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Cooperative

**ECONOMIC INSECT
REPORT**

Issued by

PLANT PROTECTION DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

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

EUROPEAN CORN BORER moths heavy in blacklight traps in Michigan. (p. 420).
CORN ROOTWORMS hatching in Minnesota and Indiana. (p. 421).

ALFALFA WEEVIL larval damage increased on alfalfa in Vermont and in areas of Utah. (p. 422). PEA APHID heavy on alfalfa in New Mexico, increased in Colorado; and heavy on peas in Wisconsin. (pp. 422, 425).

BOLL WEEVIL appearing in damaging numbers in Alabama; infestations increased in south Georgia. (p. 423).

RED-BANDED LEAF ROLLER damaging crab apple and apple in Colorado. (p. 426).

LARGE ASPEN TORTRIX defoliation heavy on aspen in Minnesota. SATIN MOTH larvae defoliated willow and poplar in Idaho. (p. 429).

GYPSEY MOTH larval defoliation expected to be heavy in north and central New Jersey; defoliation expected on about 100,000 acres in New York, and several thousand acres in Pennsylvania. (p. 433).

Detection

For new county records see page 434.

Special Reports

Distribution of Lesser Grain Borer. Map. (p. 436).

Cereal Leaf Beetle Quarantine Map. Centerfold.

Reports in this issue are for week ending June 19 unless otherwise indicated.

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Cereal Leaf Beetle Quarantine Map. Centerfold.

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-JUNE TO MID-JULY 1970

The Weather Bureau's 30-day outlook for mid-June to mid-July is for temperatures to average above seasonal normals in the northeastern quarter of the Nation. Below normal temperatures are indicated for the south Atlantic and east Gulf Coast States as well as the intermountain region and the western half of the Great Plains. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal over the northern half of both the intermountain region and the Great Plains as well as over the south Atlantic Coast States. Subnormal precipitation is indicated for the Ohio and Tennessee Valleys, the middle and north Atlantic Coast States and the southern Plateau. In unspecified areas near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING JUNE 22

HIGHLIGHTS: Considerable severe weather occurred in mid-America early in the week. In general, warming trends occurred over the West and South and a cooling trend occurred over the North Central and Northeast.

PRECIPITATION: Light showers, mostly of little importance, fell from the far Northwest to the northern Rocky Mountains early in the week. Much heavier showers fell in the central part of the Nation early in the week in connection with a storm centered in that area and along a cold front that separated warm moist gulf air from an advancing dry continental air mass. Numerous tornadoes occurred from Kansas to Michigan and Ohio. A dozen or more touched down in Kansas. Thunderstorms, many accompanied by damaging winds or large hail, occurred in the warm moist air. Gusts reached 92 m.p.h. at Norfolk, Nebraska, Monday afternoon. Hailstones up to 2 inches in diameter fell in the Red Oak, Iowa, vicinity Wednesday. Late Thursday evening, hail accumulated to 10 inches in depth about 10 miles south of Oberlin, Weather of the week continued on page 435.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Chorizagrotis auxiliaris) - NORTH DAKOTA - Treated 75 acres of sugar beets west of Hoople, Walsh County. (Kaatz).

ARMYWORM (Pseudaletia unipuncta) - KANSAS - Larvae 1 per square foot in bromegrass harvested week of June 6-12 in Brown County. (Goertz). VIRGINIA - Overwintered generation pupated in Montgomery County, some moths flying. Possible damage to whorls of corn from this generation; infestation in whorls generally spotty. (Allen). MICHIGAN - Larvae damaged corn in Newaygo County field. Counts higher locally than for past 6 years, no further damage. (Ruppel, June 15). WISCONSIN - Larvae 1 per 10 sweeps in most alfalfa in northeast. Completely devoured few cornfields adjacent to alfalfa being cut in La Crosse County. Few moths laying eggs in rank peafields. (Wis. Ins. Sur.). ILLINOIS - Expect moth increase within next 3-4 weeks. Few moths present. (Sur. Bull.). IOWA - Damaged corn in isolated areas; less than 1 per square foot in bromegrass pastures in Guthrie County June 9. Currently none in oatfields checked in Pottawattamie, Shelby, Adair, and Boone Counties. Counts per 100 sweeps: 8 near Stanhope, Hamilton County; 3 in margin of oatfield near Des Moines, Polk County; 1 larva per 10 sweeps near Redfield, Dallas County. (Iowa Ins. Inf.). MINNESOTA - Noneconomic in southwest, south-central, central, west-central, and lower Red River Valley areas. Larvae light in small grains and alfalfa, most common in roadside grasses. Blacklight trap moth collections still high in Crookston and Fergus Falls. Moths throughout central district in small grain and grass. Some pupation in central district, most larvae in third and fourth instars. (Minn. Pest Rpt.). SOUTH DAKOTA - Ranged 8-14 per square foot in 2 ryefields (150 acres) northwest of Huron, Beadle County. Larvae 4-8 per square foot in additional ryefields and one winter wheatfield in Beadle County. Spotty, averaging 4-5 per square foot in some areas of ryefield near Mitchell, Davison County. Heavy in ryefields, moving into corn; controls applied in Turner County. Heavy, 14-20 per square foot, in ryefield near Doland, Spink County; light to scattered in wheat. Larvae over 4-6 per square foot throughout field and 15-20 per square foot in lodged areas on 140 acres of rye in Brookings County. Mostly early instars. (Kantack et al.).

ASTER LEAFHOPPER (Macrosteles fascifrons) - MICHIGAN - Bioassays indicate about 3 percent infected with aster yellows virus; more than in 1968 and 1969 but less than 1967. (Janes, Bath). WISCONSIN - Ranged 1-30 per 100 sweeps of small grain. Populations generally higher in western counties; heavy in some eastern counties. (Wis. Ins. Sur.). MINNESOTA - Ranged 0-500 per 100 sweeps in west-central and 40-700 in central district on small grain and alfalfa. Second-generation nymphs heavy in southwest district, ranged 1,000-1,200 per 100 sweeps. (Minn. Pest Rpt.). NORTH DAKOTA - Widespread and light in Dickey, Sargent, and Richland Counties. Adults up to 14 per 100 sweeps of flax, wheat, barley, and rye. (Brandvik).

BEET LEAFHOPPER (Circulifer tenellus) - TEXAS - Medium locally at Matador, Motley County. Apparently transmitting curly top to pea and tomato plants. (Pallmeyer).

CORN EARWORM (Heliothis zea) - FLORIDA - Damaged 99-100 percent of ears in unsprayed plots of sweet corn at Belle Glade, Palm Beach County. (Janes, June 8). GEORGIA - Scattered and light on peanuts in south areas. (Morgan). TENNESSEE - Larvae feeding in whorls of early planted corn in west area. Damage light. (Gordon et al.). TEXAS - Light to moderate on Kinney County grain sorghum. Light on El Paso County corn. (Neeb). KANSAS - Feeding light in whorls of less than 5 percent of corn plants checked in Neosho County. (Brooks). INDIANA - Middle instars in whorls of inbred corn in Decatur County on June 15. Only occasional 40-inch corn damaged. (Meyer).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Light to medium on young grain sorghum in Dona Ana County. Some controls applied on grain sorghum in Cotton City area of Hidalgo County. (N.M. Coop. Rpt.). TEXAS - Generally light on grain sorghum in most central and Blacklands counties. Heavy on isolated young grain sorghum in Pecos County. Light in isolated fields of Hudspeth and

Culberson Counties. Corn leaf aphid light to heavy in Rolling Plains. Increasing in panhandle. Some very heavy populations near Lubbock, Lubbock County. (Green et al.). OKLAHOMA - Ranged 200-400 per plant on Jackson County grain sorghum. Light to moderate in Ottawa County. Light on volunteer plants in panhandle. (Okla. Coop. Sur.). KANSAS - Light on sorghum in Jackson, Atchison, Brown, Nemaha, Riley, Dickinson, Marion, and Morris Counties. (Simpson).

GREENBUG (Schizaphis graminum) - ARIZONA - This species and Rhopalosiphum maidis (corn leaf aphid) heavy in spots on corn and sorghum at Kansas Settlement, Bonita, and Stewart district areas of Cochise County. Lady beetles and lacewing adults and larvae moderate. Some areas importing lady beetles. (Ariz. Coop. Sur.). NEW MEXICO - Greenbug very light on grain sorghum in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - Light on grain sorghum in several central counties. Few isolated colonies in Burleson, Williamson, and Milam Counties. Very light in El Paso, Hudspeth, Reeves, and Pecos Counties. Light, noneconomic, in Blacklands and panhandle areas. Heavier, but noneconomic, on grain sorghum in Knox, Wichita, and Wilbarger Counties. Ranged 200-300 on underside of lower leaf in Knox County. (Green et al.). OKLAHOMA - Ranged 15-100 per grain sorghum plant in Jackson County. Ranged 15-50 per leaf on occasional leaves in Payne County. Light on volunteer plants in some fields in panhandle areas. Ranged 10-50 per plant in Ottawa County. (Okla. Coop. Sur.). KANSAS - Noneconomic on sorghum in Neosho, Nemaha, Brown, Jackson, Atchison, Riley, Gray, Morris, Dickinson, Geary, and Clay Counties. (Simpson). COLORADO - Ranged 0-8 per plant on all sorghum and small grain in Arkansas Valley; noneconomic as of June 13. (Burchett).

