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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 clearinghouse and does not assume responsibility for accuracy of the material.**

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Plant Protection Division  
Agricultural Research Service  
United States Department of Agriculture  
Federal Center Building  
Hyattsville, Maryland 20782**

## COOPERATIVE ECONOMIC INSECT REPORT

## HIGHLIGHTS

Current Conditions

ASTER LEAFHOPPER heavy and aster yellows infection expected to be heavier than normal in west-central and northwest Minnesota. (p. 531). GREENBUG increased on corn and sorghum in High Plains and Trans-Pecos areas of Texas; heavy in older sorghum in southwest Oklahoma; increasing on sorghum in Kansas, several areas of Nebraska, and eastern South Dakota. (p. 532).

CORN ROOTWORMS damaged corn in Wisconsin, Minnesota, South Dakota, and Colorado. (p. 533). EUROPEAN CORN BORER moth collections increased in New Jersey; light trap collections indicate some damage may be expected in limited area of Virginia. Larvae caused problems in sweet corn in southern Michigan, heavy in sweet and field corn in Wisconsin. (pp. 533-534).

BOLLWORMS increased in south Arkansas; moth flights increased in south Alabama. BOLL WEEVIL above control levels in many fields in west Tennessee; increased in several areas of Mississippi. (p. 537, 538).

MEXICAN BEAN BEETLE larvae increasing on beans in Colorado. (p. 539).

BAGWORM heaviest in 35 years on evergreens in limited area of Oklahoma. (p. 540). A SPITTLE BUG heavy on junipers in Colorado. (p. 541).

HORN FLY troublesome on livestock in Utah, Oklahoma, Nebraska, and Illinois. (p. 542). MOSQUITOES continue troublesome in Utah and Wyoming. (p. 543).

Detection

● A CUPESID BEETLE reported from Hawaii for the first time. This species reported only from eastern Asia, Japan, and Siberia. This is a new Western Hemisphere record. Larvae are wood borers. (p. 546).

New State records include CLOVER HEAD WEEVIL from Florida (p. 535), LARCH CASEBEARER from Oregon (p. 541), a LEAF BEETLE from Wisconsin (p. 535), and a SCARAB from Oregon (p. 544).

For new county and island records see page 539.

Reports in this issue are for the week ending July 24 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JULY 27

HIGHLIGHTS: Temperatures averaged slightly cooler than normal over the western and eastern thirds of the Nation and much cooler than normal over the central portion. Tropical storm Becky brought rains almost daily to portions of the Southeast.

TEMPERATURE: Cold air poured into the North-central States early in the week dropping temperatures sharply. Monday morning readings plummeted to the 40's and 50's as far south as the northern portions of Kansas and Missouri. Springfield, Missouri, registered 44° early Tuesday morning. These temperatures are near normal for September but are about 15° below normal for July. Warm humid weather continued over the Deep South and hot weather persisted in the Southwest. Temperatures continued near normal over the West at midweek. Over the East, however, cool air continued to pour southward. Afternoon temperatures remained in the 70's and low 80's over a large area from Minnesota to New England and southward to the central gulf coast. Alexandria, Louisiana, registered 75° Wednesday afternoon in contrast to the 92° maximum Monday. Afternoon maximums in the 70's are common over the Deep South in October. Late in the week, a High pressure area remained centered over the central Appalachians. This system brought the return of high temperatures and increased relative humidity to the eastern half of the Nation. By the weekend, maximums in the upper 80's and lower 90's were common from Minnesota to New England. Weekly temperatures averaged above normal over most of California, western Nevada, southwestern Arizona, and New England, and below normal over the rest of the Nation. Parts of the central Great Plains averaged 6° to 10° cooler than normal.

PRECIPITATION: Generous showers fell early in the week along the gulf and Atlantic coasts while lighter, more scattered showers fell in the Southwest Interior, the Great Basin, and the northern Rocky Mountains. Scattered showers occurred over the northern and central Great Plains late in the week and light rains began in the Far Northwest on Sunday. Tropical Storm Becky was responsible for most of the other precipitation last week.

Weather continued on 547.

## SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - IOWA - Moth catches in light traps by county: Monona 38 (7 nights), Hancock 177 (7 nights), Plymouth 180 (11 nights), Louisa 3 (7 nights), and Dubuque 25 (5 nights). (Iowa Ins. Sur.). MINNESOTA - Found half-grown larva in lodged barley in Norman County. (Minn. Pest Rpt., July 17). MICHIGAN - Adults increasing at all blacklight stations. Counts by county: Lenawee 332, Livingston 287, Van Buren 312, Montcalm 187. Counts about double for time of year. (Newman, July 20). INDIANA - Second generation, mostly second instars, on grasses in northern area. Blacklight trap catches by district July 12-18: Northwest 370, east-central 162, central 68, southwest 69, south-central 59, west-central 45. (Huber).

ASTER LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - Remains heavy, ranged 500-1,500 per 100 sweeps, in west-central and northwest districts. Trace aster yellows disease in some flax. Expect higher than normal infection in these districts later this season. (Minn. Pest Rpt.). WISCONSIN - Mass flight night of July 16. Controlled in commercial plantings of lettuce, but about 4 percent of early crop affected by aster yellows. Leafhoppers 3 per 10 sweeps in adjacent fields of mint. (Wis. Ins. Sur.).

CORN EARWORM (Heliothis zea) - NEW YORK - Some fourth instars found in about 1,000 ear tips in various Ulster County fields on July 17. First moth in Poughkeepsie trap on July 20. (N.Y. Wkly. Rpt.). DELAWARE - Freshly emerged adults 3 per night in blacklight trap collections in most areas. (Burbutis et al.). MARYLAND - Heaviest adult flights at Salisbury, Wicomico County, and Centreville, Queen Annes County; averaged 2-3 per night in blacklight traps. Flights expected to increase rapidly throughout Eastern Shore next 21 days. (U. Md., Ent. Dept.). VIRGINIA - Expect 50 percent infestation on sweet corn in Holland area, Nansemond County, and no danger at this time to soybeans, based on light trap catches. (Allen). WISCONSIN - About 4 percent of ears of early planting of sweet corn infested in western Dane County. Infestations reported in Portage and Walworth Counties. (Wis. Ins. Sur.). TENNESSEE - Moderate to heavy damage on whorls of late-planted corn and on ears of earlier-planted corn in many central areas. Control in some cases not effective. (Gordon). ARKANSAS - Averaged less than one larva to 10 row feet of sorghum. (Boyer). OKLAHOMA - First to third instars increased in alfalfa in Jackson County. Ranged 5-7 per 10 sweeps in alfalfa in Muskogee and Wagoner Counties. Averaged 1 per ear in corn in Greer County. Moderate in corn and sorghum in Craig County, and light in corn in Choctaw County. (Okla. Coop. Sur.). NEBRASKA - Infested 40 percent of sweet corn ears examined in planting at Lincoln, Lancaster County. (Keith). IDAHO - Incidence in cornfields greater than usual in Canyon County. Average 1-12 percent in some fields indicating heavy ear infestation likely. (Homan). UTAH - Moderate in Washington County sweet corn. (Knowlton, Huber). ARIZONA - Larvae averaged 2 per ear of field corn at Safford, Graham County. (Ariz. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - ALABAMA - Found on corn and grain sorghum in all fields examined throughout State. Corn stunt virus and/or maize dwarf mosaic heavy in most corn in Shelby and Bibb Counties. Noticeable in corn throughout most of north area. Estimate corn yields will be reduced by 75 percent in more heavily infested fields in Bibb County. (Clarke et al.). MARYLAND - Corn leaf aphid infested isolated cornfields throughout Eastern Shore, heaviest in 30 acres near Trappe, Talbot County, and 15 acres near Kennedyville, Kent County. Averaged 10 percent of stalks infested. (U. Md., Ent. Dept.). INDIANA - Colonies in about half of cornfields checked in northern fourth of State. Ranged 4-44 percent of plants infested. Colonies ranged small to medium, and mostly confined to whorls. (Meyer). ILLINOIS - Percent plants infested heavy. No increase from previous reports due to cool rainy weather in northern, western, and southern areas. No threat yet. (Ill. Ins. Rpt.). WISCONSIN - Colonies generally still low in most fields but some corn heavily infested in central areas. Appearance of large numbers on fresh silks in some fields important. Aphid reputedly interferes with pollination when feeding on silks. (Wis. Ins. Sur.). MINNESOTA - Small colonies in whorls of corn throughout southern half of State. (Minn. Pest Rpt., July 17).

