin female traps in 5-acre orchard at Vincennes. (Dolphin, June 17). MAINE - Second instars feeding in central area orchards. (Boulanger, June 18).

PEACH TWIG BORER (Anarsia lineatella) - WASHINGTON - First-generation larvae in peach shoot June 12 at Parker, Yakima County. (Johnson, Chandler). COLORADO - Adults prevalent in bait traps in peach orchard area in Mesa County. (Sisson, Anderson).

PEACH TREE BORER (Sanninoidea exitiosa) - WASHINGTON - First larvae in cocoons on peach June 3 at Parker, Yakima County; completely infested 5-acre orchard. (Johnson).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Caught 425 males June 11-17 compared with 541 previous week in Vincennes orchard. (Dolphin).

APPLE-AND-THORN SKELETONIZER (Anthophila pariana) - WASHINGTON - First larvae of season feeding June 11 on pear and cherry foliage at Yakima, Yakima County. (Johnson).

PLUM CURCULIO (Conotrachelus nenuphar) - MICHIGAN - Egg laying cuts in orchard south of Hart June 19; some small larvae feeding around pit. (Wooley).

SHOT-HOLE BORER (Scolytus rugulosus) - INDIANA - Damaged apple seedlings in commercial orchard in Sullivan County. (Dolphin, June 17).

A LEAF BEETLE (Luperodes bivittatus) - CALIFORNIA - Adults, probably this species, heavy on peach, plum, and almond trees at Elk Creek, Glenn County. (Cal. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Additional adults emerged in Dane County. Some in baited trap. (Wis. Ins. Sur.). MICHIGAN - Collected from "seeded" cages in Berrien County this period. First adult emerged June 17. (Carpenter). Collected on stickyboards at Grand Rapids June 18. (Klackle). INDIANA - Major emergence in progress in unsprayed early variety blocks at Vincennes; 119 adults taken on bait boards. (Dolphin, June 17). OHIO - First adults of season collected on stickyboards in Ashtabula County June 20. (Still). NEW YORK - First adults of season emerged in cages at Highland June 13. (N.Y. Wkly. Rpt.).

CHERRY FRUIT FLY (Rhagoletis cingulata) - PENNSYLVANIA - First fly emerged June 16, emerged rapidly by June 19 in Erie County. (Cox).

BLACK CHERRY FRUIT FLY (Rhagoletis fausta) - MICHIGAN - Adults emerging in Benzie County June 11. (Wooley).

APPLE APHID (Aphis pomi) - INDIANA - Colonies increasing on young terminals in some commercial Vincennes orchards. (Dolphin, June 17). NEW JERSEY - Curling sucker leaves in unsprayed apple blocks. (Ins.-Dis. Newsltr.). CONNECTICUT - Increasing in most orchards; major pest in home orchards. (Savos, June 18). MAINE - Increased in numbers and size of colonies in most areas. (Boulanger, June 18).

GREEN PEACH APHID (Myzus persicae) - MISSOURI - Moderate on sprayed apples in southeast area. (Wkly. Rpt. Fr. Grs., June 18).

BLACK CHERRY APHID (Myzus cerasi) - MARYLAND - Many parasitized on ornamental sweet cherry near Adelphi, Prince Georges County. (U. Md., Ent. Dept.).

PEAR PSYLLA (Psylla pyricola) - MAINE - Adults feeding on pears at Norway; egg laying heavy. (Boulanger, June 18). NEW YORK - Adults very abundant and eggs heavy week of June 10 in pear planting at Alton, Wayne County. Increased in pear blocks in Ulster County. (N.Y. Wkly. Rpt.). MICHIGAN - All stages in orchards where controls reduced due to poor crop; could be problem in 1968. (Wooley, June 24). WASHINGTON - Generally light; second summer-generation hatch begun May 27 at Wenatchee, Chelan County. (Burts).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - OREGON - Collected on peaches and plums in backyard orchard at Portland, Multnomah County. Det. by R.F. Wilkey. (Nicolaison, June 15).

GLOBOSE SCALE (Lecanium prunastri) - DELAWARE - Hatch begun on ornamental plum and peach in State. (MacCreary, June 20).

LEAFHOPPERS - NEW HAMPSHIRE - Empoasca maligna adults noted at Durham June 12; damaged foliage. (Sutherland). MICHIGAN - Typhlocyba pomaria problem in Belding and southwestern fruit areas. (Wooley, June 24).

EUROPEAN RED MITE (Panonychus ulmi) - MISSOURI - Moderate on unsprayed apples in southeast area; light on peach in Delta area. (Wkly. Rpt. Fr. Grs., June 18). INDIANA - Populations at critical levels in some commercial orchards with continuing hot, dry weather at Vincennes. Eggs 5.97-24.23, immatures 4.32-20.18, and adults 0.48-4.05 per leaf in commercial orchards. Light in treated orchards. (Dolphin, June 17). MICHIGAN - In apple orchards where controls ineffective in Jackson, Berrien, and Oakland Counties; 15-20 per leaf in one Jackson County orchard. (Wooley, June 17). OHIO - Adults and immatures light, 5 per leaf, on apple in Jackson County. (Rose). MAINE - First summer-generation hatch begun June 14-15 in central areas. Quiescent female protonymphs found June 18 in several areas. Some overwintering females present. (Boulanger).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - CALIFORNIA - Heavy on pear foliage at Dunsmuir, Siskiyou County. (Cal. Coop. Rpt.).

APPLE RUST MITE (Aculus schlechtendali) - INDIANA - Heavy on untreated apple foliage at Vincennes orchard. (Dolphin, June 17).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Second instars infested up to one-third of nuts on Payne County pecan trees. (Okla. Coop. Sur.). TEXAS - Light on unsprayed pecan trees in Upton County; no larvae on sprayed trees. (Neeb).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Second and third instars on Payne County pecan trees; webs averaged one per 7 trees. (Okla. Coop. Sur.).

A SEED CHALCID (Megastigmus pistaciae) - CALIFORNIA - Some larvae in 1967 pistachio nuts and few adults emerging in caged areas. Suppression treatment given to infested area at Chico, Butte County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Damaged English walnuts and some black walnuts at Ogden and Harrisville, Weber County, and at Brigham City, Box Elder County. (Knowlton).

APHIDS - ALABAMA - Monellia spp. heavy on many trees in Wilcox, Baldwin, Mobile, and Barbour Counties. (Farquar et al.). NEW MEXICO - M. costalis honeydew heavy on some Dona Ana County pecan trees; control work in progress. (Elson). Myzocallis caryaefoliae averaged 2-25 per leaflet on black walnut; honeydew beginning to appear. (Heninger).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - OKLAHOMA - Heavy on Pontotoc County pecan trees. (Okla. Coop. Sur.).