PICKLEWORM (Diaphania nitidalis) - FLORIDA - Larvae severe on 90 percent of 200 squash plants at Brandon, Hillsborough County. (Simmons, June 5).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Building up in alfalfa in central counties. Heaviest, 1-4 per sweep. (U. Md., Ent. Dept.).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Adults 14 and nymphs 10 per 50 sweeps on Lycium at Torrington, Goshen County. (Lawson, Parshall). COLORADO - Adults per 100 sweeps of potatoes ranged 8-12 in Weld County; 0-3 in Arkansas Valley (8-10 in some fields in Pueblo County); and 0-2 in Morgan County, controls applied. (Burchett, Johnson). Adults per 100 sweeps of tomatoes ranged 0-2 in Arkansas Valley, averaged 6 in few fields in Otero County. (Burchett). TEXAS - Adults moderate on potatoes in Culberson County; heavy in Gaines County. Nymphs 10-50 per plant. (Neeb et al.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - One per sweep in one alfalfa field in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy on alfalfa in areas of Chaves, Eddy, and Dona Ana Counties. (Mathews).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - GEORGIA - Damage light to severe to corn in Houston County (Whelchel et al.); infestations scattered in south areas (Womack). ALABAMA - First-generation larvae light on older corn. Expect second-generation infestations to increase in northern areas. (McQueen). TENNESSEE - Larvae light to moderate on early planted corn in west area. Some fields heavily infested; expect little damage in early planted corn. Later generations may cause damage to late corn in this area. (Gordon et al.). MARYLAND - Heaviest infestations on early corn ranged 30-70 percent in Talbot, Dorchester, Wicomico, and Worcester Counties. First to third instars in all counties on Eastern Shore. First and second instars on corn in Prince Georges, Frederick, Carroll, and Montgomery Counties. (U. Md., Ent. Dept.). INDIANA - Larvae average 2 per stalk in corn 30+ inches in height in southern district; 55 percent of plants showed leaf damage. Because of lateness of corn there has been oviposition on corn unsuitably young. Adults, still frequent along northern roadsides, mostly disappeared in southern districts. (Meyer). MICHIGAN - Blacklight collections at many sites 100+ per night during week ending June 15; high count of 138 at Lenawee

County site June 8. Eggs hatched about June 10. (Newman). WISCONSIN - Spring-brood flight peaked; eggs 4 per 100 plants in more advanced areas of western Dane County. No leaf feeding detected. (Wis. Ins. Sur.). MINNESOTA - European corn borer moths emerging and ovipositing in southern half of State. Pupation of overwintering larvae 70 percent. Moth emergence trace to 60 percent. (Minn. Pest Rpt.). ILLINOIS - Egg laying slow in northern two-thirds of State. Egg laying heaviest on western side and almost nonexistent on eastern side. Egg laying decreased significantly north and east of Henderson and Warren Counties. (Ill. Ins. Rpt.). IOWA - Larvae 22 per 100 plants in corn with Sudan grass and 2 per 100 plants in cultivated corn at Ankeny. Leaf feeding on 40 percent of plants in tall plantings on June 18. Larvae 60 per 100 plants with 80 percent first instar and 20 percent second instar. Maximum of 11 per plant on all corn in Missouri River bottoms from Sioux City south. Aerial controls underway. (Iowa Ins. Sur.). MISSOURI - Infestations on 0-83 percent of plants checked in southeast area. Larvae ranged 0.5-4 per corn plant. Very high percent entered stalks. Field in southwest area showed 55 percent of plants infested with 2.6 (mostly third instar) larvae per plant. Boring into stalks. (Huggans). Counts in central area showed 6-56 percent of plants with leaf feeding. (Thomas). No egg masses observed in southern and central areas. (Munson). KANSAS - Infested 10-65 percent of corn in Jefferson County. No unhatched eggs found. (Wilde). Noneconomic on corn in Pottawatomie, Jackson, Nemaha, Atchison, and Brown Counties. (Simpson).

STALK BORER (Papaipema nebris) - MISSOURI - Infestations in marginal rows of corn in central area. One field 45 percent infested in marginal 8 rows. (Thomas). KANSAS - Light in border rows of all fields examined in Neosho County. (Brooks).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TENNESSEE - Light in early planted corn, little damage expected. Damage expected on late-planted corn. (Gordon et al.). ALABAMA - First-generation larvae in first to third instars in several fields of corn in Morgan County. Ranged 1-4 in 10 percent of stalks in 3-acre field in pretassel stage. (Rutledge et al.).

CORN ROOTWORMS (Diabrotica spp.) - MISSOURI - Last instars feeding on late corn in central area. (Thomas). MINNESOTA - Eggs hatched in southwest, south-central, and central districts. Counts low. (Minn. Pest Rpt.). INDIANA - First egg hatch of D. longicornis (northern corn rootworm) in Tippecanoe County on June 12. Second instars on June 16. (Gould).

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - Adults damaged 20-25 percent of crowns of young corn in 50-acre planting in Lee County. (Teague, Cooksey).

BANKS GRASS MITE (Oligonychus pratensis) - COLORADO - Appearing on corn in Arkansas Valley. Noneconomic as of June 13. (Burchett).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - VIRGINIA - Damage medium on early seeded wheat in Lancaster County. Damage up to 10 percent on several farms. (McSwain).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WISCONSIN - Increase noticeable. Averaged about 150 per 100 sweeps in Manitowoc, Calumet, and Sheboygan Counties. Averaged about 80 per 100 sweeps in Clark, Wood, and Marathon Counties. (Wis. Ins. Sur.).

TURF, PASTURES, RANGELAND

BANKS GRASS MITE (Oligonychus pratensis) - NEVADA - Heavy on 1,000 acres of crested wheatgrass near Lida, Esmeralda County. Reduced to subeconomic levels by rain and 4 inches of snow week of June 8. (Burris). Nymphs again increasing with hot, dry weather. Economic infestations could result again if this pattern continues. (Adams, Bechtel).

A SAWFLY (Dolerus collaris) - WASHINGTON - Mostly last instars averaged 10 per sweep in bluegrass seed fields not treated earlier near Rockford, Spokane County. (Johansen, Retan).

A GROUND PEARL (Margarodes meridionalis) - TEXAS - Moderate to heavy in isolated hybrid Bermuda grass lawns in El Paso County. (Wilson).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - VERMONT - Damage increased, 50 percent tip damage in some alfalfa; occasionally severe. Larvae ranged 10-12 per sweep at Shoreham and Ferrisburg, Addison County. (Nielsen). OHIO - Damage finished for 1970. New adults and eggs less than 10 per square foot. An ichneumon wasp, probably Bathyplectes curculionis, found in Ross, Fayette, Butler, Shelby, Tuscarawas, Wayne, and Erie Counties. Parasitism ranged 50 percent in Butler County to 1 percent in Erie County. (Flessel). TENNESSEE - H. postica adults and larvae caused light damage in west area. Increase in damage expected unless controls applied. (Gordon). INDIANA - Except some fields in southeast district, larvae very light in southern district, and damage trace. NORTH DAKOTA - Adults and larvae, 2 per 100 sweeps, in unused alfalfa field north of Mandan, Morton County. This is a new county record. (Brandvik).

WASHINGTON - Up to 100 H. postica larvae and 5 winter adults per sweep in 370 acres of alfalfa near Pullman, Whitman County, June 12. Larval damage severe. (Johansen). IDAHO - Percent of tips infested: 20 at Hansen, Cassia County, June 10; 25 at Kimberly, Twin Falls County, June 15 with first and second instars. (Sutherland). NEVADA - Larvae 4-6 per sweep in alfalfa seed fields in Kings River Valley, Humboldt County. (Lundahl, Peters). No larvae or adults on alfalfa in Fish Lake Valley, Esmeralda County. (Adams, Bechtel). UTAH - Damage increased in many localities. Damage conspicuous in various localities, alfalfa appearing gray. Larvae averaged 50 per 25 sweeps in treated fields, 50 per sweep in untreated fields in Cache County. Harvest underway after storm front passed. (Davis et al.). Damaging at Monticello, San Juan County (Knowlton), and in parts of Box Elder County (Roberts). WYOMING - Larvae ranged 0-30 per 10 sweeps with light damage on alfalfa in Goshen, Platte, Converse, and Niobrara Counties. (Lawson, Parshall). COLORADO - Larvae ranged 0-500 per 100 sweeps in eastern area. Ranged 500-900 per 100 sweeps and damage moderate to heavy in some first-cutting fields where controls not applied. Adults ranged 0-50 per 100 sweeps. (Burchett, Johnson).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Ranged 10-15 per sweep in alfalfa seed fields in Kings River Valley, Humboldt County. (Lundahl, Peters). Ranged 15-60 per sweep in Fish Lake Valley, Esmeralda County, alfalfa. (Adams, Bechtel). UTAH - Light to moderate in Cache County alfalfa. (Knowlton). ARIZONA - Counts of 200 per 100 sweeps of alfalfa in Cochise County. Ranged 30-120 per 100 sweeps in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy on alfalfa in various areas of Dona Ana County. Some fields show damage from this species and spotted alfalfa aphid. (Campbell). TEXAS - Pea aphid light to moderate on alfalfa in El Paso and Hudspeth Counties. Light on alfalfa at Barstow, Martin County. (Neeb, Green). COLORADO - Increased in eastern area; ranged 150-9,000 per 100 sweeps in Arkansas Valley, 250-5,000 per 100 sweeps in northeastern area. (Burchett, Johnson). WYOMING - Ranged 20-800 per 10 sweeps of alfalfa in Goshen, Platte, Converse, and Niobrara Counties. Heaviest counts in Platte County. (Lawson, Parshall). WISCONSIN - Ranged 2-60 per sweep of alfalfa in northeast. Winged forms about 50 percent of population. Some buildup noted in regrowth alfalfa. Parasitism and predation on increase and coupled with thunder showers could keep populations in check. (Wis. Ins. Sur.). TENNESSEE - Moderate in all fields surveyed in west area, little or no damage. (Gordon).