NEBRASKA - Corn leaf aphid declining in whorls of grain sorghum in southeast crop district. Several small colonies established on undersides of sorghum leaves. (Roselle). KANSAS - Remains light to heavy throughout State. Noticeable increase in beneficial insects particularly in southern areas. (Gates, July 20). ARKANSAS - Generally light and predation taking care of situation. Light in whorls of nonheading sorghum in few fields. Light in headed sorghum. (Boyer). OKLAHOMA - Averaged 300 per plant in young sorghum in Texas County. Ranged up to 300 per plant in Muskogee County. Heavy in Craig County. (Okla. Coop. Sur.). ARIZONA - Ranged 10-30 per plant in Cochise County. (Ariz. Coop. Sur.).

GREENBUG (Schizaphis graminum) - ARIZONA - Infestations in sorghum with average of 30 aphids per leaf reported in CEIR 20(30):512 eradicated by release of 2 gallons of Hippodamia convergens (convergent lady beetle) July 12. About 40 acres of corn and sorghum completely controlled. Adjacent cotton field also benefited at Safford, Graham County. (Ariz. Coop. Sur.). TEXAS - Greenbug increased on sorghum and corn in High Plains and Trans-Pecos regions. Light to heavy in Pecos and Reeves Counties. Isolated fields in Reeves County infested with damaging populations (15-25 colonies per plant, averaging 30-1,200 aphids). Light in Midland and Martin Counties. Populations brought under control by parasites and predators in Blacklands area. Increased greenbug populations noted throughout High Plains, ranging light to heavy with many fields treated. (Neeb et al.). OKLAHOMA - Ranged 0-150 per leaf in grain sorghum in Wagoner and Muskogee Counties and 500-1,000 per plant in few fields in Payne County. Averaged less than 1 per plant in 2 fields of young sorghum (about 12 inches tall) in Texas County. Ranged 200-500 per plant in Coal County. Very heavy (several thousand per plant) on older sorghum in several southwest counties. (Okla. Coop. Sur.). KANSAS - Infestations continue to increase throughout most areas. Average colonies per plant 3.7 in Nemaha County, 4.4 in 24-inch sorghum in Riley County, and 2.2 in 48-inch sorghum in same county. Infestations noted in Jefferson County. Colonies in 5 fields surveyed in Marshall County. Less than one colony per plant in 30-inch sorghum in Republic County. Up to 12.9 per plant on 30-inch sorghum in Cloud County. Trace on 24-inch sorghum in Ellsworth County. None in one field in Ford County. Some fields in Finney County with some degree of infestation. Some also in Seward County. Of several fields surveyed in Neosho and Crawford Counties, greenbug found in one field. (Gates, July 20).

MISSOURI - Greenbug light on sorghum in southwest area. Small colonies on 40 percent of plants in one field. (Keaster). NEBRASKA - Increasing in grain sorghum in east, southeast, central, and southern crop districts. Averaged 500-1,000 per leaf on lower 3-6 leaves in fields checked in Richardson and Nemaha Counties, some injury in most fields. Predators and parasites increasing slowly. Lady beetles averaged 1 per plant and parasitized aphids estimated to be less than 1 percent. At present rate of increase, predators will not effectively bring greenbug under control for another 10 days. (Roselle). SOUTH DAKOTA - Greenbug nymphs and adults heavy in sorghum field near Redfield, Spink County; treatment needed. On Charles Mix County sorghum. Continuing to build up on sorghum in eastern area. (Kantack).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Increasing slowly. Heaviest counts 8-10 per sweep in alfalfa on Eastern Shore. Ranged 10-14 per sweep of alfalfa in Frederick, Carroll, Howard, and Montgomery Counties. Some yellowing at Thurmont, Frederick County. (U. Md., Ent. Dept.). WISCONSIN - Counts vary in adjacent fields. Heaviest in alfalfa on sandy soil and cut early; up to 50 per sweep. Damage severe to some maples in nurseries in southeast. (Wis. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - UTAH - No damage yet in Millard County alfalfa seed fields (Hall, Davis), light in Washington County alfalfa (Huber). OKLAHOMA - Counts per 10 sweeps in alfalfa averaged 235 in field in Muskogee County and 20 in field in Wagoner County. (Okla. Coop. Sur.).

TOBACCO HORNWORM (Manduca sexta) - MONTANA - Defoliated Russian-olive in Pondera County shelterbelts. (Pratt). CALIFORNIA - Averaged one per leaf on some tomato plantings at Woodland, Yolo County. (Cal. Coop. Rpt.).



## CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - D. longicornis (northern corn rootworm) and D. virgifera (western corn rootworm) adults appearing in southern areas. D. virgifera heavy in many cornfields in western Dane County. Considerable corn rootworm lodging reported from scattered areas of State; reported in Buffalo, Green Lake, Grant, Iowa, Sauk, Trempealeau, Columbia, Dane, Jefferson, and Lafayette Counties. Lodging occurred in untreated fields and where corn grown for 3 or more years in succession. (Wis. Ins. Sur.). MINNESOTA - D. longicornis and D. virgifera adults heavy in central, southwest, south-central, southeast, and west-central districts. Mostly pupae and adults in corn on sandy soils of Dakota, Wright, and Scott Counties. Development rapid in lighter soils of Watonwan, Redwood, and Swift Counties. Lodging up to 70 percent of corn in eastern Swift County. Not all lodging due to corn rootworms. Adults trace to 3 per plant in southwest and south-central districts; mostly third instars, pre-pupae, and pupae. Larvae 30 per plant in Watonwan County field. Damage severe in Rock County; very few roots remaining in 3 adjacent cornfields. Numerous adults and damage in hybrid corn trial plot outside of Moorhead, Clay County, most northerly report of damage. (Minn. Pest Rpt.). KANSAS - In fields surveyed corn rootworm adults averaged 1-2 per plant on silking corn in Brown County and 0.4 per plant in Pawnee County. Less than 1 per 100 plants on silking corn in Neosho and Crawford Counties. Heaviest to date in Graham County, 8-10 per plant in some fields. (Gates, July 20). SOUTH DAKOTA - Damaged untreated cornfield near Britton, Marshall County. Field had been in continuous corn. Heavily damaged cornfield near Flandreau, Moody County. Some fields with 4-5 adults per plant had small larvae. (Kantack).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - INDIANA - Adults light and scattered in northern districts. Averaged 3+ per plant in Elkhart County field. Feeding on pollen in axils although silks present. (Meyer). Severely damaged 10-acre cornfield in Whitley County, third year without controls; counts of 50 per plant and over half pupae or newly emerged adults. (Lehker). MARYLAND - First adult of season on corn in Kent County July 16. Expecting some light to moderate lodging in Keymar area of Carroll County. Damage not evident yet. (U. Md., Ent. Dept.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - INDIANA - Mating pair in La Porte County July 20. (Anderson). Several adults taken in Porter County from several fields July 22. (Smead, Lehker). Both are new county records, determined by G. Gould. (Meyer). NORTH DAKOTA - First known damage in State on corn near Colfax in Richland County; field in corn for fifth year. Up to 90 percent loss in part of 80-acre field, adults 30-50 per plant. (Vasey). SOUTH DAKOTA - Adults averaged 8 per plant in heavily infested cornfield near Oral, Fall River County. (Jones). NEBRASKA - Adults ranged 1-5 per corn plant in 5 Lincoln County fields. (Campbell). OKLAHOMA - Larvae and pupae ranged 0-18 per plant in irrigated corn in Texas County. Adult emergence beginning. Populations averaged about 60 percent larvae, 30 percent pupae, and 10 percent adults. About 80 percent of specimens checked D. virgifera, 20 percent D. undecimpunctata howardi (southern corn rootworm). (Okla. Coop. Sur.). COLORADO - Adults ranged 0-6 per corn plant, damage heavy in some fields in Weld, Boulder, Larimer, and Morgan Counties. (Johnson, Stevens).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MAINE - Damage light to moderate. (Boulanger). NEW HAMPSHIRE - Full-grown larvae (first brood) several per plant in Merrimack County July 13. (Fisher). NEW JERSEY - Collections in blacklight traps increased when compared with previous week. First appearance of second-generation moths and egg laying should commence. (Ins.-Dis. Newsltr.). DELAWARE - Adult collections per night in blacklight trap in western Sussex County 60; central Sussex County 20, and eastern Sussex and Kent Counties 4. (Burbutis et al.). VIRGINIA - First-generation larvae pupating in Carroll County. (Dickens, Allen). Based on light trap catches Warsaw, Richmond County, and nearby areas can expect some damage to susceptible crops by second generation. (Allen). INDIANA - Percent of fields infested by district: North-northwest 33 percent, north-northcentral 83 percent, and north-northeast 86 percent. Percent of stalks infested by district:

North-northwest 9 (averaged less than one borer per 100 stalks), north-northcentral 30 (averaged 20), and north-northeast 25 percent (averaged 18). Total of 22 fields examined in these districts. More than half of corn in central and eastern areas in green silk but only 22 percent in north-northwest district. Number of empty tunnels equaled or exceeded number of larvae found in all districts. (Meyer). MICHIGAN - Growers in many southern counties experiencing serious problems with moderate larval counts in early sweet corn. Some unsprayed fields averaged 3-6 third instars per 12 ears in Oakland County. (Newman, July 20). ILLINOIS - Checks in Pike County show 31 percent larvae, 46 percent pupae, and 23 percent emergence. (Ill. Ins. Rpt.). WISCONSIN - Flight of first generation begun in southern areas. Only small percentage of second generation pupated but many entering prepupal stage. Fresh market sweet corn heavily infested. Reports indicate generally heavy infestations of early sweet corn and field corn from scattered areas of State. (Wis. Ins. Sur.). MINNESOTA - Egg masses still found in southwest, south-central and west-central districts. One cornfield in Pipestone County sprayed week ending July 17. Current larval counts per 100 plants by district: Southwest and central 71, and west-central 23. About 50 percent in late instars in southwest and south-central districts, with 12 percent pupae and 63 percent first instars in west-central district. (Minn. Pest Rpt.). IOWA - July 14-18 surveys showed average of 17.3 percent of corn infested and average of 20.6 borers per 100 plants in parts of east and west sections. (Iowa Ins. Sur.). KANSAS - Very few adults emerging from corn in Brown County. Majority of first generation still in late larval or pupal stages. Egg laying expected to peak near end of July or early August in northeastern area. Early planted corn should sustain only minimal injury, late-planted corn still with green silk could be in need of controls. (Gates, July 20).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae damaged 50-acre field of pretassel corn in Green County and several fields in Dale County totaling 100+ acres. Controls applied to field in Green County. Larval damage and corn leaf blight so severe in Dale County field grower will probably not attempt controls. Larvae in about 10 percent of ears of older corn in one other field in Dale County with heavy infestation of corn earworm (Heliothis zea). Larvae heavily damaged 60 percent of grain sorghum about 30 inches high in 60-acre field in Dale County. Scattered and light in another large field. Numerous small larvae in several grass crops near fields. (Johnson et al.). ARKANSAS - Primarily this species and some H. zea light on sorghum in northeast area. (Boyer). MISSOURI - S. frugiperda larvae light; infested 1-8 percent of late-planted corn and sorghum in south-central area. (Munson). MARYLAND - First larvae of season infesting 6 percent of 10-acre corn stand near Buckeystown, Frederick County. (U. Md., Ent. Dept.). NEW YORK - Female moth taken at Poughkeepsie, Ulster County, light trap July 18. (N.Y. Wkly. Rpt.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - MARYLAND - First injury of season reported on 15 acres of early whorl field corn near Kennedyville, Kent County; infestation averaged 1 percent. (U. Md., Ent. Dept.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Damaged corn in northern panhandle counties. (Clymer).

A FLEA BEETLE (Systema frontalis) - IOWA - Adults from northeast Buchanan County for a new county record. (Iowa Ins. Sur.).

GRASSHOPPERS - ARKANSAS - Primarily Melanoplus differentialis (differential grasshopper) heavier than for some time in extreme northwest area. Some silage sorghum and several pastures and hayfields treated in Carroll and Washington Counties. Extremely dry weather in 1969 and 1970 probably contributed to infestations. (Boyer, Jones).

CHINCH BUG (Blissus leucopterus) - TEXAS - Damage heavy to grain sorghum in Fisher County. (Boring).

SORGHUM MIDGE (Contarinia sorghicola) - ARKANSAS - Light in 6 northeast counties. None in one field checked in Independence County. Earliest planted fields in 6 counties maturing and past infestations. (Boyer).