SAN JOSE SCALE (Aspidiotus perniciosus) - WASHINGTON - First attached crawlers on apples June 1 at Gleeed, Yakima County, 11 days earlier than in 1967. (Gregorick). OREGON - First crawlers emerged June 17 on Newtown apple in Hood River Valley. (Zwick). INDIANA - Crawlers in sessile feeding positions on young apples at Vincennes; color rings evident. (Dolphin, June 17).

CITRUS

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Adults collected on sweet orange at St. Cloud, Osceola County. This is a new Florida Department of Plant Industry county record. (Fla. Coop. Sur.).

GLOVER SCALE (Lepidosaphes gloverii) - FLORIDA - Adults collected on sweet orange at St. Cloud, Osceola County. This is a new Florida Department of Plant Industry county record. (Dekle et al.).

SMALL FRUITS

GRAPE LEAF SKELETONIZER (Harrisina americana) - OHIO - Larvae damaged grape foliage in Athens and Scioto Counties. (Ackerman et al.).

A SAP BEETLE (Stelidota geminata) - MICHIGAN - Evident in strawberry plantings in Berrien County June 12; no larvae. (Wooley).

BLUEBERRY MAGGOT (Rhagoletis mendax) - NEW JERSEY - Active in blueberry fields. Numerous in traps June 14 in Atlantic County and June 16 in Burlington County; about a week earlier than in 1967. (Ins.-Dis. Newsltr.).

ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) - TENNESSEE - Completely defoliated unsprayed ornamentals in many central areas. (Quillin). KANSAS - Hatched in Franklin County. (Martinez, June 14). NEBRASKA - Hatch complete, larvae mostly second instar on juniper at Lincoln, Lancaster County. (Keith).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - WYOMING - Hatched on lilac at Newcastle, Weston County. (Parshall). SOUTH DAKOTA - Crawlers recently emerged on new growth of lilacs and elms at Rapid City, Pennington County, and Spearfish, Lawrence County. Infestations heavy; some hedges extensively damaged. (Jones). WISCONSIN - Crawler emergence begun in southern Door County June 7 and farther north June 10. Some stunting and death of ornamentals in heavily infested areas of Bayfield County. (Wis. Ins. Sur.).

AN ERIOPHYID MITE (Eriophyes gardeniella) - FLORIDA - Collected on gardenia in Dade (June 5), Martin (May 29), Osceola (June 11), and Highlands (June 12) Counties. These are new county records. (Dekle et al.).

A FALSE SPIDER MITE (Brevipalpus californicus) - FLORIDA - Infested 1,350 of 1,500 azaleas June 11 in nursery at Tampa, Hillsborough County. (Simmons).

FOREST AND SHADE TREES

BARK BEETLES (Dendroctonus spp.) - VIRGINIA - Active in loblolly pine on small area in Isle of Wight County; noted at 3 locations in loblolly and shortleaf pines in Brunswick County; noted at 2 spots in Westmoreland County. Active in single spot in Amelia County. Additional D. frontalis activity in Henrico, King William, King and Queen, Accomack, Nansemond, and Isle of Wight Counties. (For. Pest Sur. Rpt., May Sum.). SOUTH CAROLINA - D. frontalis easily found in Sumter

National Forest, Oconee County. (Nettles, June 18). Outbreak numbers on pine. (Epps, Nettles, June 18).

ENGRAVER BEETLES (*Ips* spp.) - VIRGINIA - Infested loblolly and Virginia pines in several spots in Westmoreland and King and Queen Counties. Active in shortleaf pine on 2 locations in Mecklenburg County, 3 spots in Amelia County, scattered spots in Pittsylvania County, and in single tree in Campbell County. (For. Pest Sur. Rpt., May Sum).

PALES WEEVIL (*Hylobius pales*) - VIRGINIA - Moderately severe on loblolly pine planted on 2 tracts involving 40 acres in Nansemond County. Light to moderate (up to 25 percent loss) in loblolly and Virginia pine seedlings in cut-over areas throughout Tappahannock area. Damaged scattered individual seedlings on a loblolly pine plantation in Piedmont area and one spot each in Spotsylvania and Stafford Counties. (For. Pest Sur. Rpt., May Sum.).

DOUGLAS-FIR TWIG WEEVIL (*Cylindrocopturus furnissi*) - OREGON - Larvae and pupae, probably this species, damaged Christmas tree farms in Camas Valley and in other areas of Douglas County June 13. (Vertrees).

DOUGLAS-FIR TUSSOCK MOTH (*Hemerocampa pseudotsugata*) - NEW MEXICO - Surveys on white fir, Douglas-fir, and blue spruce revealed infestation scattered throughout Ruidoso, Lincoln County, could have potential of spreading to nearby forest. Trees will be treated to control infestation. (N.M. Coop. Rpt.). COLORADO - Feeding on pinyon pine at Fort Collins. (Hantsbarger).

OLETHREUTID MOTHS (*Rhyacionia* spp.) - VIRGINIA - *R. frustrana* damage evident throughout Piedmont; infested 95 percent of tips in 75-acre loblolly plantation in Fluvanna County. (For. Pest Sur. Rpt., May Sum.). PENNSYLVANIA - *R. buoliana* larvae 50 percent pupated June 13 in Erie County. Damaged 5 to 25 percent of tips in Centre County; moths started emerging June 16. (Adams).

JACK-PINE BUDWORM (*Choristoneura pinus*) - WISCONSIN - Some pupation begun on Scotch pine in Adams County; 50-70 percent fifth instars June 13, remainder fourth and sixth instars. (Wis. Ins. Sur.).

YELLOW-HEADED SPRUCE SAWFLY (*Pikonema alaskensis*) - MINNESOTA - Adults emerged for about a week in northern area, laying eggs; hatch should begin shortly. Severely damaged plantation and roadside white spruce, and fed in varying degrees on black, Norway, and blue spruce. Heavy feeding on white spruce in 2 plantations in northern Aitkin County; some mortality expected. (Minn. Ins. Rpt.).

CONIFER SAWFLIES (*Neodiprion* spp.) - VIRGINIA - *N. pratti pratti* defoliation of shortleaf, Virginia, and occasionally loblolly pines more evident than last year in Coastal Plain; defoliation averaged 20 percent or less. (For. Pest Sur. Rpt., May Sum.). MICHIGAN - *N. lecontei* eggs on over 50 percent of trees in plantation of red and jack pine in Cheboygan County; over 1,000 eggs on some 2-foot red pines. (Flink, June 24).

PINE SPITTLEBUGS (*Aphrophora* spp.) - VIRGINIA - *A. parallela* more active than normal on all native pines throughout Piedmont. Evident on Virginia pine over most of Botetourt County, on Norway spruce in Frederick County, and widespread on Virginia pine in Frederick and Shenandoah Counties. (For. Pest Sur. Rpt., May Sum.). WISCONSIN - Controls for *A. parallela* required in area of Juneau County. (Wis. Ins. Sur.). MICHIGAN - *A. parallela* adults June 19 on Scotch pine in Shiawassee County, mostly fifth instars present. *A. saratogensis* adults on red and white pines at rural landscape planting in Saginaw County June 19, earliest date adults collected in State. (Hanna).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - WYOMING - Crawler emergence beginning at Buffalo, Johnson County. Citywide spraying program initiated, about 1,000 trees to be sprayed. (Quade, Parshall).