LYGUS BUGS (Lygus spp.) - NEVADA - Adults and nymphs averaged 6-8 per sweep in alfalfa seed fields in Kings River Valley, Humboldt County. (Lundahl, Peters). Mostly nymphs 6-16 per sweep on alfalfa in Fish Lake Valley, Esmeralda County. (Adams, Bechtel). ARIZONA - Counts of 350 per 100 sweeps of alfalfa in Cochise

County. Ranged 150-450 per 100 sweeps at Yuma, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Light to heavy on alfalfa in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - Range per 25 sweeps by county: Hudspeth 10-85, El Paso 4-35, and Ward 10-20. (Neeb, Green). WYOMING - Adults and nymphs ranged 5-30 (averaged 9) per 10 sweeps of alfalfa in Goshen, Platte, Converse, and Laramie Counties. (Lawson, Parshall). MICHIGAN - Counts per 100 sweeps of alfalfa by county as follows: Livingston 63, Wayne 70, Washtenaw 54, and Lenawee 71. Small increase. (Newman, June 15).

MEADOW SPITTLEBUG (Philaenus spumarius) - MARYLAND - Adults ranged 7-30 per sweep in most alfalfa in Frederick, Washington, and Carroll Counties. (U. Md., Ent. Dept.). IOWA - Adults averaged 1 per 10 sweeps of alfalfa in Polk County June 18, about average for appearance and level of infestation. (Iowa Ins. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Nymphs total about 80 percent of population in northeast; adults and nymphs ranged up to 60+ per 10 sweeps in most alfalfa. (Wis. Ins. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - COLORADO - Larvae increased, ranged 0-40 per 100 sweeps in eastern area. (Burchett, Johnson).

RED-BACKED CUTWORM (Euxoa ochrogaster) - IDAHO - Damaged alfalfa seed fields southeast of Hansen, Cassia County. Larvae up to 24 per square foot June 10 in about 1,000 acres. Damage spotty in fields. (Sutherland).

SOYBEANS

BLACK CUTWORM (Agrotis ipsilon) - SOUTH DAKOTA - Larvae severe in field near Egan, Moody County. (Kantack).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Heavy on young soybeans in Decatur County (Wheeler) and Tift County (Todd).

PEANUTS

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - GEORGIA - Adults increasing in peanut fields in south areas. (Morgan).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, weevils in 5 of 37 treated fields averaged 8 (maximum 125) per acre. Found in 2 of 19 untreated fields; averaged 8 (maximum 250) per acre. Punctured squares ranged 2.3-5.7 (averaged 3.9) percent in 3 treated fields; ranged 2-5 (averaged 3.7) percent in 6 untreated fields. (Cowan et al.). OKLAHOMA - Adults in wing traps at Mountain View and Snyder, Kiowa County, and at Blair, Jackson County. Heaviest at Snyder with 16 weevils in one trap. (Okla. Coop. Sur.). ARKANSAS - Occasional live weevil in fields. (Boyer et al.). Two taken June 10 on 45 pheromone-baited wing traps in Lafayette and Miller Counties. (Lamb et al.). MISSISSIPPI - Weevils averaged 0.8 per 100 row feet in 1 of 25 fields in delta counties. Negative on wing traps. Punctured squares averaged 0.5 (maximum 1.5) percent in 4 of 8 fields. (Pfrimmer et al.). Average infestations by county: Hinds 1 percent in 3 fields, Rankin 37 per acre in 18 fields, Attala 2 percent in 12 fields, Sharkey 2 percent in 7 fields, and Washington 1 per 200 row feet in 14 fields. (Sartor). TENNESSEE - Two adults noted feeding in terminal buds in Fayette County. (Gordon et al.). ALABAMA - Weevil emergence from winter hibernation still generally light, but higher than past several weeks. Damaging numbers appearing in some fields in south and central areas. Controls underway in some areas. (Pike et al.). GEORGIA - Infestations increased in south area; up to 60 percent punctured squares where no control applied (Womack); 2 adults from 4 wing traps, 165 weevils per acre in one field where few squares present on June 18 in Spalding County (Beckham). For Boll Weevil in Texas High Plains see page 432.

BOLLWORMS (Heliothis spp.) - TEXAS - In McLennan and Falls Counties, eggs averaged 1.7, larvae 0.1 per 100 terminals in 40 treated fields and eggs averaged 0.3, larvae 0.1 per 100 terminals in 26 untreated fields. Injured squares averaged 0.8 percent in 3 treated fields and 1.3 percent in 6 untreated fields. Eggs and/or larvae collected from native hosts; 54 previously collected larvae identified H. zea. Total to date on all hosts 291 H. zea and 27 H. virescens. (Cowan et al.). ARKANSAS - Highest egg and larval counts in Pulaski County. Average counts per 100 terminals: Eggs 1.5, larvae 1.0. Most egg and larval counts zero per 100 terminals in Lee, Woodruff, and Mississippi Counties. Highest count in these areas 2 eggs and 1 larva per 100 terminals. (Boyer et al.). MISSISSIPPI - Larvae averaged 0.5 per 100 row feet in 11 of 25 fields in delta counties. Eggs averaged 3.8 per 100 row feet in 22 of 25 fields. Much concern in area at this time. (Pfrimmer et al.). H. virescens and H. zea ovipositing in Sharkey, Washington, and Madison Counties. (Sartor). ALABAMA - Eggs and small larvae still on cotton throughout State, moth flights heavy. Larvae ranged 2-30 per 100 terminals in cotton from extreme south areas to extreme north areas. Controlled by predators and parasites. (McQueen). GEORGIA - Eggs ranged 0-19 and larvae up to 2 per 100 terminals in south areas (Womack); heavy in Tift and Burke Counties (Canerday).

TARNISHED PLANT BUG (Lygus lineolaris) - ALABAMA - Adults and nymphs on pinhead squares in Colbert, Madison, and Limestone Counties becoming heavy and alarming to growers; small squares beginning to drop. Controls considered but waiting in fear of causing decrease in beneficial insects. (McQueen). MISSISSIPPI - Heavy in Madison County. Moderate in Washington County. Light in Coahoma, Sharkey, and Rankin Counties. (Sartor). ARKANSAS - L. lineolaris predominant plant bug. Heaviest count of all species in Lee County, 22 (averaged 6.7) per 100 terminals. (Boyer et al.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - TEXAS - Increased in McLennan and Falls Counties. Ranged 0-55 (averaged 16.1) per 100 terminals in 40 treated fields, 5-62 (averaged 27.8) in 26 untreated fields. (Cowan et al.). ARKANSAS - Light in Pulaski County. (Boyer et al.).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - ALABAMA - This species and other spider mites damaging cotton along border of fields on several farms in Limestone, Madison, Talladega, and Morgan Counties. Some controls applied. (McQueen).

THRIPS - ALABAMA - Frankliniella fusca (tobacco thrips) and other thrips unusual and damaging in all late-planted cotton throughout north areas where preplant systemics not used. Controls applied in many fields. (McQueen). NEW MEXICO - Unspecified species medium to heavy on cotton in Eddy, Chaves, and Dona Ana Counties. Leaves on most plants show damage. (N.M. Coop. Rpt.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults ranged light to moderate; newly set fields show heaviest damage. Most fields growing out of earlier injury. Ranged 1-6 per plant in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.).

TOBACCO THRIPS (Frankliniella fusca) - VIRGINIA - Moderate on tobacco in some fields in Pittsylvania County. (Domnick, June 12).

SUGAR BEETS

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae appeared June 9 on sugar beets at Powell, Park County. (Burkhardt). Few larvae in sugar beet fields of Goshen County. Adults peaked June 7-8 at Torrington, Goshen County. (Parshall). COLORADO - Larvae ranged 0-30 per 100 sweeps in Otero, Bent, and Prowers Counties. Adults numerous in northeastern area, larvae appearing in few fields. Some controls applied. (Burchett, Johnson).

SPINACH LEAF MINER (Pegomya hyoscyami) - WYOMING - Larvae and eggs in sugar beet fields of Niobrara and Goshen Counties. Infested up to 0-60 (averaged 14) percent of leaves. (Lawson, Parshall). COLORADO - Larvae remain light in Boulder, Larimer, Weld, and Morgan Counties. (Johnson).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Adults peaked about June 5 in Big Horn and Park Counties. Larvae hatching June 15 in these counties. (Burkhardt). NORTH DAKOTA - Emergence 90-95 percent in Walsh and Pembina Counties. About half of flies moved into new fields. Eggs on 40 percent of plants in most fields. Egg masses ranged up to 2 per plant. (Kaatz).

A FLEA BEETLE (Systema taeniata) - COLORADO - Adults appearing at Berthoud, Larimer County, and Longmont, Boulder County. Ranged light to moderate, damage in spots in some fields. (Johnson).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - IDAHO - Adults active June 11 near Jerome, Jerome County. (Priest). WYOMING - Larvae heavy on nightshade at Torrington, Goshen County. (Lawson, Parshall). COLORADO - Remains light in Weld and Morgan Counties. Larvae appearing in some fields. Ranged 0-6 per plant in Weld County field, damage light. (Johnson).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - On peppers in most of Sussex County and potatoes in Kent County. (Burbutis, Kelsey).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Adults light in beans in Larimer, Weld, Boulder, and Morgan Counties. (Johnson).

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Variable in peas; generally more numerous than in many previous years. Counts as high as 250 per sweep on peas already podded, and peas only 1 inch high infested with up to 5 per linear foot. Many winged forms indicative of migrants from alfalfa. (Wis. Ins. Sur.).

THRIPS - MARYLAND - Controls required in young emerging beans in about 80 acres in Frederick and Baltimore Counties. (U. Md., Ent. Dept.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Damaging numbers appeared earlier than usual on Eastern Shore. (Hofmaster, June 10).

GENERAL VEGETABLES

ONION MAGGOT (Hylemya antiqua) - CALIFORNIA - Larvae and pupae in 40 acres of onions at Salinas, Monterey County. Expect heavy loss. (Cal. Coop. Rpt.). COLORADO - Larval damage trace at Greeley and Fort Lupton in Weld County. (Urano). OHIO - Infested developing bulbs of untreated onions in Huron County. Destroyed about half of crop. (Sleesman).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 0-8 per plant on seeded onions in Arkansas Valley and increasing. Ranged 0-20 per plant on transplant onions in eastern area. (Burchett, Johnson).