SPIDER MITES - COLORADO - Tetranychus urticae (two-spotted spider mite) increasing in Weld, Larimer, Boulder, and Morgan Counties. Damage ranged trace to moderate, with third and fourth corn leaves infested in few fields. (Johnson). OKLAHOMA - Probably Oligonychus sp. heavy and caused damage to scattered cornfields in Texas County. Heavy in some grain sorghum fields in several southwest counties. (Okla. Coop. Sur.).

#### SMALL GRAINS

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - CALIFORNIA - Damaged 17-acre rice paddy in Willows, Glenn County. (Cal. Coop. Rpt.).

A LEAF BEETLE (Oulema palustris) - WISCONSIN - Specimen collected on oats in Iowa County by H. Line June 10, 1970. Determined by R.E. White. This is a new State record. (Wis. Ins. Sur.).

#### TURF, PASTURES, RANGELAND

JUNIPER WEBWORM (Dichomeris marginella) - TEXAS - Heavy on juniper trees on rangeland in Gillespie County near Fredericksburg. About 2,000 acres on one ranch nearly defoliated. (Menzies, Green).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - UTAH - Numerous nests of this and other species keeping large areas of rangeland bare in Washington, Beaver, and Utah Counties. (Knowlton).

#### FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - WYOMING - Light, larvae 0-36 per 10 sweeps, in Big Horn, Washakie, Hot Springs, and Fremont Counties. (Parshall). MONTANA - First crop 90 percent harvested. Damage to first cutting light to medium, hay still to be cut badly ragged especially where no treatments made. Seed alfalfa in early blooming stages. Most cut early and weevil damage minimal. (Pratt). IDAHO - Damage heavy (frosting) past 10 days in Camas County (Hazen); pupating at Rigby, Jefferson County, July 14 (Gooch). IOWA - Adult collected in Wright County July 23 for new county record. (Iowa Ins. Sur.). WISCONSIN - Adults reared from larvae determined by R.E. Warner. The following are new county records: Calumet, Winnebago, Outagamie, Brown, Shawano, Oconto, and Marinette. (Wis. Ins. Sur.). MASSACHUSETTS - Adults 1 and larvae 2.5 per 100 sweeps of alfalfa in 2 Hampshire County fields. (Miller).

CLOVER HEAD WEEVIL (Hypera meles) - FLORIDA - Five adults swept from crimson clover at Quincy, Gadsden County, by F.W. Mead April 28, 1970. Adult swept from crimson clover at Tallahassee, Leon County, April 30. (Mead). Determined by C.W. O'Brien. These are new State record and new county record. (Fla. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Ranged 30-40 per sweep of seed alfalfa at Orovada, Humboldt County; Reese River Valley, Lander County; and Lovelock, Pershing County. (Arnett, Hilbig). UTAH - Moderate in some Washington County alfalfa fields (Huber); 20 percent of second-crop alfalfa conspicuously infested in Wayne County (Chapman); decreased recently in Millard County (Hall). Infestation very heavy in some Box Elder County alfalfa fields. (Allred). WYOMING - Increasing but still noneconomic, ranged 30-1,300 per 10 sweeps, in most alfalfa in Big Horn, Washakie, Hot Springs, and Fremont Counties. Heaviest in Washakie County. (Parshall). WISCONSIN - Populations collapsed; counts 1 or 2 per sweep in alfalfa in southwest and central parts of State. (Wis. Ins. Sur.). MASSACHUSETTS - Adults and nymphs 951.5 per 100 sweeps of alfalfa in 2 Hampshire County fields. (Miller). MARYLAND - Increasing in all sections. Eastern Shore population below economic levels on alfalfa now. Ranged 0-15 per sweep. Increasing

more rapidly in many isolated fields of alfalfa in central counties. Pea aphid counts heaviest in Thurmont area of Frederick County, ranged 50-250 per sweep. (U. Md., Ent. Dept.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - MASSACHUSETTS - Adults 9.5 per 100 sweeps of alfalfa in 2 Hampshire County fields. (Miller).

LYGUS BUGS (Lygus spp.) - NEVADA - Averaging up to 35 per sweep on small, localized acreages of untreated alfalfa seed fields at Lovelock, Pershing County. (Arnett, Stitt). Generally less than 2 per sweep in alfalfa seed fields at Orovada, Humboldt County, but averaged up to 10 per sweep in several late-treated fields. (Hilbig, Lauderdale). Up to 2 per sweep in seed fields in Reese River Valley, Lander County. (Hilbig). ARIZONA - Adults and nymphs ranged 180-800 per 100 sweeps of alfalfa at Yuma, Yuma County. Adults averaged 100 per 100 sweeps at Cochise, Cochise County. (Ariz. Coop. Sur.). UTAH - More numerous in east Millard County alfalfa fields than in Delta area. Ranged 2-3 per sweep in some seed fields at Kanosh. (Hall). WYOMING - Ranged 3-22 (averaged 12) per 10 sweeps of alfalfa in Big Horn, Washakie, Hot Springs, and Fremont Counties. (Parshall). MASSACHUSETTS - L. lineolaris (tarnished plant bug) adults 50 per 100 sweeps of alfalfa in 2 Hampshire County fields. (Miller).

GRASSHOPPERS - WISCONSIN - Populations heavy in scattered areas and damage to alfalfa becoming noticeable in central area where grown on sandy soil and plant growth has been impaired. In one field nymphs averaged 30 per sweep, about 1 percent M. differentialis, 10 percent M. sanguinipes, 5 percent M. bivittatus, and remainder M. femurrubrum. Low percentage of M. femurrubrum adults, M. sanguinipes 50 percent adults most nymphs in late instars; most will mature next 2-3 weeks. Should dry conditions prevail, heavy feeding on corn expected. On heavier soil still many second and third instar nymphs of M. femurrubrum, damage will not be as noticeable since feeding will be over a longer period of time. (Wis. Ins. Sur.). MINNESOTA - Counts per square yard in alfalfa: 9-10 in Redwood County field; 10 in McLeod County field; 12-18 in margins in Otter Tail County; and 12 in sandy areas in Goodhue and Wabasha Counties. Most fields involved only Melanoplus femurrubrum. M. packardii adults found in Chippewa and Swift Counties. (Minn. Pest Rpt., July 17).

ALFALFA CATERPILLAR (Colias eurytheme) - MICHIGAN - Light on July 17 in alfalfa in Oakland, Livingston, Wayne, and Monroe Counties. Early instars ranged 13-29 per 100 sweeps. Adults laying eggs. Populations will steadily increase until fall. (Newman). WYOMING - Ranged 1-4 per 10 sweeps in 3 alfalfa fields in Washakie and Hot Springs Counties. (Parshall).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Adults and nymphs ranged 8-18 per 10 sweeps in alfalfa in Muskogee and Wagoner Counties. (Okla. Coop. Sur.).

SAY STINK BUG (Pitedia sayi) - NEVADA - Averaged 1-2 per 10 sweeps in alfalfa seed fields and adjacent rangeland at Orovada, Humboldt County. (Lauderdale).

#### SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - FLORIDA - Found in some untreated experimental fields at Jay, Santa Rosa County. Damaged some commercial fields in area. (Hutton). MARYLAND - Heaviest in Wicomico and Worcester Counties. Heaviest counts 1-3 per linear yard. Control needed at Girdletree, Worcester County. About 100-150 acres treated. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ALABAMA - Adults 1-5 per 3 row feet on 30-inch-high soybeans in several large fields in Sumter County. Fewer in many other fields. Destroyed 1-3 percent of leaf area in more heavily infested fields. (Williams et al.). SOUTH DAKOTA - Damaged field near Elk Point, Union County. (Kantack).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Earlier girdling by nymphs and adults now causing 1-10 plants per 100 row feet to fall in large field in Sumter County. Fewer lodged stalks in other fields. Plants 18-30 inches high. No economic damage expected as excessive number of plants present. (Williams et al.).

SOYBEAN LOOPER (Pseudoplusia includens) - FLORIDA - Averaged 1.5 per row foot on 16 acres of experimental soybeans near Gainesville, Alachua County. (Whitcomb).

#### PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Moderate on one-fourth of 40-acre stand, affecting plants at pegging area on farm at Bonifay, Holmes County. (Taylor). GEORGIA - Light to moderate across peanut belt. (French). OKLAHOMA - Moderate in Bryan County. (Okla. Coop. Sur.).

NOCTUID MOTHS - GEORGIA - Feltia subterranea (granulate cutworm), Spodoptera exigua (beet armyworm), and S. frugiperda (fall armyworm) larvae light to moderate in Seminole County. (Hall, French). ALABAMA - F. subterranea heavy, with much damage in large field in Houston County. Light in Henry, Crenshaw, and other counties. (Mathews et al.).

SPIDER MITES (Tetranychus spp.) - ALABAMA - Heavy throughout 20-acre field in Geneva County. Killed peanut tops on about 2 acres. (Reynolds).

#### COTTON

BOLLWORMS (Heliothis spp.) - TEXAS - In McLennan and Falls Counties adults and egg laying decreased. Larvae and injury increased. Eggs averaged 10.7 and larvae 7.1 per 100 terminals in 10 treated fields; eggs averaged 8.3 and larvae 4.6 in 43 untreated fields. Injured squares averaged 4.8 percent in 10 treated fields and 5.6 in 43 untreated fields. Injured bolls averaged 3.7 percent in 10 treated fields; 2.5 percent in 43 untreated fields. H. virescens 22 percent of 273 larvae collected. (Cowan et al.). OKLAHOMA - H. zea eggs averaged 12 percent in Wagoner County and ranged 0-9 percent in Muskogee County. Larvae ranged 6-12 percent in Muskogee County. Averaged 2 larvae and 4 eggs per 100 terminals in Pottawatomie County. Averaged 1 percent in Pawnee County and ranged 1-5 percent in Jackson and Tillman Counties. Generally, higher numbers in treated fields but numbers show slight increases in most areas. (Okla. Coop. Sur.). ARKANSAS - Heliothis spp. activity greatly increased in south area. Activity still light in north with some fresh eggs and new moths in some fields. Eggs and larvae, high in some fields, not nearly as high as expected from heavy moth flight of last week. Damaged square rates at treatment level in some fields but control by predators excellent. (Barnes et al.). TENNESSEE - Eggs and larvae about same as last week. Larvae or eggs per 100 terminals averaged 3 percent in infested fields. Fully grown larvae in many fields. (Locke). MISSISSIPPI - Moths moderate in light traps in delta counties. Infestations not developing as rapidly as expected. Eggs averaged 2.08 (maximum 7.5) per 100 terminals in 13 of 18 fields. Eggs 35-40 per terminal in test plots. No larvae in terminals. Injured squares averaged 1.72 (maximum 4.5) percent in 14 of 18 fields. (Pfrimmer et al.). ALABAMA - Still extremely low statewide. H. zea flights sharply increased in southern area during end of week. Larval increase expected next 14 days. (McQueen). SOUTH CAROLINA - H. zea 48 and H. virescens 25 in Florence County light traps July 15-22. (Taft et al.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Appearing on Yuma Valley cotton. One trouble spot on university farm, Yuma County. (Ariz. Coop. Sur.).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Still light in McLennan and Falls Counties. Punctured squares averaged 5 (maximum 9.9) percent in 10 treated fields; averaged 7.1 (maximum 17.5) percent in 43 untreated fields. (Cowan et al.). OKLAHOMA - Punctured squares averaged 4 percent and 2 percent in 2 fields in Pawnee County and ranged 1-3 percent in Jackson and Tillman Counties. Very

light in Wagoner County but occasional punctured square on ground. Moderate in Bryan County. (Okla. Coop. Sur.). TENNESSEE - First-generation "hatchout" peaked. Rain over area ideal for further buildup. Punctured squares averaged 13 percent (6 percent last week). Above control levels in many fields. Infestations becoming more general, not so spotty, within fields. (Locke). MISSISSIPPI - Increased in several areas. Infestation averages ranged 2-6 percent in 93 fields in 6 counties. (Sartor). ALABAMA - Punctured square counts moderate to heavy in most fields in south and central areas. Controls good in central areas. Punctured squares from 10-50 percent to 8-35 percent. Second and overlapping "hatchout" throughout south and central areas. Still light in north areas; punctured squares 0-7 percent. As high as 50 percent in few isolated small fields. Excessive moisture last 7 days and plenty of shade from plants will favor larval development. General adult buildup in State should result in many more infestations next 14-21 days. (McQueen). SOUTH CAROLINA - Catch of 27 on 16 wing traps in Florence County July 15-22; total to date 1,924. (Taft et al.).

TARNISHED PLANT BUG (Lygus lineolaris) - TENNESSEE - Found in most fields in west area but damage light. Increased slightly but not enough to justify control. (Locke). MISSISSIPPI - Problems in some delta counties. Averaged 0.33 per 100 terminals in 6 of 18 fields. (Pfrimmer et al.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - MISSISSIPPI - Problems in some delta counties. (Pfrimmer et al.).

SPIDER MITES - TENNESSEE - Continue to increase in untreated fields. Continued increase expected and spot infestations will become more general. (Locke).

#### TOBACCO

GREEN PEACH APHID (Myzus persicae) - VIRGINIA - Heavy in some Pittsylvania County fields. (Dominick, July 17).

#### SUGAR BEETS

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae ranged 0-6 per 100 sweeps in Washakie, Big Horn, Hot Springs, and Fremont Counties. Adults heavy in adjacent weedy area in Washakie County field. (Parshall).

A LYGUS BUG (Lygus sp.) - WYOMING - Adults 0-18 per 100 sweeps in Washakie, Big Horn, Fremont, and Hot Springs Counties. (Parshall).