SOFT SCALES - WISCONSIN - Toumeyella numismaticum crawlers evident on Scotch and jack pine in Adams County June 13; crawlers first noted June 14 on jack pine at Millston, Jackson County. Some controls may be required. (Wis. Ins. Sur.). MINNESOTA - Physokermes piceae laying eggs but still feeding. Hatch will occur in about 2 weeks. (Minn. Ins. Rpt.).

APHIDS - NEW HAMPSHIRE - Mindarus abietinus light to severe in Christmas tree plantations at Haverhill, Bath, and Sugar Hill in Grafton County. Tip damage 35 percent in one field and up to 95 percent on some trees. (Avery, Sutherland). CALIFORNIA - Elatobium abietinum nymphs and adults heavy on Colorado blue spruce at Salinas, Monterey County. (Cal. Coop. Rpt.).

PINE BARK APHID (Pineus strobi) - MINNESOTA - Infested small Norway pine at Park Rapids and Brainerd area. Light on jack pine in north-central district. (Minn. Ins. Rpt.).

SPRUCE SPIDER MITE (Oligonychus ununguis) - DELAWARE - Heavy on hemlock in northern area. (MacCreary, June 20). MARYLAND - Heavy on several ornamental spruce and hemlock plantings in Baltimore and Prince Georges Counties. (U. Md., Ent. Dept.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - OHIO - Larvae on variety of deciduous trees; defoliation very light in Monroe, Hocking, and Ross Counties. (Murphy et al.). MICHIGAN - Widespread defoliation of maple, aspen, oak, basswood, and elm in 3 counties; over 75 percent defoliation in many areas. Outbreak extends from 4 miles north of Kalkaska to 4 miles north of Boyne City. Involves 13,500 acres in northern Kalkaska County, 130,000 acres in Antrim County, and 15,500 acres in Charlevoix County. (Flink, June 24). MINNESOTA - In fifth instar in northern area. Defoliation of aspen just becoming noticeable at International Falls and Ely area. Feeding will be spotty again this year; many areas will have complete defoliation interspersed with minor feeding. Will continue feeding until very last part of June. Extended wet, cool spring, especially in northern area, appears to have had at least a minor effect. Where problems moderate in 1967, especially at Virginia, Eveleth, and Hibbing, problems less serious so far in 1968. Scattered findings of larvae from Duluth. (Minn. Ins. Rpt.).

TORTRICID MOTHS - MICHIGAN - Widespread Archips argyrospilus defoliation of oaks throughout the north-central Lower Peninsula north of Harrison; many areas over 80 percent defoliated; defoliation estimated at over 1.5 million acres. (Flink, June 24). MINNESOTA - Middle to late instars of Choristoneura conflictana very common on aspen in northern area; no serious defoliation. (Minn. Ins. Rpt.). OREGON - A. rosana abundant on Viburnum davidii and Ulmus sp. at Corvallis, Benton County. Collected June 14 and 21, mostly pupae on latter date. Larvae and few pupae collected June 4 on Cornus sp. at Roseburg, Douglas County. (Westcott, Goeden). CALIFORNIA - C. rosaceana larvae heavy on Tilia sp. foliage in Redwood City, San Mateo County. (Cal. Coop. Rpt.).

CANKERWORMS - MICHIGAN - Alsophila pometaria larvae defoliated hardwoods on 800-1,000 acres in Shakey Lake Park, Menominee County, June 12; some controls applied. (Hanna). Cankerworms defoliated elm in many places in the northern Lower Peninsula, particularly in 3-acre elm woodlot in Cheboygan County with over 90 percent of leaves gone. (Flink, June 24). NEW YORK - Paleacrita vernata and A. pometaria abundant in Onondaga County. (N.Y. Wkly. Rpt., June 17). MAINE - P. vernata defoliation severe on oaks at Argyle; much injury to residential apple plantings at Orono. A. pometaria feeding heavy on elms at Portland. (Boulanger, June 18).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - CALIFORNIA - Larvae heavy on willow at Yreka, Siskiyou County. (Cal. Coop. Rpt.). MINNESOTA - Few moderate infestations in central area on American elm and green ash. (Minn. Ins. Rpt.). NEW HAMPSHIRE - Half-grown larvae on elm at Durham June 11. (Conklin). VERMONT - Larvae defoliated elm and willow. (MacCollom).

LYMANTRIID MOTHS - MAINE - Stilpnotia salicis present at Argyle; numbers and damage severe on poplar at Knox and Prospect; larvae heavy at Madison, leaving destroyed foliage; completely defoliated poplar at Dover and Foxcroft area. (Boulanger, June 18). MINNESOTA - Hemerocampa leucostigma larvae caused holes and ragged edges on leaves of elm and other trees and shrubs at Minneapolis and St. Paul. (Minn. Ins. Rpt.).

PALMERWORM (Dichomeris ligulella) - OHIO - Larvae severely defoliated oak in Vinton and Athens Counties; consumed up to 90 percent of foliage; damage heavier in crowns. Defoliation severe on pin oak at location in Wayne County. (Campbell et al.).

FALL WEBWORM (Hyphantria cunea) - NEBRASKA - Second instars fed on Lancaster County mulberry. (Peterson, Helms). DELAWARE - Larvae damaged shade trees in State. (MacCreary, June 20).

ELM LEAF BEETLE (Pyrrhalta luteola) - OREGON - Young larvae present at Corvallis, Benton County. (Capizzi, June 15). IDAHO - Eggs general on trees in park at Rupert, Minidoka County; no larvae. (Portman). UTAH - Larvae skeletonized leaves at Hurricane and St. George in Washington County. (Knowlton, Hall). NEW MEXICO - Damaged elms at Tularosa, Roswell, Farmington, Belen and Albuquerque. (N.M. Coop. Rpt.). TEXAS - Light to moderate in Martin, Reagan, and Upton Counties. (Neeb). OKLAHOMA - First-generation pupation begun in north-central and northwest areas. (Okla. Coop. Sur.). NEBRASKA - Defoliation about 20 percent at Falls City, Richardson County. Most larvae full grown, leaving trees to pupate. (Keith, Rai). MAINE - Numerous and damaging in southern area; much injury in Unity. (Boulanger, June 18).

COTTONWOOD LEAF BEETLES (Chrysomela scripta complex) - MISSOURI - All instars light in cottonwood plantings in southeast area; adults present. (Munson). VIRGINIA - Adults, larvae, and pupae feeding on alder in Rockbridge County. (Kosztarab).