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) - MARYLAND - Adults ranged 2-3 per plant in several fields (150 acres) in Wicomico and Worcester Counties. Populations heavier than at this time in 1969. Second generation should be moderate to heavy with possible tuber injury in July. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Laspeyresia pomonella*) - NEW YORK - First emerged May 22 in cages at Geneva, Ontario County. Emergence increased steadily until June 8. First eggs June 2 but probably 2-3 days old. Entries June 10 but appeared 2 days old. (N.Y. Wkly. Rpt.). NEW JERSEY - Caught 5 moths June 9-16 in baited jar in Gloucester County. (Ins.-Dis. Newsltr.). OHIO - Damage on unsprayed apple trees in Fairfield County orchard heavier than expected. Many entries and attempted entries on young fruit. (Roach, Holdsworth). MICHIGAN - Adults plentiful in abandoned orchards. Many eggs ready to hatch. If present temperature and humidity trends persist, first brood will be heavier with accelerated development and higher survival than in average or cool season. (Thompson, June 15).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - COLORADO - Second-brood adults peaked June 3 with 2-3 per trap at Palisade and Vineland. Early season chemical and biological controls on peach apparently effective. (Sisson, Anderson). OHIO - Infested terminals of several twigs on most peach trees in Fairfield County orchard. (Roach, Holdsworth). NEW JERSEY - Collected 16 adults June 9-16 in baited jar in Gloucester County. (Ins.-Dis. Newsltr.).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - COLORADO - Damaged crab apple and apple at Denver, Denver County; Longmont, Boulder County; Loveland and Fort Collins, Larimer County. Heaviest in several years with first-generation moths appearing. Controls recommended. (Thatcher, Johnson).

PLUM CURCULIO (*Conotrachelus nenuphar*) - FLORIDA - Larvae infested high percentage of plums at locality in Pasco County. (Lowery). GEORGIA - First-generation adults emerged from unsprayed peaches and plums in Peach County; up to 16 from single tree. (Payne, June 13). OHIO - Oviposition scars more numerous than expected in Fairfield County orchard. (Roach, Holdsworth). WISCONSIN - Adults on unsprayed trees in southern counties. Scars 2-4 per fruit on 80 percent of apples at northern Dane County site. (Wis. Ins. Sur.).

PEAR PSYLLA (*Psylla pyricola*) - NEW YORK - Resistance continuing problem in east area. Controls difficult in Hudson Valley. (N.Y. Wkly. Rpt., June 15).

SAN JOSE SCALE (*Quadraspidiotus perniciosus*) - IDAHO - Heavy on peach June 12 at Gooding, Gooding County. (Koester).

APHIDS - NEW YORK - Building up in some orchards to point where special materials applied for control in Hudson Valley. (N.Y. Wkly. Rpt., June 15). OHIO - Early summer generations of *Eriosoma lanigerum* (woolly apple aphid) established in old pruning scars on several trees in Fairfield County orchard. (Roach, Holdsworth). UTAH - *Myzus cerasi* (black cherry aphid) still causing sticky foliage on sweet cherry in some Box Elder County home orchards (Knowlton), and at Bountiful, Davis County (Roberts).

PERIODICAL CICADA (*Magicicada septendecim*) - VIRGINIA - One nymph collected in Lancaster County. Determined by W.A. Allen. (McSwain, June 15).

TARNISHED PLANT BUG (*Lygus lineolaris*) - NEW YORK - Injury on apple and pears heavier than usual in Hudson Valley area. (N.Y. Wkly. Rpt., June 15).

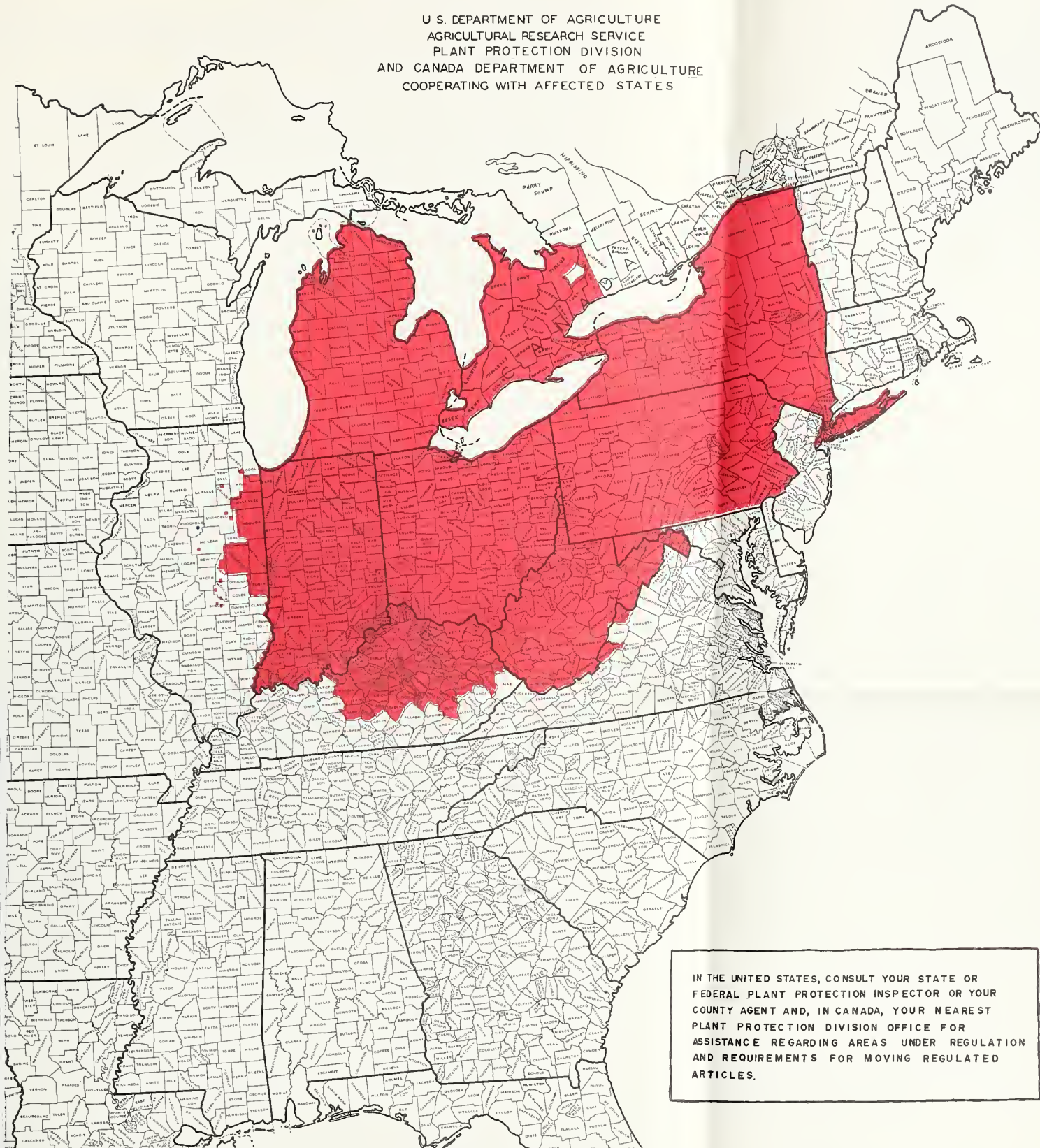
BROWN STINK BUG (*Euschistus servus*) - GEORGIA - Heavy on apples in Peach County. (Payne, Yonce, June 13).

TEPHRITID FLIES (*Rhagoletis* spp.) - MICHIGAN - *R. cingulata* (cherry fruit fly) adults numerous June 8 in orchard near Stevensville, Berrien County. (Thompson). NEW YORK - First emergence of *R. pomonella* (apple maggot) for season June 10 at Highland (3 females), Ulster County, and June 15 at Geneva (1 female), Ontario County. (N.Y. Wkly. Rpt.).

CEREAL LEAF BEETLE

COOPERATIVE FEDERAL, STATE, AND CANADIAN QUARANTINES

U. S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL RESEARCH SERVICE
 PLANT PROTECTION DIVISION
 AND CANADA DEPARTMENT OF AGRICULTURE
 COOPERATING WITH AFFECTED STATES



IN THE UNITED STATES, CONSULT YOUR STATE OR FEDERAL PLANT PROTECTION INSPECTOR OR YOUR COUNTY AGENT AND, IN CANADA, YOUR NEAREST PLANT PROTECTION DIVISION OFFICE FOR ASSISTANCE REGARDING AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED,
 COUNTIES PARTIALLY COLORED ARE PARTIALLY REGULATED.

STATE, FEDERAL, AND CANADIAN REGULATIONS.

OVERALL ERADICATIVE TREATMENTS MADE, NO QUARANTINE REGULATIONS NECESSARY.

RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM RED INTO OR THROUGH WHITE OR BLUE.

SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES.

REVISED MAY 11, 1970

REGULATED ARTICLES AND THEIR CERTIFICATION PERIODS ARE AS FOLLOWS:

Crop or Article Certification Period

Small Grains such as Barley, Oats, and Wheat (1)	June 1-November 30
Corn (Shelled corn is NOT regulated) Fresh Market (sweet corn) Ear Corn, other than sweet corn	Year-round August 1-March 31
Grass and Forage Seed (1)	Year-round
Hay (except marsh hay) (2)	May 1-January 15
Straw and Marsh Hay	July 1-February 28
Sod	Year-round
Used Harvesting Machinery	Year-round
Fodder and Plant Litter	Year-round
Soybeans (1), (3)	September 1-March 15

(1) Small grains (except oats and barley), grass and forage seed, and soybeans cleaned to meet State or Canadian seed sales requirements are exempt from certification.

(2) Pelletized hay is exempt from certification and treatment requirements.

(3) Soybeans if transported in covered vehicles and moved to designated plants are exempt from certification.