#### POTATOES, TOMATOES, PEPPERS

POTATO APHIDS - MAINE - Surveys of 2,100 potato plants at Presque Isle, Aroostook County as follows: Acyrtosiphon solani (foxglove aphid) 3 colonies of 1-4 aphids. Macrosiphum euphorbiae (potato aphid) colonies of 1-22 aphids on 1,019 plants. Parasitism 3.7 percent, fungus disease 2.3 percent. Summer dispersal forms noted. Aphis nasturtii (buckthorn aphid) colonies of 1-43 aphids on 255 plants. Parasitism trace. Summer dispersal forms noted. Myzus persicae (green peach aphid) summer dispersal forms account for 13 colonies of 1-13 aphids. Nymphs with wing pads at Lincoln, Penobscot County. (Boulanger).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Averaged 470 per 100 leaves on unsprayed peppers in Sussex County. Much heavier on some potatoes in Kent County. (Barbutis et al.). CONNECTICUT - Heavy on potatoes in Tolland County. (Kring, July 17).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Declining in northern counties. (Knowlton). Common in most Box Elder County gardens. (Allred). MAINE - Reported at Masardis and Mapleton, Aroostook County, which is much farther north and west than in 1969. Larvae first to last instar. General and damaging where uncontrolled at Lincoln, Penobscot County. (Boulanger).

## BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Larvae increasing in Weld, Boulder, Larimer, and Morgan Counties; up to 10 per bean plant. Moderate to heavy infestations scattered throughout area. Controls recommended in many instances. (Johnson). TENNESSEE - Still light to moderate on beans throughout State. Damage light in many areas. Controls effective. (Gordon).

GREEN CLOVERWORM (Plathypena scabra) - WISCONSIN - Some damage appearing on snap beans in central area. Heaviest on earlier planted beans. Infestations generally light. (Wis. Ins. Sur.).

## COLE CROPS

CABBAGE MAGGOT (Hylemya brassicae) - VERMONT - Damaged radishes and turnips. (Nielsen, July 24).

IMPORTED CABBAGEWORM (Pieris rapae) - MAINE - Beginning to appear in numbers in central area. Later and less abundant than usual. (Boulanger).

## CUCURBITS

SQUASH BUG (Anasa tristis) - OKLAHOMA - Still damaging in many areas. Heavy in Marshall County. Moderate in Mayes County. Light in Choctaw County. (Okla. Coop. Sur.).

## GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Nymphs and winged forms stunted and rosetted asparagus and weeds at New Brunswick, Middlesex County. Also collected in Burlington County for a new county record. Determined by L.M. Russell. (Ins.-Dis. Newsltr.).

GREEN PEACH APHID (Myzus persicae) - NEW JERSEY - Extremely abundant and troublesome on many crops from Bergen to Cape May County. (Ins.-Dis. Newsltr.). CALIFORNIA - Counts of 1 per 10 sweeps in 70-acre asparagus patch in Rosedale and Shafter area of Kern County. (Cal. Coop. Rpt.).

SPINACH LEAF MINER (Pegomya hyoscyami) - VERMONT - Damaged chard, beets, and spinach. (Nielsen, July 24).

## WEATHER BUREAU'S 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1970

The Weather Bureau's 30-day outlook for mid-July to mid-August is for temperatures to average below seasonal normals over the eastern half of the Nation except for near normal in the middle Atlantic Coast States and near to above normal in the gulf and south Atlantic coast regions and the upper Mississippi Valley. Above normal averages are indicated for most areas west of the Divide as well as for the northern Plains. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal over the Atlantic Coast States, the Great Basin, the Rio Grande Valley, and portions of the southern Rockies. Subnormal totals are in prospect for the Pacific Northwest and also the northern and central Plains. 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.

## DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - UTAH - Moderate in Salt Lake County. (Burningham). More severe in Box Elder County. (Allred). WISCONSIN - Second-brood flight begun in Dane County. (Wis. Ins. Sur.). MICHIGAN - Adults emerging in Van Buren and Berrien Counties. (Carpenter, July 20).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - WASHINGTON - Third-brood emergence peaked on peaches July 13 at Parker Heights and Buena Heights in Yakima County. Second-brood peak ended week of June 23 on peaches in lower Yakima Valley. (Johnson).

UGLY-NEST CATERPILLAR (Archips cerasivoranus) - RHODE ISLAND - Larvae heavy on black cherry in Washington County. (Field).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Adult population peaked, now declining in Van Buren and Berrien Counties. (Carpenter, July 20). CONNECTICUT - Total catch increased from 789 adults last week to 1,285 this week at Storrs, Tolland County. (Savos, July 21). Adults peaked in New Haven County. (Moore). MAINE - Adult emergence in cages increased from 38 on July 16, to 93 on July 22 at Monmouth, Kennebec County. (Boulanger).

PEAR PSYLLA (Psylla pyricola) - UTAH - Causing sticky foliage. Nymphs numerous in Ogden, Weber County, orchard where parasites released. Chemical controls effective. (Davis). IDAHO - Severe outbreak in 3-acre pear orchard. Much honeydew and some leaf drop at Twin Falls, Twin Falls County, July 15. (Sutherland, Youtz).

MEALY PLUM APHID (Hyalopterus pruni) - CALIFORNIA - Heavy on apple trees at Yreka, Siskiyou County. (Cal. Coop. Rpt.).

SPIDER MITES - UTAH - Moderate in Washington County apple and pear orchards (Huber), and in Box Elder County (Allred). Spider mites and Tetranychus mcdanieli (McDaniel spider mite) increased 100 fold past 2 weeks in Weber and Davis County orchards. (Davis). Mites and severe heat severely discolored pear foliage in some Weber County orchards. (Rogers). GEORGIA - Panonychus ulmi (European red mite) light to moderate on peaches, apples, and nectarines in Talbot County. (Tyler, Harris). Heavy in apple orchard in Meriwether County. (Harris, Godowns). RHODE ISLAND - P. ulmi light on Washington County apples. (Field). MASSACHUSETTS - P. ulmi per 50 leaves in Hampshire County: 740 on Delicious apples and 895 on McIntosh apples with no dormant oil or treatment; 660 on Delicious and 535 on McIntosh with dormant oil but no treatment. (Jensen).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Light on pecans in Gillespie, Mason, McCullough, San Saba, Llano, Burnett, Williamson, and Milam Counties. Moderate in Kinney and Val Verde Counties. General near Denton, Denton County. (Green et al.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - First 2 adults of season July 15 in northwest section of Grants Pass, Josephine County. (McLoughlin).

## SMALL FRUITS

BLUEBERRY MAGGOT (Rhagoletis mendax) - MAINE - Adult emergence from soil declined from 17 on July 15, to 2 on July 21 at Jonesboro, Washington County. (Boulanger).

## ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) - TEXAS - Heavy, about 200 per pyracantha bush in Kinney County. Very heavy on post oak trees at Franklin, Robertson County. (Neab, Green). OKLAHOMA - Heaviest in 35 years on evergreens in Mayes County. Moderate to heavy in most areas. (Okla. Coop. Sur.).



ARBORVITAE WEEVIL (Phyllobius intrusus) - NEW HAMPSHIRE - Adult collected from nursery July 14 at Hooksett, Merrimack County. (Mason). This is a new county record. (Conklin).

AN ARMORED SCALE (Phenacaspis cockerelli) - FLORIDA - Abundant on 2 plants of bishopwood (Bischofia javanica) at Hobe Sound, Martin County. (Campbell, July 15). This is a new county record. (Fla. Coop. Sur.).