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) - MARYLAND - Adults and larvae heavily defoliated 13 large willows at Salisbury, Wicomico County. Damage conspicuous statewide this year. (U. Md., Ent. Dept.).

ALDER FLEA BEETLE (Altica ambiens) - WASHINGTON - Adults heavy on alders past month at Loon Lake, Stevens County; all old foliage damaged; early instars evident. (Johansen, June 14).

BRONZE BIRCH BORER (Agrilus anxius) - NORTH DAKOTA - Infestations and damage in numerous birch trees at Fargo; some trees dead. Adults emerging. (McBride). OHIO - Previous larval feeding May 31 extensively damaged individual birch trees in Delaware County. Larval girdling killed branches and some tops of trees. (Galford). Adult emergence begun from birch in Licking County June 18. (Walker).

PERIODICAL CICADAS (Magicicada spp.) - OHIO - Egg laying (17-year race) extensive in Jefferson, Columbiana, and Trumbull Counties June 14-20; "flagging" and twig breakage evident. Some small infestations reduced to noneconomic levels by bird predation and controls. Active and potentially damaging in woods in other areas. Some nymphs emerging in various locations. (Forsythe).

SAWFLIES - MINNESOTA - Tethida cordigera very light in central and southeast areas. Fenusa ulmi heavy in area just west of Minneapolis and St. Paul on American elm. (Minn. Ins. Rpt.). NEW YORK - F. pusilla damage evident in Onondaga County. (N.Y. Wkly. Rpt., June 17). DELAWARE - Caulocampus acericaulis caused some maple leaf drop in State. (MacCreary, June 20). MAINE - F. pusilla numbers and damage heavy in most areas of State; injury more severe on gray birch. Pristiphora geniculata active with much injury to mountain ash in Cumberland County. (Boulanger, June 18).

A PLANT BUG (Orthotylus chlorionis) - DELAWARE - Abundant on honeylocust, heavy feeding apparently injured leaves at Wilmington, New Castle County, June 19, 1968. This is a new State record. (Burbutis). OHIO - Feeding on honeylocust foliage in Licking County June 7; some discoloration. (Walker). Damage by this species and unspecified leafhoppers extensive on scattered honeylocust in Delaware County June 12. Tree tops dying and foliage browned in heavily infested trees. (Galford).

EUROPEAN ELM SCALE (Gossyparia spuria) - VIRGINIA - Crawlers emerging on American elm in Rockbridge County. (Amos, Allen, June 10). WISCONSIN - Crawler emergence in Dane County; some exposed. Very heavy on elm at Madison. (Wis. Ins. Sur.). CALIFORNIA - Heavy on elms at Chico, Butte County. (Cal. Coop. Rpt.).

SOFT SCALES (Pulvinaria spp.) - MARYLAND - Outbreak numbers on ornamental dogwood and maple in Baltimore, Anne Arundel, and Prince Georges Counties. (U. Md., Ent. Dept.). OHIO - P. innumerabilis eggs hatching and crawlers dispersing on maple in Greene County (Kennedy) and probably elsewhere in southern half of State (Rose). WISCONSIN - P. innumerabilis egg hatch begun in Rock County; no crawlers leaving cottony mass. (Wis. Ins. Sur.). NEVADA - P. innumerabilis heavy on various shade trees in Reno and Sparks area, Washoe County. (Gustafson).

HAWAII INSECT REPORT

Corn - All stages of CORN PLANTHOPPER (Peregrinus maidis) heavy in cornfield in Kaaawa, Oahu. Nymphs and adults of Tytthus mundulus (cane leafhopper egg sucker) and Cyrtorhinus lividipennis (a predaceous capsid bug) abundant in area. (Funasaki).

Turf - Larvae of a GRASS WEBWORM (Herpetogramma licarsisalis), up to 146 per square foot, caused moderate to heavy lawn damage throughout Hilo, Hawaii Island. Parasitism by Trichogramma semifumatum (a minute egg parasite) 0-33 percent in different areas of Hilo. Adults annoying man indoors. (Yoshioka).

Vegetables - GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) nymphs and adults heavy on pumpkin, tomato, and snap bean plantings in Omaopio, Maui, between 1,300 and 2,200 feet elevation. (Ah Sam). All stages of LEAF MINER FLIES (Liriomyza spp.) increased from light to medium to heavy in green onion fields at Koko Head, Oahu; larvae and adults heavy on tomato in Omaopio, at 1,300 feet elevation. (Sato, Ah Sam). GREEN PEACH APHID (Myzus persicae) medium to heavy in bell pepper plantings in Anahola, Kauai. (Ikehara). BEET ARMYWORM (Spodoptera exigua) generally light but increasing in some green onion plantings at Koko Head. (Funasaki).

Fruits - BARNACLE SCALE (Ceroplastes cirripediformis) nymphs and adults heavy, 50-75 per foot of stem, in 10 acres of 150-acre passion fruit farm in Kahului, Maui. (Miyahira).

Forest and Shade Trees - A PSYLLID (Psylla uncatoides) adults light, 2-9 (average 4) per sweep, on koa trees in Kaneohe, Waimanalo, and Honolulu (Kalihi and Tantalus) on Oahu. (Funasaki).

Beneficial Insects - Adults of a SCIOMYZID FLY (Sepedon sauteri) medium in 5-acre taro planting in Hanapepe, Kauai. (Sugawa).

MAN AND ANIMALS

MOSQUITOES - OHIO - Some heavy and annoying populations expected over State in few weeks. Heavy May rains and flooding favorable for development of flood-water species. (Rings). Problem in Wayne County. (Glass). WISCONSIN - Heavy in Pepin, Eau Claire, Richland, and Waukesha Counties; active in most other areas. Woodland species most active. (Wis. Ins. Sur.). MINNESOTA - Of 2,557 larval collections June 9-15, Aedes vexans in 1,528. Five species of Culex taken. Light trap collections increased sharply; of 11,239 females obtained, 10,284 were Aedes vexans. In view of abundant breeding acreage, Mansonia perturbans expected to be very annoying in near future. Aedes vexans dominant in 30 evening bite collections (15-minute) and 106 (5-minute) daytime collections. Rains of June 8, 9, 10 resulted in adult emergence June 11. Adult emergence due to rain of June 13 will occur June 21-25. Populations will be heavy and annoyance acute over southern half of State. Annoyance expected to peak by June 30 in Minneapolis and St. Paul area. Total of 120,000 acres of confirmed breeding areas treated. (Minn. Ins. Rpt.). MISSOURI - A. vexans increasing (276 in 1 night) in blacklight traps in central area. Probably A. triseriatus heavy in areas along Mississippi River in southeast area. A. atlanticus taken in Boone County June 12, 1968, for new county record. (Munson). UTAH - Mosquitoes annoying at Oak City and nearby farm areas of Millard County June 11; mostly A. dorsalis very annoying on farms and about recreation areas in Delta and Sutherland area. (Davis, Knowlton). Very numerous and troublesome throughout Abraham and Sutherland farming areas with some annoyance to fishermen and campers in Oak Creek Canyon of Millard County. Also annoying in meadow areas of Nephi and Juab, Juab County, and northern Skull Valley, Tooele County. (Knowlton). OREGON - A. dorsalis very abundant and severely annoying cattle in Langley Valley, Klamath County, June 8-14. (Wilcox).