ROPEAN RED MITE (Panonychus ulmi) - GEORGIA - Heavy on peach foliage and fruit Peach and Houston Counties. (Yonce, June 12). NEW YORK - Appeared under control in orchards visited in Hudson Valley. (N.Y. Wkly. Rpt., June 15).

PLE RUST MITE (Aculus schlechtendali) - NEW YORK - Increasing rapidly in east ea. First summer generation producing eggs and migrating to new leaf tissue in lamplain Valley. (N.Y. Wkly. Rpt., June 15).

ECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Very light first-generation amage on young pecan nutlets in Ward County. Larvae light to medium near Cameron, lam County. (Neeb et al.). OKLAHOMA - Very heavy larval damage to small nuts Cotton County. Damage ranged 10-15 percent in Garvin County. (Okla. Coop. r.). NEW MEXICO - Light to medium on pecan trees at Carlsbad, Eddy County. (Mathews).

ALL WEBWORM (Hyphantria cunea) - TEXAS - Light to medium on pecan trees in adalupe, Caldwell, Comal, Gonzales, and Hays Counties. Observed in Brazos and illespie Counties. (Massey et al.).

PHIDS - TEXAS - Monellia sp. heavy on Jefferson County pecans. (Weaver). Monellia costalis (black-margined aphid) light to heavy on pecan trees in El Paso and Ward Counties. (Green et al.). Myzocallis caryaefoliae (black pecan aphid) light to moderate on pecan trees in El Paso, Ward, and Pecos Counties. (Van leave et al.). NEW MEXICO - M. costalis heavy on pecan trees in Dona Ana and tero Counties where no controls applied. Honeydew heavy. (Riddle, Campbell).

CITRUS

itrus Insect Situation in Florida - Mid-June - CITRUS RUST MITE (Phyllocoptruta leivora) infested 55 (norm 45) percent of groves; economic in 35 (norm 26) percent. Population above normal and now at moderate level. Again took an upward trend which is expected to continue through July. Highest districts west, central, outh, and east. CITRUS RED MITE (Panonychus citri) in 69 (norm 63) percent of groves; economic in 41 (norm 38) percent. Increased sharply and now above normal and in high range. Further increase expected, followed by decrease at mid-July. Highest districts north, central, and east. TEXAS CITRUS MITE (Eutetranychus banksi) in 46 (norm 69) percent of groves; economic in 26 (norm 47) percent. Still much below normal and in moderate range. Rapid increase expected through June. Some heavy infestations predicted in all districts. Highest district east. GLOVER SCALE (Lepidosaphes gloverii) in 89 (norm 86) percent of groves; economic in 18 (norm 31) percent. Near normal. Will continue in high range through June, then decrease. Highest districts south and east. PURPLE SCALE (L. beckii) in 70 (norm 80) percent of groves; economic in 4 (norm 11) percent. YELLOW SCALE (Aonidiella citrina) in 63 (norm 68) percent of groves; economic in 8 (norm 11) percent. CHAFF SCALE (Parlatoria pergandii) in 45 (norm 70) percent of groves; economic in 1 (norm 15) percent. These 3 scales expected to continue near current low to moderate level. Few heavy infestations will occur in scattered areas. BLACK SCALE (Saissetia oleae) in 42 (norm 69) percent of groves; economic in 25 (norm 49) percent. Still below normal and low in most districts but will increase rapidly through July. Highest district east. An ARMORED SCALE (Unaspis citri) in 25 percent of groves; moderate or heavy in 14 percent. Higher than in any prior month. Will continue near present level. WHITEFLIES in 82 percent of groves; economic in 48 percent. Larval forms more abundant than in any prior month. Adult forms much above normal. Adults and eggs will increase. Highest districts east, north, west, and south. MEALYBUGS in 67 percent of groves; economic in 15 percent. Near normal and at moderate level. Will increase rapidly and enter high range before mid-July, then decrease. Highest districts east and west. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Building up. Heavy, treatment needed in some Yuma County groves. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Heavy on oranges and grapefruit, might require summer control. Treatments continued in nurseries and on small trees. (Ariz. Coop. Sur.).

A LEAFHOPPER (Homalodisca lacerta) - ARIZONA - Ranged 10-15 per citrus shoot at Yuma, Yuma County. Determined by M. Nielson, collected by M. Larson. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

FIG PSYLLID (Homotoma ficus) - CALIFORNIA - Nymphs and pupae medium on fig trees at Pleasant Hill, Contra Costa County. (Cal. Coop. Rpt.).

SMALL FRUITS

ROSE CHAFER (Macrodactylus subspinosus) - MICHIGAN - Adults fed on grape foliage in every fruit growing region. (Thompson, June 15).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - First to third instars feeding on stems, flower buds, and young berries of grape clusters. (Thompson, June 15).

BLUEBERRY MAGGOT (Rhagoletis mendax) - NEW JERSEY - First caught June 12. Many trapped by June 14 in normally heavily infested areas. Egg laying should begin about June 24. (Ins.-Dis. Newsltr.).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - CALIFORNIA - One to many thrips per berry on bushberries in Fresno County causing serious problem in marketing fresh berries. Moved onto ripening berries in home berry patches in such numbers that berries not useable. (Cal. Coop. Sur.).

ORNAMENTALS

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - OHIO - Adult emergence underway in Taxus planting in Columbiana County. Mostly adults heavy on block of T. baccata repandens in Geauga County. (Roach). NEW HAMPSHIRE - Hundreds of larvae and adults injuring plants in Hillsborough County. (Conklin).

A GEOMETRID MOTH (Coryphista meadii) - NEVADA - Larvae medium to heavy; some heavy defoliation to barberry and Oregon-grape at Reno and Sparks, Washoe County. (Nev. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - TEXAS - Medium; infested ornamentals at Edna, Jackson County. (Wilson).

BAGWORM (Thyridopteryx ephemeraeformis) - TEXAS - Light to moderate on evergreens in Midland County. Heavy on evergreens at College Station, Brazos County. (Neeb, Green).

A WHITEFLY (Tetraleurodes errans) - IDAHO - Adult emergence heavy June 12 on Oregon-grape at Twin Falls, Twin Falls County. (Barr, Sutherland).

FOREST AND SHADE TREES

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WISCONSIN - Pupation underway at Chilton, Calumet County. Infested about 7 terminals on one mugho pine. (Wis. Ins. Sur.).

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW MEXICO - Some damage on most of spruce checked at Santa Fe and Glorieta, Santa Fe County. (Heninger). MINNESOTA - In fifth and sixth instars in north area. Pupae on nursery planting of Colorado spruce near Little Falls, Morrison County. (Minn. Pest Rpt.). INDIANA - Specimens collected in Lake County in May determined by D.M. Weisman. Previously reported only in 1922 and 1928. (Schuder, Clark).

BALSAM TWIG APHID (Mindarus abietinus) - WASHINGTON - Heavy on grand fir June 10 at Puyallup, Pierce County. Apterous adults and new nymphs abundant on new growth, sticking and matting together new needles. (Barstow).

PINE SPITTLEBUG (Aphrophora parallela) - WISCONSIN - Light on Scotch pine and European larch at Dane County site where none observed in previous years. Nymphal development complete as of June 17 at Middleton, Dane County; adults expected to disperse to new locations within 7 days. (Wis. Ins. Sur.).

LARGE ASPEN TORTRIX (Choristoneura conflictana) - MINNESOTA - Defoliation heavy on aspen in many areas of St. Louis, Lake, Cook, and Carlton Counties. Pupation about 90 percent. (Minn. Pest Rpt.).

SATIN MOTH (Stilpnotia salicis) - IDAHO - Third and fourth instars defoliated several hundred golden willow and silver-leaved poplars at Cascade, Valley County. Damage per tree double that of year ago. Majority of city trees require control. (Greenwell, Portman).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Moth flights heavy in San Francisco Bay area. Oak foliage severely damaged. Currently at Stockton, San Joaquin County. (Cal. Coop. Rpt.).

A NOCTUID MOTH (Enargia decolor) - MINNESOTA - Defoliation becoming apparent on all sizes of aspen in several locations in north Aitkin and southeast Itasca Counties. Larvae mostly in third instar. (Minn. Pest Rpt.).

NOTODONTID MOTHS - TEXAS - Early instars of Schizura ipomeae skeletonized Gregg County dogwoods. (Coster). NEW HAMPSHIRE - Trapped 2,139 Heterocampa guttivitta (saddled prominent) adults June 13-15 in blacklight trap at Ossipee, Carroll County. Also collected 148 adults of Cratichneumon sublatius (an ichneumon wasp), a parasite, June 10-15. (Blickle).

FALL WEBWORM (Hyphantria cunea) - OHIO - Moderate in Scioto Trail State Forest. Second and third instars on redbud, elm, and dogwood. (Ehlers). INDIANA - Hatching in Shelby County. (Clark).

OAK SKELETONIZER (Bucculatrix ainliella) - NEW HAMPSHIRE - Eggs and newly hatched larvae heavy on red oak leaves in Rockingham County. (Conklin).

ELM LEAF BEETLE (Pyrrhalta luteola) - ALABAMA - Second-generation larvae caused much defoliation of elms along streets and on lawns in Colbert, Lawrence, Morgan, Madison, and other north counties. Larvae fewer in east-central area and somewhat lighter than in past several years. (Somerville et al.). TENNESSEE - Larvae feeding on elms in Knox County. (Williams). SOUTH DAKOTA - Damaging larval numbers in elm grove in Charles Mix County. This is a new county record. (Kantack, Hegdahl). OKLAHOMA - First-generation adults emerged in many areas. Egg laying expected soon. (Okla. Coop. Sur.). TEXAS - Medium and widespread on Kent County elms. (Geeslin). NEW MEXICO - Heavy on elms at north Las Cruces, Dona Ana County. (Campbell). UTAH - Appeared on elms at Salt Lake and Holladay, Salt Lake County. (Knowlton). WASHINGTON - Heavy egg deposits by overwintered adults June 8 throughout Grant County. First instars on elm June 15 at Seattle, King County. (Barstow, Hunter).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - NORTH DAKOTA - Adults collected in window trap near Mandan, Morton County. This is a new county record. (Brandvik).