A LEAFHOPPER (Draeculacephala inscripta) - FLORIDA - Nymphs and adults on 90 percent of 150 plants of waterlettuce (Pistia stratiotes) in aquatic nursery at Tampa, Hillsborough County. (Simmons).

#### FOREST AND SHADE TREES

LARCH CASEBEARER (Coleophora laricella) - OREGON - Adults on western larch (Larix occidentalis) in Umatilla, Flora, and Wallowa Counties. Most larvae pupated. Collected by T.F. Gregg week of June 26. Determined by P.W. Orr. This is a new State record. (Gregg, USFS).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - MISSOURI - Light to heavy in spots throughout southeastern and south-central areas. Mostly full-grown larvae and pupae. (Kearby, Gass).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - VIRGINIA - Occasional small spot infestations during June in Richmond, Nansemond, King William, and Henrico Counties. (For. Pest Sur. Rpt., June).

A SPITTLEBUG (Clastoptera arborina) - COLORADO - Heavy on junipers from Pueblo, Pueblo County, to Ft. Collins, Larimer County. As high as 3-6 per foot of branch, 3 times level of 1968. Controls recommended. (Thatcher).

A MIDGE (Cecidomyia piniopis) - CALIFORNIA - Damaged 1969 twig growth on ponderosa pine in 100-acre stand in Sierra National Forest, Fresno County. Affected about 1,000 trees. (Crummer, USFS, July 17).

LARCH SAWFLY (Pristiphora erichsonii) - NEW HAMPSHIRE - Larvae, several hundred per larch at Rochester, Strafford County, July 15. (Mason).

TENT CATERPILLAR MOTHS (Malacosoma spp.) - MINNESOTA - Aspens defoliated by M. disstria (forest tent caterpillar) now almost completely refoliated. Parasitism in 54.5 percent of 640 cocoons collected west of International Falls, Koochiching County. Some cocoons at French River northeast of Duluth, Saint Louis County. (Minn. Pest Rpt.). VERMONT - M. disstria and M. americanum (eastern tent caterpillar) adults appearing in light traps past 2 weeks. (Nielsen, July 24).

FALL WEBWORM (Hyphantria cunea) - MICHIGAN - In second instar. Nests 1.5-2 feet long on apple, birch, and oak. Severe damage of ornamental trees anticipated if not controlled. (Wallner, July 20). INDIANA - Webs beginning to appear in Marion County. (Knapp). NEW HAMPSHIRE - First instars on linden in Merrimack County July 14. Small web on elm in Strafford County July 15. (Mason).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - IOWA - Completely defoliated maple grove in Benton County July 22. Left maples to search for food. (Iowa Ins. Sur.).

OAK SKELETONIZER (Bucculatrix ainsliella) - MINNESOTA - Heavy along river valleys throughout southeastern and eastern areas; scattered in other areas. (Minn. Pest Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MINNESOTA - Collected at New Ulm, Brown County, for a new county record. (Minn. Pest Rpt., July 17).

ELM LEAF BEETLE (Pyrrhalta luteola) - MISSISSIPPI - Moderate on Chinese elm in Oktibbeha, Lowndes, and Calhoun Counties. (Sartor). TEXAS - Damage on Chinese elm moderate in Upton and Reagan Counties and light in Midland County. Building up in many northern counties. Widespread at Longview, Gregg County; damage moderate to heavy on individual trees. (Neeb et al.). OKLAHOMA - Moderate to heavy on Siberian elm in most areas. Damage 80-90 percent in some areas. (Okla. Coop. Sur.). COLORADO - Adults and larvae defoliating elm in Weld County past few weeks. (Rothman, Urano). UTAH - Damaging at St. George, Hurricane, and Virgin in Washington County, and at Santaquin, Utah County. Injury increasing generally in State. (Knowlton). Severe in Cache County. (Davis). NEVADA - Larvae collected on elm at Elko, Elko County, for new county record. (Peters).

CHRYSOMELID BEETLES - WEST VIRGINIA - Xenochalepus dorsalis (locust leaf miner) browned black locust foliage 70-80 percent in Lincoln County and 40-50 percent in Boone and Kanawha Counties. (W. Va. Ins. Sur.). CONNECTICUT - Plagioder a versicolora (imported willow leaf beetle) increasing in New Haven County. (Hitchcock).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - TENNESSEE - Foliar injury severe in planting of Chinese chestnut in McNairy County. (Locke).

CICADAS - NEVADA - Diceroprocta apache adults heavy at Boulder City, Clark County. Oviposition causing twig damage to trees. (Zoller). VIRGINIA - Magicicada septendecim (periodical cicada) damage widespread in Fairfax County; severe on oak, maple, and other deciduous trees. (Allen). Extensive twig kill to hardwoods in northern Shenandoah, Frederick, and Clark Counties. (For. Pest Sur. Rpt., June).

#### MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 15 cases reported in U.S. July 19-25 as follows: TEXAS - Brewster 1, Pecos 4, Terrell 10. Total of 30 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 16, Chihuahua 7, Coahuila 5, Nuevo Leon 2. 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 47,228,000; New Mexico 3,660,000; Arizona 13,295,000; Mexico 67,267,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - UTAH - Ranged 100-400 per head north of Kelton, Box Elder County. (Knowlton). Troublesome in northern Cache County. (Thornley). Very numerous on Duchesne County cattle. (Mathis). WYOMING - Increasing, 70-160 (averaged 120), on 2 cattle herds in Washakie and Fremont Counties. (Parshall). TEXAS - Light in Hudspeth, Culberson, Midland, Reeves, Kinney, and Ward Counties. Light to moderate in Crockett, Edwards, Sutton, Brewster, and Pecos Counties. (Neeb). OKLAHOMA - Averaged 250 per cow in Payne and Noble Counties. Heavy in Marshall, Cherokee, and Craig Counties. Moderate in Cleveland County. Light in Mayes County. (Okla. Coop. Sur.). NEBRASKA - Ranged 400-500 per head on 2 herds in Platte River Valley near North Platte, Lincoln County. Averaged 150 per head on 3 ranch herds sprayed 3 times since mid-June in same county. (Campbell). NORTH DAKOTA - Ranged 20-300 (averaged 110) per head on beef cattle in McLean County. (Brandvik). MISSISSIPPI - Averaged 40 per head on 890 cattle in Hinds County. Averaged 200 per head on 490 cattle in Montgomery County. (Sartor). ILLINOIS - Counts per head of cattle by county: Bureau 59.5, Adams 225.7, Marshall and Putnam 308.3, Jersey 174, Pike 289, and at 2 sites in Williamson, 178.6 and 307. (Ill. Ins. Rpt.). MARYLAND - Controls effective on dairy cattle. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - UTAH - Numerous in feed yards at Nephi and Starr, Juab County. This is a new county record. (Hanson et al.). Annoying horses at College Ward and Hyrum, Cache County. (Knowlton). Very troublesome in Duchesne County. (Mathis). KANSAS - Averaged 5 per face in one feedlot, 2 per face in