A BITING MIDGE (Leptoconops torrens) - CALIFORNIA - Adults heavy and annoying in Willows area, Glenn County. (Cal. Coop. Rpt.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 158 cases reported in U.S. June 16-22 as follows: TEXAS - Atascosa 6, Bandera 2, Bee 5, Bexar 3, Brewster 2, Brooks 5, Caldwell 1, Cameron 1, De Witt 10, Edwards 2, Frio 6, Gonzales 1, Guadalupe 1, Hidalgo 3, Kenedy 4, Kinney 1, Karnes 5, Kleberg 9, La Salle 2, Live Oak 11, Medina 5, Milam 1, Nueces 3, Real 1, Terrell 4, Tom Green 1, San Patricio 1, Uvalde 12, Val Verde 3, Jim Wells 6, Willacy 1, Zavala 3; ARIZONA - Cochise 7, Gila 1, Graham 1, Maricopa 2, Mohave 1, Pima 11, Pinal 1, Santa Cruz 10, Yuma 2; CALIFORNIA - Imperial 1. Total of 320 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 19, Sonora 133, Chihuahua 13, Coahuila 82, Nuevo Leon 13, Tamaulipas 60. Total of 23 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 53,894,000; New Mexico 100,000; Arizona 14,480,000; California 1,400,000; Mexico 80,894,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - MARYLAND - Ranged 7-18 near Creagerstown and Thurmont in Frederick County on Holstein cattle. Ranged 40-60 per horse at Darlington, Harford County. (U. Md., Ent. Dept.). ILLINOIS - Average per animal by district: Northwest 4.0, southwest 13.0, west 2.5. (Ill. Ins. Rpt.). NEBRASKA - Averaged 8-10 per head on range cattle near McCook, Red Willow County. (Campbell, Raun). SOUTH DAKOTA - Low to absent on herds near Geddes, Charles Mix County; total of 8 adults on 24 closely examined herds. (Balsbaugh). OREGON - Averaged 15 per animal on 8 pastured cattle in Hillsboro, Washington County. (Goeden). Averaged 5-15 per animal in small herds on Sauvie Island, Multnomah County. (Westcott, Goeden).

HORN FLY (Haematobia irritans) - ALABAMA - Heavy on cattle in Cleburne, Wilcox, and Bullock Counties; controls in progress. (Ventress et al.). MISSISSIPPI - Counts per head by county: Attala, 25 on 350 head; Hinds, 20 on 846; Pike, 50 on 70; Clay, 150 on 25; Washington, 75 on 150 head. (Dinkins). TENNESSEE - Increasing rapidly to 300-700 per head in McNairy County. (Johnson, June 14). OKLAHOMA - Counts per head in central, north-central, northwest, and northeast areas: 2,500 on bulls, 1,500 on steers, and 1,000 on mature cows. (Okla. Coop. Sur.). NEBRASKA - Ranged 100-500 (average 200) per head on pastured animals near McCook, Red Willow County. (Campbell, Raun). SOUTH DAKOTA - Heavy on range cattle near Geddes, Charles Mix County; averaged 142 per side on cows. (Balsbaugh). NORTH DAKOTA - Medium to heavy, 50-380 (average 120) per head, on several Hereford herds in McKenzie County. (Brandvik). ILLINOIS - Average per animal by district: Northwest 12, southwest 155, west 42. (Ill. Ins. Rpt.).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Low, less than 1 per animal, on feedlot herd near McCook, Red Willow County. (Campbell, Raun). Ranged 2-3 per leg on feedlot herd near Lincoln, Lancaster County, 2-3 per square foot on resting surfaces. Ranged 5-6 per leg on dairy herd in county, 4-5 per square foot on resting areas. (Campbell). ILLINOIS - Average per animal by district: Southwest 6.7, west 65.0. (Ill. Ins. Rpt.).

BLACK FLIES (Simulium spp.) - PENNSYLVANIA - S. jenningsi adults numerous in Forest and Warren Counties. Few S. gouldingi pupae found in stream in Forest County for new county record. S. verecundum larvae very numerous in all streams checked in Forest County. (Green, June 8).

TABANID FLIES - OKLAHOMA - Heavy, 15-35 per head, on isolated cattle in Payne and Noble Counties. (Okla. Coop. Sur.). MISSISSIPPI - Tabanus spp. per head averaged 5 on 350 animals in Attala County and 5-10 on 150 animals in Washington and 425 animals in Hinds Counties. (Dinkins).

A DEER FLY (Chrysops niger taylori) - SOUTH CAROLINA - Very abundant in Pawleys Island area of Georgetown County. Unusually annoying to vacationers in tide-water area this year. (Adkins, May 28). This is a new State record. (McAlister). See CEIR 18(20):425 for report on unspecified deer flies in South Carolina Strand area. (PPC).

AMERICAN DOG TICK (Dermacentor variabilis) - TENNESSEE - Very numerous in brushland over western area. (Locke, June 19). WISCONSIN - Increasing in Ashland County. (Wis. Ins. Sur.). MICHIGAN - Present in western counties of Upper Peninsula since early May. Numerous on field workers June 10-21. (Janes).

CHIGGER MITES - OKLAHOMA - Heavy and annoying to man in east-central and south-east areas. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - ALABAMA - Very annoying to homeowners in Bibb, Madison, and Limestone Counties past 6-8 months. (McQueen).

CATTLE GRUBS (Hypoderma spp.) - NORTH DAKOTA - Adult activity evident on pasture cattle in Dunn, Mercer, Morton, Stutsman, and Barnes Counties. (Brandvik). IDAHO - Annoying beef cattle on range at Bruneau area, Owyhee County. (Robertson).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults 10-60 (average 24) per 100 sweeps on alfalfa in Converse, Niobrara, Weston, Crook, Campbell, and Johnson Counties. (Parshall). ARIZONA - Hippodamia convergens averaged 1 per plant on cotton at Bowie, on corn and sugarbeets in Stewart District, and on milo at Elfrida, Cochise County. (Ariz. Coop. Sur.). MISSISSIPPI - Coleomegilla maculata most abundant lady beetle in cotton in delta counties; H. convergens and Scymnus spp. present. (Pfrimmer et al.).

MELYRID BEETLES (Collops spp.) - ARIZONA - Counts per 100 sweeps averaged 100 on sorghum, 90 on cotton, and 40 on alfalfa at Casa Grande, Pinal County, and 80 on alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

A FLEA BEETLE (Altica carduorum) - WISCONSIN - About 200 adults released on Canada thistle near Rewey, Iowa County. Species specific for Canada thistle. First attempt at weed control by an insect in State. (Wis. Ins. Sur.).
INDIANA - Released in Lafayette area June 17. (Anderson, Paschke).