COTTONWOOD BORER (Plectrodera scalator) - NEW MEXICO - Damaged cottonwood trees at Carlsbad, Eddy County. (Marek).

PERIODICAL CICADA (Magicicada septendecim) - MARYLAND - Heavy natural mortality of males and females in Prince Georges, Montgomery, Baltimore, and Harford Counties. Infestations in Allegany and Washington Counties continue heavy but expected to decline rapidly within next week. (U. Md., Ent. Dept.).

BIRCH LEAF MINER (Fenusa pusilla) - WISCONSIN - Damage severe at some sites; most noticeable in Brown, Calumet, Winnebago, Waushara, Dodge, Walworth, Eau Claire, and Wood Counties. First-generation larval development and damage almost finished. (Wis. Ins. Sur.).

EUROPEAN ELM SCALE (Gossyparia spuria) - CALIFORNIA - Heavy on elms at Grand Terrace, San Bernardino County. (Cal. Coop. Rpt.). NEW MEXICO - Heavy on American elm at Santa Fe, Santa Fe County. Honeydew heavy. (Heninger).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - WASHINGTON - Severe on soft maples, covered 90 percent of branches at Othello, Adams County. (Hunter).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 3 cases reported in U.S. June 14-20 as follows: TEXAS - Val Verde 2; ARIZONA - Yavapai 1. Total of 32 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 22, Chihuahua 7, Nuevo Leon 1, Tamaulipas 2. Total of 7 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 40,468,000; New Mexico 1,120,000; Arizona 10,010,000; Mexico 109,420,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - MARYLAND - Adults 15-60 per head in Frederick and Montgomery Counties. (U. Md., Ent. Dept.). FLORIDA - Adults averaged 825 per beef steer at Bryant, Palm Beach County. (Janes). MISSISSIPPI - Average per head by county: Monroe 175 on 60 head, Attala 25 on 300, Montgomery 175 on 140, and Yazoo 135 on 50. (Sartor). TEXAS - Heavy in Jackson and Stephens Counties. Moderate on cattle in Wilbarger, Wichita, Kinney, and Crockett Counties. (Boring et al.). OKLAHOMA - Averaged 500 per head on cattle in Payne County. Heavy in Cotton County; moderate in Osage County. (Okla. Coop. Sur.). MISSOURI - Ranged 2-100 (averaged 29.1) and 50-1,100 (averaged 283.6) per head on 2 herds in Boone County. (Munson). IOWA - Averaged 80 per head June 9 on Angus and Hereford cattle in Guthrie County; no back rubbers. Ranged 100-200 per head on pasture cattle with no back rubbers. (Iowa Ins. Inf.). WYOMING - Ranged 0-30 (averaged 10) per head on 2 herds in Niobrara and Converse Counties. (Lawson, Parshall). WISCONSIN - Moderately annoyed cattle in Calumet County. Nonexistent or slight elsewhere. (Wis. Ins. Sur.).

FACE FLY (Musca autumnalis) - OKLAHOMA - Three adults in herd of 25 cattle in Cherokee County; same herd infested last year. (Okla. Coop. Sur.). MISSOURI - Ranged 0-35 (averaged 9.2) and 0-30 (averaged 6.7) per animal on 2 herds in Boone County. (Munson). IOWA - Averaged 3 per head June 9; no back rubbers. Averaged 3-5 per face on unprotected pasture cattle in central area. (Iowa Ins. Inf.). WISCONSIN - Moderately annoyed cattle in Calumet County. Nonexistent or slight elsewhere. (Wis. Ins. Sur.). MARYLAND - Moderate to heavy, 10-40 per head, in Howard, Frederick, Baltimore, and Montgomery Counties. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - FLORIDA - Very abundant around supplemental feeding areas in pastures and in holding pens at Bryant, Palm Beach County. More abundant than usual in Everglades during first half of June. (Janes). OKLAHOMA - Up to 50 per Scudder grid in untreated barns in Payne County. Moderate around Bryan County homes. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - GEORGIA - Annoyed De Kalb County horses. (Snoddy, Nolan, June 13). MARYLAND - Averaged 17 per head on 48 Holsteins near Woodboro, Frederick County. (U. Md., Ent. Dept.). WISCONSIN - Moderately annoyed cattle in Rusk, Polk, and Sauk Counties. Little or no problem elsewhere. (Wis. Ins. Sur.).

MOSQUITOES - TEXAS - Psorophora ciliata first observed May 4 in Jefferson County. P. confinnis common to numerous. Aedes sollicitans annoying at Sabine Pass May 7 and at Port Arthur. A. vexans larvae very numerous in Beaumont. Culex pipiens quinquefasciatus larvae very numerous in all polluted water. C. salinarius annoying, especially at Port Arthur. Coquillettidia perturbans adults numerous at Port Arthur during late May. Anopheles crucians in larger numbers at Port Arthur. (Jefferson County Mosq. Contr. Dis., May). OKLAHOMA - Psorophora spp. adults common, biting people in Payne County. (Okla. Coop. Sur.). ARKANSAS - P. confinnis heavy locally in Lonoke County, lighting counts as high as 60 per minute. Moderate in Lawrence County. Anopheles spp. light in Lonoke and Lawrence Counties. Culex spp. locally heavy in Phillips County and light in Lawrence County. (Meisch). IOWA - Mostly Aedes vexans appeared again at Ames, Story County, evening of June 12, seven days after aerial treatment. Bite counts were 1 in 15 minutes compared with 3-5 per minute before spraying. (Iowa Ins. Inf.). MINNESOTA - Light traps at Minneapolis and St. Paul trapped 14,171 females and 42,511 males week ending June 12. Large number of males indicates new brood. A. vexans accounted for 87 percent of total. A. vexans 111 of 142 females in evening bite collections, and 2,821 of 4,247 in daytime collections. A. trivittatus, A. cinereus, and A. stimulans other major species. Brood which emerged June 5-8 showing signs of stabilizing flight. Trap catches peaked June 15 and 17, should decline next week. Rains June 15-16 resulted in small brood which will begin to emerge June 22. This brood will not add significantly to present population. (Minn. Pest Rpt.). WISCONSIN - Heavy statewide except at some well-drained upland sites far from breeding areas. Biting still very intense in wooded lowlands and in many farm fields in east-central counties. Biting intense all day at most wooded sites and between 8:30 p.m. and 9:30 p.m. in residential areas. In west Dane County woodlands Aedes sticticus comprised about 70 percent and A. trivittatus 30 percent of biting populations. Severely annoyed cattle in Sauk, Richland, Calumet, Clark, Wood, Iowa, Outagamie, and Columbia Counties, and moderately in Oconto, Rusk, and Polk Counties. (Wis. Ins. Sur.).

HORSE FLIES - OKLAHOMA - Tabanus spp. 3-4 per head in favorable areas in Payne County. T. lineola (striped horse fly), T. abactor, T. mularis, and T. atratus (black horse fly) common. T. trimaculatus active and annoying people in McCurtain County. (Okla. Coop. Sur.). WISCONSIN - Numerous in localized areas. (Wis. Ins. Sur.). VERMONT - T. similis annoying cattle. Hybomitra lasiophthalma very abundant. (Nielsen, June 18).

DEER FLIES - MINNESOTA - Chrysops sp. numerous in hilly country in southeast area. (Minn. Pest Rpt.). WISCONSIN - Bothersome in Fond du Lac and Adams Counties. Moderately annoyed people and livestock in localized areas statewide. (Wis. Ins. Sur.).

BITING MIDGES - CALIFORNIA - Leptoconops torrens annoying at Sacramento, Sacramento County, and at West Sacramento, Davis, and Woodland in Yolo County. (Cal. Coop. Rpt.). OKLAHOMA - Culicoides obsoletus annoying in wooded areas in Cherokee County. (Okla. Coop. Sur.).

A LOUSE FLY (Lipoptena mazamae) - OKLAHOMA - Winged adults common in areas frequented by deer in Cherokee County. (Okla. Coop. Sur.).

COMMON CATTLE GRUB (Hypoderma lineatum) - TEXAS - Adult activity decreased throughout Trans-Pecos area. (Neeb).

ASSASSIN BUGS (Triatoma spp.) - ARIZONA - T. protracta (western bloodsucking conenose) light; moving into homes in foothills and Sahaurita in Pima County. (Ariz. Coop. Sur.). OKLAHOMA - T. sanguisuga (bloodsucking conenose) in several homes in Canadian County. (Okla. Coop. Sur.).

CHIGGER MITES (Eutrombicula spp.) - OKLAHOMA - Heavy in south area from McCurtain County to Cotton County. (Okla. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Averaged about 1,000 per head on Cherokee County cattle. Very heavy on young deer. Adults declining, nymphs still heavy, and larvae light. Light on Choctaw County cattle. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - ARIZONA - Averaged 50 per 100 sweeps of alfalfa throughout Cochise County. (Ariz. Coop. Sur.). WYOMING - Adults averaged 4 per 10 sweeps of alfalfa in Goshen, Platte, Niobrara, and Converse Counties. (Lawson, Parshall).

A EULOPHID WASP (Tetrastichus julis) - MICHIGAN - This larval parasite of cereal leaf beetle recovered in Berrien and Cass Counties where liberations made in 1969. (Maltby, June 15).

AN ENCYRTID WASP (Trechmites insidiosus) - UTAH - This parasite of pear psylla released in Ogden, Weber County, pear orchards. (Davis).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Catches increased on winged traps below Caprock and along edge of Caprock in Floyd and Dickens Counties. Overwintered weevils on April-planted cotton in Kent County. (Clymer, Rummel). For Boll Weevil in other areas see page 423.

CEREAL LEAF BEETLE (Oulema melanopus) - ILLINOIS - Larvae light on oats on farms for new county records. All determined by R.E. White. Collected at Oakland, Coles County, by B.L. Bradford June 11. At Martinsville, Clark County, by M. McCoy June 12. At Gibson City, Ford County, by M. Morano June 15. At Mechanicsburg, Sangamon County, by R.D. Lovejoy June 15. (PPD). MICHIGAN - Control operations almost completed. Very few reports of failure but reports of wheat damage increasing in scattered localities. New adults will emerge soon. Numbers high enough this year to injure some corn. (Ruppel, June 15). INDIANA - Larvae primarily in third and fourth instars at New Carlisle, St. Joseph County; averaged 1-2 per stem. (Shade). OHIO - Larval feeding usually completed by this time but small larvae observed in several oatfields in south area. (Treece).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Treatments underway at Clovis, Fresno County; 3 light infestations found June 11. Only active infestations in north area. (Cal. Coop. Rpt.).

GRASS BUGS - IDAHO - Labops spp. adults up to 50 per sweep in quackgrass, Newport bluegrass field margin, Newport grass pasture, and Merion bluegrass seed fields in Valley County. This population 99 percent nymphs 5 days ago. Migration into Merion bluegrass seed field prevented to date by border chemical treatment June 17. (Greenwell, Portman). UTAH - L. hesperius and Irbisia spp. damage usually severe on range grasses in Garfield and Kane Counties due to extremely

dry winter and early spring. (Lindsay). WYOMING - Irbisia sp. infested 40 acres of intermediate wheatgrass in Crook County. (Spackman). NEBRASKA - L. hesperius surveys June 1-5 in panhandle counties indicated 6-3,000 per 100 sweeps. Heaviest in crested wheatgrass. Counts of 300+ showed damage; thicker stands of grass had more damage and higher numbers of Labops spp. (Bell). SOUTH DAKOTA - Labops spp. in following counties as of June 18: Shannon, Fall River, Bennett, and Todd; heavy mostly in road ditches. Light to trace mostly in crested wheatgrass, some on downy brome and western wheatgrass, in Butte, Meade, Pennington, Custer, Haakon, Stanley, and Hughes Counties. Heaviest, 42 per sweep, in Shannon County at junction of U.S. Highway 18 and Wounded Knee Road, east of Pine Ridge. Counts of 20-25 per sweep common along roadsides where crested wheatgrass lush. Adults 15-18 per sweep on roadsides, 5 per sweep at field edges, and scarce 40 rods into field near Pine Ridge. (Zimmerman et al.).

GRASSHOPPERS - NEW MEXICO - Heavy in Tucumcari area in Quay County. (Durkin). KANSAS - First and second instars 75-150 per 50 sweeps of most alfalfa and sweetclover in Jackson, Atchison, Brown, and Nemaha Counties. Some light feeding damage. (Iselin). IOWA - Mostly Melanoplus femurrubrum late first and second instar averaged 2-3 per square yard in mixed forage legume plantings in Polk County June 18. (Iowa Ins. Inf.). NORTH DAKOTA - Cropland species averaged 2-3 per square yard in margins and less than 1 per square yard in fields in Cass, Richland, and Ransom Counties. Ranged 5-10 per square yard in some alfalfa fields and 60-70 per square yard in 1 red clover field. M. bivittatus and M. sanguinipes dominant; mostly first and second instars. Grasshoppers averaged 2 per square yard in sandhills of Richland and Ransom Counties. M. sanguinipes dominant. Hatch incomplete. (Grasser). Second to fourth instars of M. sanguinipes and M. bivittatus defoliated 25 percent of alfalfa field in south Burleigh County. Nymphs up to 40 per square yard. (Brandvik). MINNESOTA - M. bivittatus hatched in southern two-thirds of State. Populations spotty. Counts of 2 per square yard in 2 Rock County fields. Counts of 5 per square yard in north Kandiyohi County, with margin counts as high as 54 per square yard in 1 field. Some M. femurrubrum hatch in light soil areas but most eggs late eyespot to segmented. INDIANA - Early instars locally abundant in all southern districts on roadsides, and occasionally on alfalfa and other cultivated crops. (Meyer).

GYPSY MOTH (Porthetria dispar) - Defoliated oaks in woods in Colts Neck Township, Monmouth County, NEW JERSEY, and migrated into sweet corn field. As of June 12, much injury on lower leaves of corn in one field. Also infested orchard grass and weeds. (Ins.-Dis. Newsltr.). Defoliation expected to be heavy on 100,000 acres throughout northern and central New Jersey in 1970; more than twice acreage defoliated in 1969. Defoliation on estimated 100,000 acres expected on Long Island and in Orange, Richland, Sullivan and Ulster Counties, NEW YORK. In eastern PENNSYLVANIA, approximately 20,000 acres expected to be 70 percent defoliated and 5,000 acres completely defoliated. These areas not contiguous, but found in pockets throughout eastern part of State. (PPD).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Light in potted citrus in nursery at Naples, Collier County, for a new county record. Collected by J.H. Brown and R.O. Akins June 11. Determined by V.H. Owens; confirmed by D.R. Smith. (PPD).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - First adult of season in Pulaski County June 9. (Francis). First adult of season on newly set tobacco June 13 in Pittsylvania County. (Dominick). Adults infested grapes and ornamentals in Amelia and Montgomery Counties. (Allen, Roberts). MARYLAND - First adult activity in south area June 15 and on Eastern Shore June 16 in Somerset and Worcester Counties. (U. Md., Ent. Dept.).

MORMON CRICKET (Anabrus simplex) - NEVADA - Adults light and scattered in Humboldt Range and Seven Troughs area, Pershing County, June 8-12. (Burnett).

OBSCURE SCALE (Melanaspis obscura) - CALIFORNIA - Second treatment applied to 4 oaks in Capitol Park at Sacramento, Sacramento County. A persistent infestation of several years. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - Sterile moth releases June 12-18. CALIFORNIA - Coachella Valley 4,513,500, total to date 50,492,250; Kern County 1,200,000, total to date 11,171,700. ARIZONA - Redington, Pima County, 67,500; total to date 517,300. Five native moths trapped at Redington, one in release field, four in trapline to north and south. During June 10-16, 286 rosetted blooms found in Coachella. (PPD). NEW MEXICO - Trapped 10 adults in 10 hexalure traps at Carlsbad, Eddy County, and 7 adults in 6 hexalure traps in south Dona Ana County. (N.M. Coop. Rpt.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Hatch continues in Union, Harding, and Colfax Counties. Hatch heavy June 5-9 in Lincoln County. Ranchers anticipate controls. (N.M. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - TENNESSEE - First adult of season in Shelby County June 9. (PPD).

HAWAII INSECT REPORT

General Vegetables - LEAF MINER FLIES (Liriomyza spp.) and GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) still generally medium to heavy on snap beans and watermelon at Waianae and Waimanalo, Oahu, despite regular spray programs. Light on snap beans at Haiku, Maui; no sprays made past month. CARMINE SPIDER MITE (Tetranychus cinnabarinus) very light on eggplant at Waikapu, Maui. Medium on eggplant, snap beans, and watermelon at Waimanalo and Waianae. (Kawamura).

Ornamentals - HAWAIIAN THRIPS (Taeniothrips hawaiiensis) nymphs and adults heavy, distorted many plumeria blossoms in North and South Kona, Hawaii. (Hoshioka).

Shade Trees - All stages of a PLATASPID BUG (Coptosoma xanthogramma) medium on terminals of several wiliwili trees (Erythrina sp.) at Kaneohe, Oahu. (Kawamura).

Miscellaneous Insects - Adults of an ANTHOMYIID FLY (Atherigona orientalis) heavy in houses at Lanai City, Lanai. Apparently a scavenger, breeding in rotting fruits and vegetable matter. (Miyahira). Many reports of loud stridulations at night due to a LONGHORN GRASSHOPPER (Euconocephalus nasutus) at Waipahu and Kaneohe, Oahu. (Kawamura).

DETECTION

New County Records - ALFALFA WEEVIL (Hypera postica) NORTH DAKOTA - Morton (p. 422). CEREAL LEAF BEETLE (Oulema melanopus) ILLINOIS - Clark, Coles, Ford, Sangamon (p. 432). ELM LEAF BEETLE (Pyrrhalta luteola) SOUTH DAKOTA - Charles Mix (p. 429). IMPORTED FIRE ANT (Solenopsis saevissima richteri) FLORIDA - Collier (p. 433). NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) NORTH DAKOTA - Morton (p. 430).

CORRECTIONS

CEIR 20(25):401, 414 - A HARVESTER ANT (Pogonomyrex salinus) - IDAHO - ... should be A HARVESTER ANT (Pogomyrmex salinus) - IDAHO ...