DAMSEL BUGS (Nabis spp.) - MISSISSIPPI - Most abundant beneficial species in most cotton in delta counties. (Pfrimmer et al.). ARIZONA - Counts per 100 sweeps on alfalfa by county: Cochise, 100 at San Simon and 80 at Elfrida; Graham, 75 at Safford; Maricopa, 50 in Salt River Valley. Averaged 60 per 100 sweeps on cotton at Casa Grande, Pinal County. Averaged one per plant on soybeans at Bowie and cotton at Bowie and San Simon, Cochise County. (Ariz. Coop. Sur.). WYOMING - Adults 3-50 per 100 sweeps on alfalfa in Converse, Niobrara, Weston, Crook, Campbell, and Johnson Counties. (Parshall). UTAH - Nabis sp. and N. alternatus numerous in alfalfa in Sutherland, Millard County. (Knowlton, June 11).

FLOWER BUGS (Orius spp.) - ARIZONA - Counts per 100 sweeps on alfalfa averaged 650 at Elfrida and 150 at San Simon, Cochise County. Averaged one per plant on cotton in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).
MISSISSIPPI - O. insidiosus abundant in some cotton in delta counties. (Pfrimmer et al.).

BIG-EYED BUGS (Geocoris spp.) - ARIZONA - Counts per 100 sweeps averaged 60 on alfalfa and 30 on cotton in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). MISSISSIPPI - Present in cotton in delta counties. (Pfrimmer et al.).

GREEN LACEWINGS (Chrysopa spp.) - ARIZONA - Counts per 100 sweeps averaged 50 on sorghum at Casa Grande, Pinal County; 35 on alfalfa at Safford, Graham County; and 30 on cotton in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

A HALICTID BEE (Nomia nevadensis arizonensis) - ARIZONA - Very abundant in safflower in Yuma area, Yuma County. (Tuttle).

HYMENOPTEROUS PARASITES - VIRGINIA - Pupae of Microctonus aethiops (a braconid), Tetrastichus incertus (a eulophid wasp), and Bathyplectes curculionis (an Ichneumon wasp) light at release site in Hanover County. M. aethiops is adult parasite and T. incertus and B. curculionis are larval parasites of alfalfa weevil. (Innes, June 14).

ALKALI BEE (Nomia melanderi) - OREGON - First adults in flight June 3-9 in plots near Umapine, Umatilla County. (Taylor). Males very active in nearby alfalfa June 12; few females present. Only males emerging south of Adrian, Malheur County, June 13. Zodion obliquefasciatum (a conopid fly) and Heterostylum robustum (a bee fly), parasites of N. melanderi, newly emerged in area; pupal cases in burrows near surface. (Westcott, Goeden).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - WISCONSIN - Some first instar Melanoplus sanguinipes in central sands area and at Spring Green. Some third instar M. bivittatus noted in Adams County; second instar Camnula pellucida common in one area. Second instar Dissosteira carolina apparent. (Wis. Ins. Sur.). MINNESOTA - M. bivittatus hatch continues very light in southwest, west-central, and central districts; few second instars found. Counts less than one per square yard. M. femurrubrum hatch begun in lighter soils in central and west-central districts; egg development ranged from eyespot to fully formed. (Minn. Ins. Rpt.).

NORTH DAKOTA - First and second instars of M. bivittatus damaging soybeans in Cass County; marginal counts 75 per square yard. Damage evident 70 feet into field. (Toczek, McBride). Marginal nymphal infestations ranged up to 20 per square yard in cropland area of Richland County. M. bivittatus, M. sanguinipes, and Ageneotettix deorum dominant. Second instar Aeropedellus clavatus less than 1 per square yard in range areas in Golden Valley, Billings, and Slope Counties. M. differentialis and M. femurrubrum hatch begun in cropland in Morton County; eggs mostly segmented. Main hatch expected in about a week in Morton County. (Toczek). **SOUTH DAKOTA** - Grasshoppers numerous along fence lines and roadsides in western Sanborn, northwestern Davison, southeastern Jerauld, and northwestern Aurora Counties. First to fifth instar Melanoplus bivittatus, first to third M. differentialis, and first to second M. femurrubrum counts per square yard ranged 20-50 along fence lines and on roadsides and five in fields; heavier in weedy areas. No damage evident. (Burge). **NEBRASKA** - Grasshopper damage light to border rows of soybeans in Cass and Washington Counties. (Keith, Rai). **WYOMING** - Grasshoppers ranged 5-30 per square yard on 43,500 acres of rangeland at Guernsey, Platte County, and 20,000 acres at Lingle, Goshen County. Ageneotettix deorum, Amphitornus coloradus, Cordillacris occipitalis, Trachyrhachys kiowa, and Melanoplus spp. predominant. (Hardy). **COLORADO** - Melanoplus spp. counts per square yard averaged 0-4 in Lincoln, Crowley, and Las Animas Counties; 0-5 in Prowers, Baca, and Bent Counties (0-8 east of Las Animas and 0-10 in southeastern Baca County) (Johnson); 20-40 (second and third instars) in crop margins in Mesa County (Sisson). Several species moving into croplands and causing damage in Morgan County. (Hantsbarger). **IDAHO** - Light, 5-20 per square yard, on 8,300 acres of rangeland in Elmore County; heaviest on Pot Hole Creek south of Hammett, Elmore County. Oedaleonotus enigma and Aulocara elliotti dominant; several developmental stages noted. (Evans). **UTAH** - First to third instars common but not numerous on farms and roadsides in Oak City area, Millard County; nymphs 1-6 per square yard on alfalfa field margins and on roadside west of Kanosh. Trimerotropis sp. adults and nymphs common (light) and Melanoplus sanguinipes adults few in "Dixie" area of Washington County. (Knowlton, June 11). **NEW MEXICO** - Heavy on 82 sections of De Baca County rangeland. (Judd). Infested 425,000 acres in Quay County; surveys in progress to determine degree of infestation. (Finnie). Occasional adult in Dona Ana and Luna Counties. (Hare).

BOLL WEEVIL (Anthonomus grandis) - **TEXAS** - Boll weevil traps (CEIR 18(20):430) installed in 4 fields known to be infested south of El Paso and one field on Texas-New Mexico State line. Traps also installed in few fields adjacent to those infested in 1967 in southern part of El Paso and in area where weevils previously found. One native weevil taken in field on Texas-New Mexico State line. (PPC South. Reg., May Rpt.). Total of 5 overwintered weevils collected as of June 18 in Kent County. (Almand). For Boll Weevil in other area see page 581-582.

BROWN-TAIL MOTH (Nygmia phaeorrhoea) - Survey completed in northern New England May 3. **MAINE** - Infestations located in coastal areas of Falmouth and Yarmouth Townships and in small area in Portsmouth adjacent to Falmouth infestation. Infestation ranged light to heavy, mostly light. More intensive survey necessary on off-shore islands in Casco Bay before effective and efficient control program can be conducted in area. Infestations range light to heavy on 6 islands at present. (PPC East. Reg.).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - **FLORIDA** - Female collected on peach tree at new location at Ft. Ogden, De Soto County, June 7. (Rhodes, Denmark).

CEREAL LEAF BEETLE (Oulema melanopus) - **INDIANA** - Larvae averaged 16 per 10 sweeps in 8 oatfields in Arcola area of western Allen County; foliage loss 1-5 percent. (Porter). **MICHIGAN** - Total of 9,000 Anaphes flavipes parasitized eggs released in Allegan and Jackson Counties; 2 releases of 250,000 Trichogramma evanescens parasites made in 6-acre oatfield in Allegan County in May. (PPC Cent. Reg.). Damage noted in some late-planted oatfields June 17. (Ruppel, Gomulinski). Currently summer adults rapidly appearing; fourth instars

comprise most of population. (Connin). OHIO - Larvae 2+ per sweep in all oat-fields surveyed in Williams County June 8; mostly second and third instars with some first instars. Damage confined primarily to terminal foliage; larvae 1-5 per leaf. Few adults collected. (Lyon). PENNSYLVANIA - Collected on oats in Erie, Venango, Washington, Westmoreland, and Indiana Counties for new county records. (Eckess, June 14).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - Survey in McAllen and Elsa, Hidalgo County, negative. Operations terminated May 24 in Webb County; 7,000 trees examined during month with negative results. (PPC South. Reg.).

CUBAN MAY BEETLE (Phyllophaga bruneri) - FLORIDA - Attracted to lights in new location at Perrine, Dade County, May 6. (Simpson).

EUROPEAN CHAFER (Amphimallon majalis) - Survey initiated during late May in Connecticut, Delaware, Maryland, Massachusetts, New Jersey, Pennsylvania, Rhode Island, Virginia, and West Virginia. Advanced pupae dug at Allentown, Pennsylvania, May 23; larvae also recovered. Grub digging negative in Connecticut and Rhode Island. Aerial control completed on 297 acres May 7 in Massachusetts; 25 acres ground treated. (PPC East. Reg.).

GRASS BUGS - UTAH - Damaging grasses in Oak Creek area of Millard County June 11; 85 percent adults. Discoloration light to grasses and some grains in Fillmore and Kanosh area; Irbisia sp. adults discolored large acreage of crested wheatgrass in Kanarraville area, Iron County. Irbisia sp. adults light to numerous on crested wheatgrass and other grasses in Oak Creek Canyon, Millard County, June 20; no nymphs. Other grass bugs light and 60 percent adults. Grass bugs moderate on crested wheatgrass 6 miles southwest of Nephi, Juab County. (Knowlton). Labops hesperius almost completely destroyed 5,184+ acres of grass range area in Garfield and Kane Counties June 11. (Thornley). Irbisia sp. damaged tall wheatgrass in some Davis County areas June 20. (Roberts, Boswell). IDAHO - Labops hesperius averaged 1 to 4-5 per square foot in Witmar wheatgrass at Soda Springs, Caribou County. Grass short and yellowing in heavily infested areas; little yellowing in areas where populations 1 per square foot. (Alldafer).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Federal and State survey program underway June 17. About 16,000 traps in eastern area. Western edge of surveyed area will follow Susquehanna River from Maryland State Line to Harrisburg then will go due north to New York State Line. (Eckess). Live larvae discovered outside of spray block in Upper Mount Bethel Township, Northampton County, by State personnel; block boundaries extended. By end of May, third instars observed in areas scheduled for treatment in Monroe County and late second instars observed near Milford, Pike County, in untreated sections of spray block. Small first instars observed May 27 at high elevations in a treated portion of latter area; this late hatch apparently occurred 2-3 days after controls applied. Controls applied at Hawk Mountain, Berks County, and to one block in Monroe County under State contract. NEW JERSEY - Controls applied to total of 57,876 acres. NEW YORK - New York City Parks Department initiated control program on 1,000 acres along parkways. All infested areas of West Point Military Reservation treated. VERMONT - Small infestation located outside regulated area in Berkshire Township, Franklin County, sprayed by State and Federal cooperators. (PPC East. Reg.).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - First adults of season medium and spotted on juniper in Nansemond County June 10. (Edward). Single adults detected on tomato in Westmoreland County June 19 (Allen, Ptucha) and in grape vineyard in Appomattox County June 20 (Allen). Few adults on grape, apple, willow, and tobacco in Pittsylvania County June 14. (Dominick). MARYLAND - First adult of season feeding on asparagus at Mardela Springs, Wicomico County. (U. Md., Ent. Dept.). DELAWARE - First adults of season June 18 in New Castle County. (Spear, Lake).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - FLORIDA - All trap inspections negative during May. TEXAS - Traps serviced in Bee, Brooks, Cameron, Dimmit, Hidalgo, La Salle, Maverick, Nueces, Starr, Val Verde, Webb, Willacy, Zavala, and Zapata Counties with negative results. (PPC South. Reg.).

MORMON CRICKET (Anabrus simplex) - NEVADA - Counts per square yard averaged 10-15 near water and 1-2 at margins of infested area in Rosebud, Pershing County. Infestations continued along 1.5-2 miles of road in area. (Adams, Martinelli). UTAH - Found in range area west from Randolph, Rich County. (Thornley, Knowlton, June 11).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Moth emergence continues in desert cotton areas. Low in sex lure traps in Blythe, Riverside County, and in Imperial County. Cotton now mature enough for larval infestations. All trapping results negative in San Joaquin Valley. Sterile moth drops continue restricted due to production difficulties; control of disease difficult in laboratory. (Cal. Coop. Rpt.). NEW MEXICO - Moth counts per night in sex lure traps placed in cotton fields by county: Eddy-130 June 17 and 61 June 20 (12 traps) in one field and 53 June 17 and 27 June 20 (10 traps) in another field (Mathews); southern Dona Ana-42 June 14, 37 June 15, 38 June 16 and 17, none June 18, and 42 June 19 (20 traps) (Adams). No moths in 6 traps at Brazito since June 18-20. (Campbell). TEXAS - Total of 5 moths taken in sex lure traps and one in light traps in McLennan and Falls Counties. Total of 38 moths in light traps and 26 in sex lure traps to date. (Cowan et al.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Light hatch in Union and Colfax Counties. (Finnie).

WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - Larval diggings in previously infested soybean field at Hampton revealed 25 larvae per square foot. Control conducted in Nansemond and Scott Counties and in cities of Hampton and Newport News during May. MARYLAND - At Temple Hills, 2 late instars recovered from known infested site. (PPC East. Reg.).