LIGHT TRAP COLLECTIONS

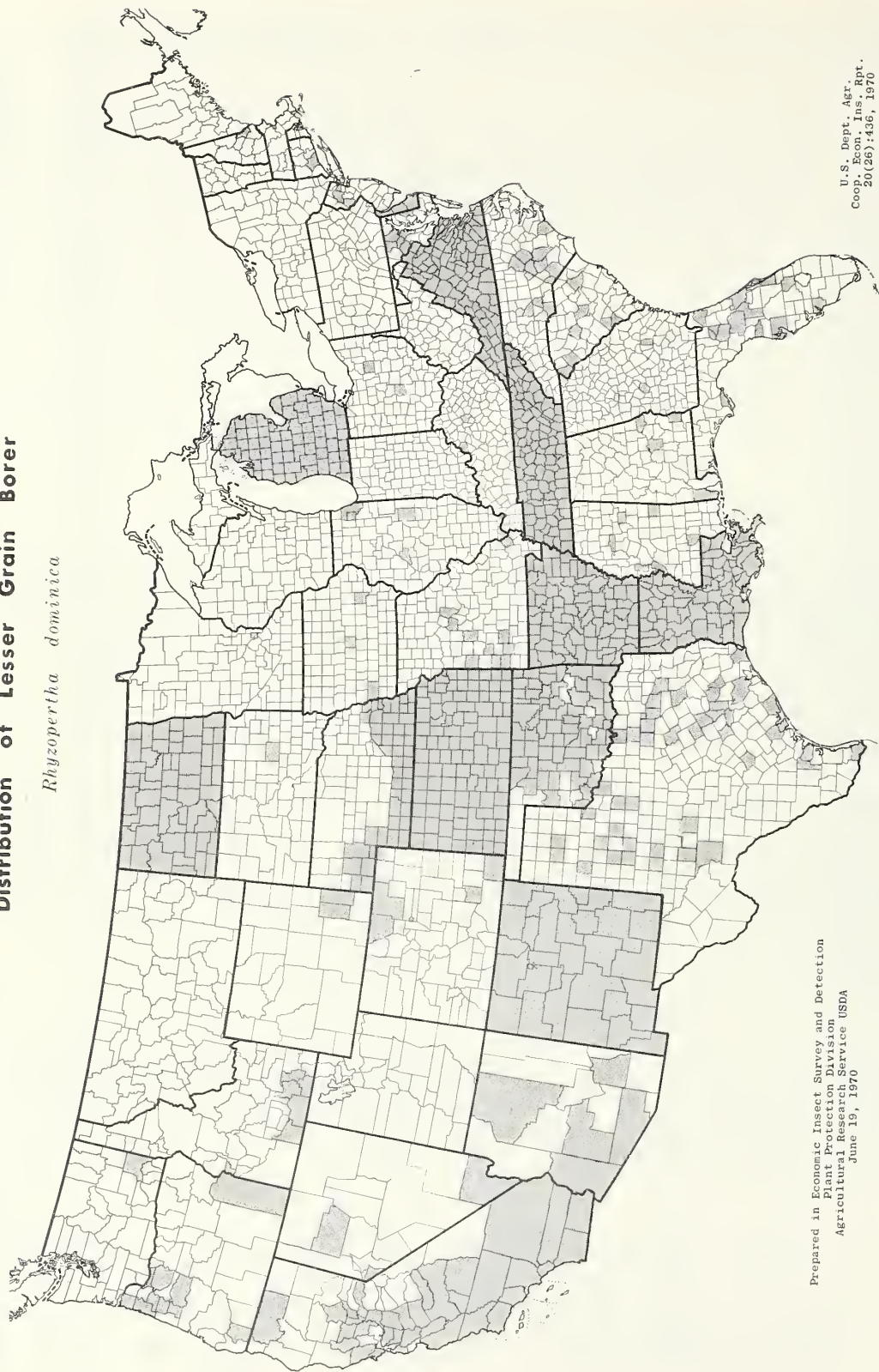
State	Location	Date	Temp. Sure 3' (inches)	Precipitation Type	Trap	Mercury (I = incandescent, O = other)	Blacklight	Carposa pomonella (codling moth)	Chorizagrotis auxillaris (gray cutworm)	Pyrgone aceris (salt-marsh caterpillar)	Parona ditusa (wheat head armyworm)	Pelia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Loxostege comalixalis (alfalfa webworm)	Loxostege sticticalis (garden webworm)	Loxostege albidialis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Oetilia nubilalis (European corn borer)	Peridroma saucia (partridge cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Psuedotelia unipuncta (armyworm)	Spodoptera exiguus (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA	Gainesville	6/13-18		BL								14	6	3							22	14	14	20	3		
KANSAS	Great Bend	6/12-16		BL		9		18						6							72	544					
MINNESOTA	Crookston	6/9-16		BL													11				36	177					
	Fergus Falls	6/9-16		BL																	2	17					
	Shakopee	6/9-16		BL													4				70						
	Worthington	6/9-16		BL																							
MISSISSIPPI	Stoneville	6/12-18	92-96	0.03	2BL	20		36				6	8	122							28	98	8				
NEW HAMPSHIRE	Lee	6/16		BL		1		2																			
NEW JERSEY	Cedarville	6/12-16		BL																							
	Evesboro	6/12-16		BL		1																					
	Plainsboro	6/12-16		BL		4																					
NORTH DAKOTA	Bottineau	6/15-16		BL																							
	Cavalier	6/16		BL		6																					
	Fargo	6/13, 17		BL		16																					
OHIO	Reynoldsburg	6/12-18		BL							20																
	Wooster	6/12-18		BL		11					54																
TEXAS	Waco	6/12-18	72-94	None		66		1				129	2	34							55	18	23		16		
WISCONSIN	Hancock	6/11-16		BL		2																					
	Madison	6/10-16		BL		14		4																			
WYOMING	Torrington	6/15						11																			

Weather of the week continued from page 418. Kansas. After midweek as the front moved eastward, it produced thundershowers in the northeast quarter of the Nation. Hail as large as soft balls, at Phoenix, Maryland, about 15 miles north of Baltimore, damaged automobiles and residences Thursday afternoon. The weekend brought scattered showers from the central Great Plains to southern New England and from Texas to North Carolina. South Carolina remained too dry with sparse rain except in the Greenville and Spartanburg area.

TEMPERATURE: Sunny skies and pleasant temperatures prevailed over the West last week. Afternoon maximums warmed from the 60's to the 80's in the Northwest and from 90's to about 105° in the southwestern deserts. A warm flow of tropical air from the Gulf of Mexico increased the temperatures and humidity over the East. Temperatures in Lower Michigan warmed to 90° on Wednesday. A slow-moving cold front brought more comfortable weather to the Northeast by Friday. Weekly mean temperatures averaged above normal in the Far West and from southern Colorado and New Mexico to the Atlantic coast and below normal over Utah, Arizona, and from the northern Rocky Mountains to southern New England and New Jersey. (Summary supplied by Environmental Data Service, ESSA.)

Distribution of Lesser Grain Borer

Rhyzopertha dominica



Prepared in Economic Insect Survey and Detection
Plant Protection Division
Agricultural Research Service USDA
June 19, 1970

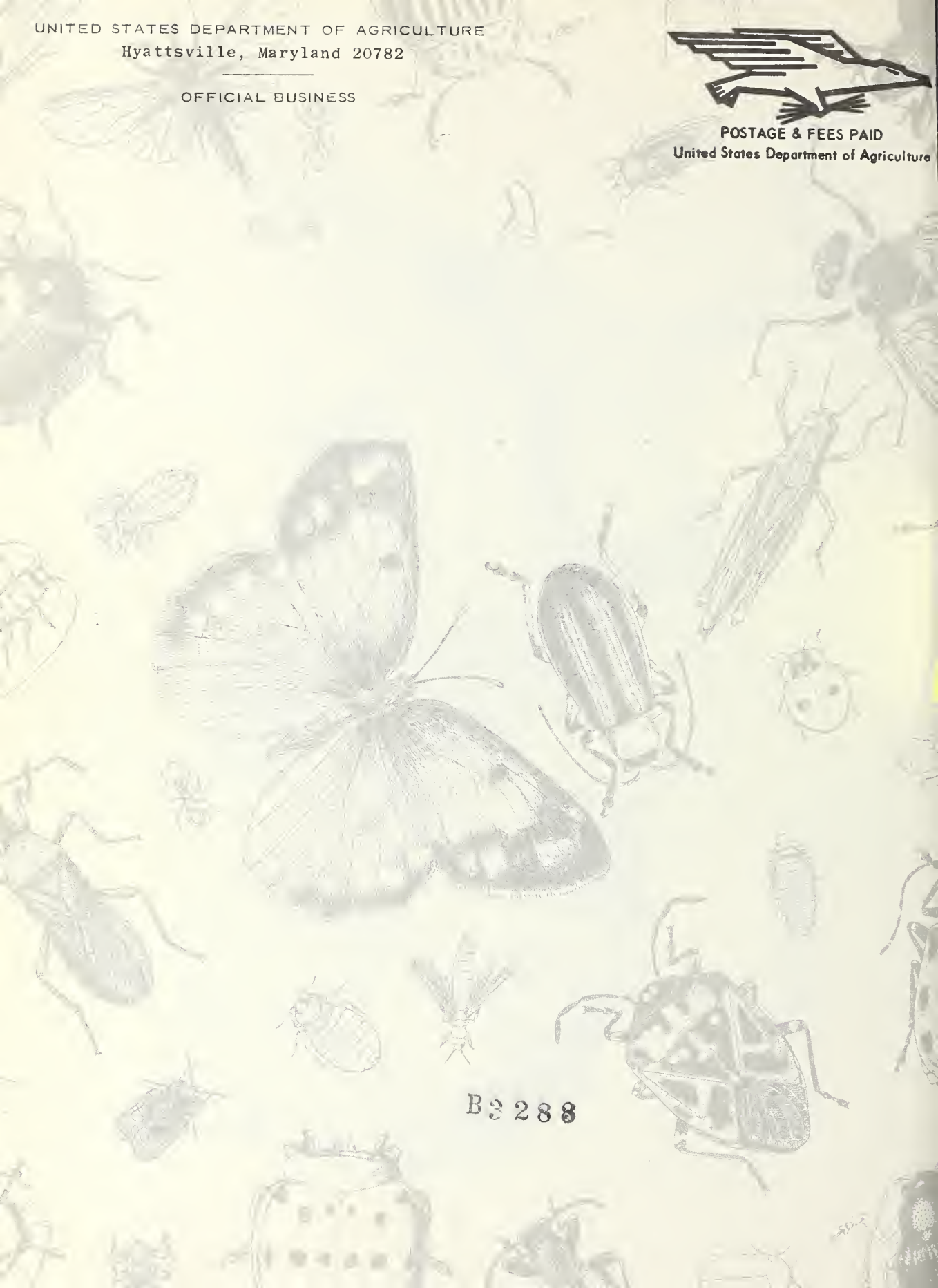
U. S. Dept., Agr.
Coop. Econ. Insect Rpt.
20(26)436, 1970

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