GOLDEN NEMATODE (Heterodera rostochiensis) - NEW YORK - Survey of seed potato farms completed May 22 throughout State. Total of 6,726 samples collected representing 4,827 acres in 15 counties. Two fields found infested in Steuben County. Survey continued on tablestock farms; 4,900 samples collected from 3,370 acres. Six fields now infested; all in Prattsburg area, Steuben County. Control operations begun on Long Island May 20. MAINE - Processing of 1,766 samples from potato storage areas in Aroostook County completed May 3; results negative. MARYLAND - Soil samples collected on limited scale in Worcester County; number of samples washed, all negative. (PPC East. Reg.) FLORIDA - Soil samples collected on prison farm at Jacksonville; farm received potato waste from potato chip company, importer of potatoes from Steuben County, New York. Numerous root samples examined with negative results. Checks made on 2 farms at Elkton that had received seed potatoes from infested area of New York. Root samples examined with negative results. (PPC South. Reg., May Rpt.). KENTUCKY - Twelve soil samples collected from suspect area in Louisville where potato shipment received from Steuben County, New York. No suspect cysts found. (PPC Cent. Reg., May Rpt.)

Weather of the Week continued from page 572.

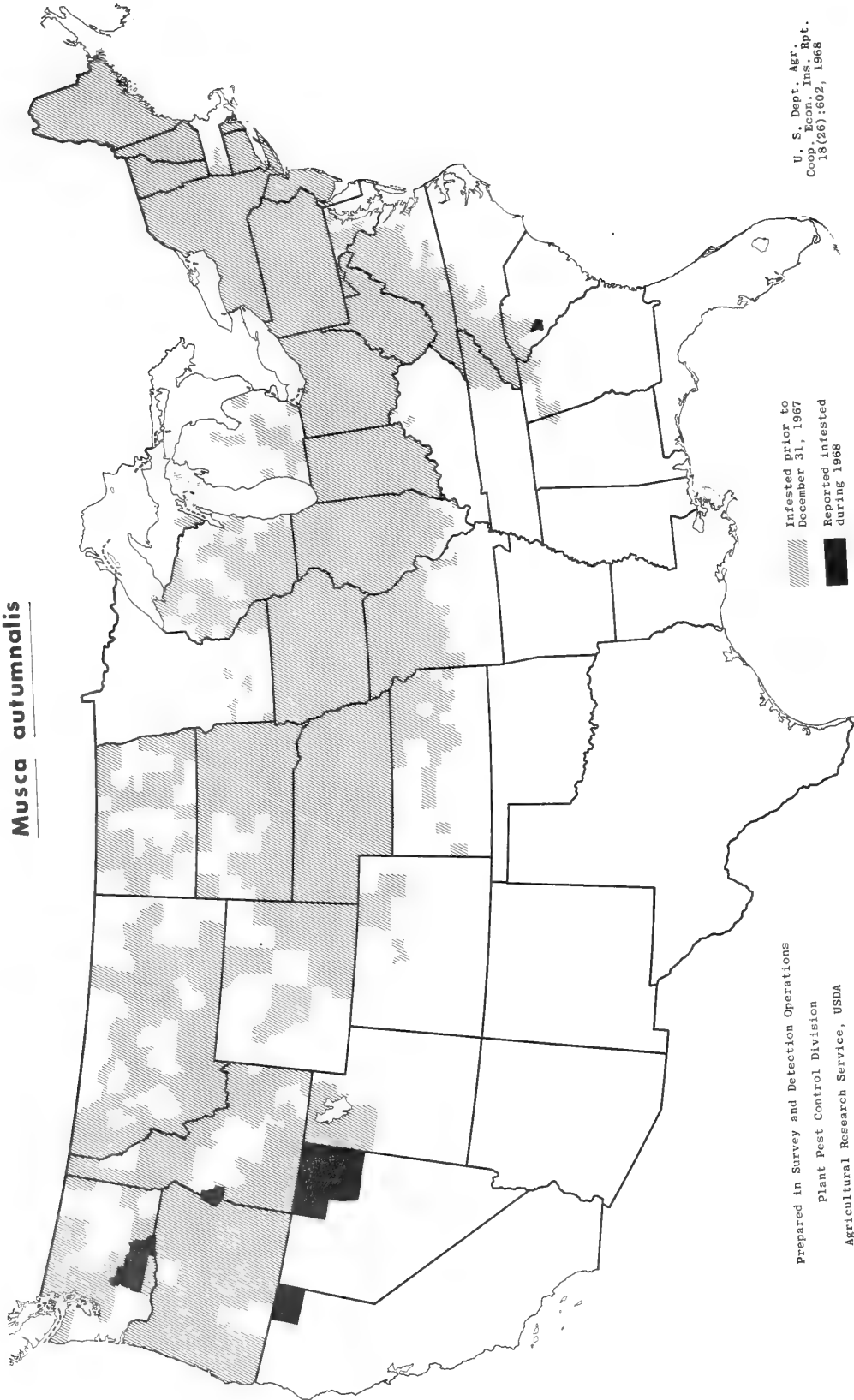
tral Great Plains and the western portion of the northern Great Plains averaged slightly warmer than normal. Over the East, temperatures averaged cooler than normal in spite of a warming trend during the week in the South Central and Southeast and rapid warming over the weekend in the Northeast. Temperatures from Iowa to Maryland climbed to the 90's on Sunday afternoon with increasing humidity causing additional discomfort to the citizens. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

State	Locality	Date	Precipitation inches	Temperature °F	Wind direction	Wind speed	Humidity %	Barometer inches	Crops	
									Yield	Quality
FLORIDA	Gainesville	6/19, 20								
IOWA	Wapello	6/10-18								
KANSAS	Manhattan	6/18								
	Powhattan	6/15, 18								
MARYLAND	Centreville	6/11-17								
MINNESOTA	Crookston	6/10-21								
	Fergus Falls	6/10-21								
	Shakopee	6/10-21								
	Worthington	6/10-21								
MISSISSIPPI	Stoneville	6/15-21	67-96	1.78	2BL					
MISSOURI	Portageville	6/15-21								
NEW JERSEY	Aura	6/12-19								
	Evesboro	6/12-19								
	Plainsboro	6/12-19								
	Seabrook	6/12-19								
NORTH DAKOTA	Fargo	6/19								
	Hazelton	6/17								
OHIO	Hilliard	6/13-19								
	Wooster	6/14-20								
SOUTH DAKOTA	Brookings	6/17-20								
TEXAS	Waco	6/15-21	74-94	0.51						
WISCONSIN	Madison	6/13-19								

Distribution of Face Fly

Musca autumnalis



Infested prior to
December 31, 1967
Reported infested
during 1968

Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
June 21, 1968

U. S. Dept. Agr.
Coop. Econ. Invs. Rpt.
18(26):602, 1968



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