another, and 2 per face on cows in small farm herd in Barton County. (Gates, July 20). NEBRASKA - Averaged 10-15 per head on 2 Platte River Valley herds in Lincoln County; averaged 15-20 per face on 3 ranch herds. (Campbell). WISCONSIN - Troublesome in Calumet, Columbia, and Clark Counties. (Wis. Ins. Sur.). ILLINOIS - Counts per head of cattle by county: Bureau 23.6, Adams 59.3, Marshall and Putnam 14.8, Jersey 20.4, Pike 21.8, and 6.2 and 18.9 at 2 sites in Williamson. (Ill. Ins. Rpt.). TENNESSEE - Moderate to heavy on Warren County livestock. (Warren). MARYLAND - Moderate to heavy on unsprayed cattle in central counties. Heaviest average of 100 per head on 69 cattle near Woodsboro, Frederick County. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - UTAH - Numerous about communities and campgrounds in Washington County, and communities in various parts of State. (Hanson, Knowlton). Moderate in Box Elder County generally (Allred) and in Duchesne County (Mathis). WISCONSIN - Biggest problem in dairy barns followed by Stomoxys calcitrans (stable fly). (Wis. Ins. Sur.).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Ranged 4-5 per leg on 2 groups of feedlot animals near North Platte, Lincoln County. (Campbell). Averaged 3-4 per leg on 2 herds near Platte River. (Keith). ILLINOIS - Ranged 0.1-21.5 per head of cattle in 7 counties. Heaviest in Marshall and Putnam Counties. (Ill. Ins. Rpt.).

MOSQUITOES - UTAH - Troublesome at Fish Creek, Juab County, and very numerous at Hinckley, Millard County (Arnold); less troublesome in eastern Millard County (Hall). Annoying picnickers and fishermen in Logan and Blacksmith Fork Canyons (Bennett, Knowlton) and around many Cache County communities (Thornley, Knowlton). Very heavy in communities and on farms in Box Elder County. (Roberts et al.). Serious in Duchesne County communities and farms. (Mathis). WYOMING - Still numerous and annoying to man and animals in Big Horn, Washakie, Hot Springs, Fremont, and Albany Counties. (Parshall). ARKANSAS - Psorophora confinnis declined in Lonoke County. Averaging 70 per night in light traps. Light to moderate numbers annoying residents locally in Lawrence County. (Meisch, Lancaster).

MINNESOTA - Aedes vexans accounted for 89 percent and Coquillettidia perturbans 7 percent of over 22,000 females in light traps at Minneapolis and St. Paul week ending July 10. A. vexans accounted for 82 percent of evening bite collections and 75 percent of daytime catches. A. fitchii ranked second in evening bite collections and was important in daytime bite collections. C. perturbans in significant numbers in daytime and evening collections. C. perturbans reached peak. A. vexans accounted for 26,000, Coquillettidia perturbans 1,780, and Culex tarsalis 277 of 29,425 females in light traps at Minneapolis and St. Paul week ending July 17. A. vexans in 300 of 349 larval collections. A. vexans accounted for 90 percent of catch in evening bite collections and 70 percent in daytime catches. Coquillettidia declined heavily. Rains July 18 produced another brood, mainly in northern half of mosquito control district. No trap had more than 15 mosquitoes night of July 22. (Minn. Pest Rpt.). RHODE ISLAND - Aedes spp. moderate to heavy in Washington County. (Field). MAINE - Gradually declining in most areas. (Boulanger).

TABANID FLIES - UTAH - Annoying horses at Nephi, Juab County, and troublesome at Dolomite, Tooele County. (Knowlton). Deer flies and horseflies annoying cattle at Richmond, Cache County; people near Bear Lake, Rich County; and livestock in meadow areas of Tooele County. (Knowlton, Thornley). Problem in some Duchesne County localities. (Mathis). MISSOURI - Tabanus sulcifrons up to 23 per head on 2 cattle herds in Texas County. (Munson). FLORIDA - Chlorotabanus crepuscularis heavy on dairy cattle at Lake City, Columbia County. Several adults per head following cattle into barns. (Smith, July 16).

BLACK FLIES - MAINE - Second generation emerged at Orono, Penobscot County; numbers not so heavy as in 1969. Second generation at Jackman; Somerset County, will begin to emerge next week. Sufficiently abundant to make presence felt. (Boulanger).

A SCARAB (Aphodius washtucna) - OREGON - Adults collected from nest of sage vole (Lagurus curtatus) 3 miles north-northwest of Culver, Jefferson County, by C. Maser December 21, 1969. Identified by O.L. Cartwright. (Ritcher). This is a new State record. (Penrose).

CHIGGER MITES (Eutrombicula spp.) - OKLAHOMA - Heavy in eastern areas despite dry weather. (Okla. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Larvae very heavy in Cherokee County, adults and nymphs light. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - TENNESSEE - Confirmed at Celina, Clay County, for a new county record. Determined by J.A. Keener. (Keener).

#### HOUSEHOLDS AND STRUCTURES

OLD-HOUSE BORER (Hylotrupes bajulus) - FLORIDA - Damage extensive to supporting roof timbers over garage area of home at Gainesville, Alachua County. (Strayer). Treatment and extensive renovation required. (Fla. Coop. Sur.).

A JAPANESE WEEVIL (Calomycterus setarius) - IOWA - Collected from homes in Boone County July 1, Webster County July 13, and Franklin County July 15. These are new county records. (Iowa Ins. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - IDAHO - Increasing around homes and gardens in many areas. Appear more abundant than in previous years. (Gittins).

#### BENEFICIAL INSECTS

LADY BEETLES - WASHINGTON - Hippodamia convergens (convergent lady beetle) very common on peppermint, about 1 per sweep on 40 acres at Vancouver, Clark County. (Shanks). WYOMING - Lady beetle adults 1-15 per 10 sweeps of alfalfa in Washakie, Big Horn, Hot Springs, and Fremont Counties. (Parshall). MISSISSIPPI - Declined in cottonwood nursery stock at State College, Oktibbeha County, and in Montgomery County. (Sartor). MAINE - Many Coccinella transversoguttata (transverse lady beetle) maturing in aphid-infested oats. Moving to adjacent potatoes in Aroostook County. Many pupae. H. tredecimpunctata tibialis (thirteen-spotted lady beetle) larvae, few adults, present. (Boulanger).

GREEN LACEWINGS (Chrysopa spp.) - COLORADO - As high as 20-30 per 100 sweeps. Heavy flights on orchard cover crops in Mesa County. (Johnson, Sisson).

MISSISSIPPI - These predators, a big-eyed bug (Geocoris punctipes), a flower bug (Orius insidiosus), and damsel bugs (Nabis spp.), still plentiful in many cotton fields in delta counties. (Pfrimmer et al.).

A DAMSEL BUG (Nabis sp.) - WYOMING - Adults 3-11 per 10 sweeps of alfalfa in Washakie, Big Horn, Hot Springs, and Fremont Counties. (Parshall).

BRACONIDS - OKLAHOMA - Lysiphlebus testaceipes increased considerably in greenbug-infested sorghum in Payne County. (Okla. Coop. Sur.). COLORADO - Macrocentrus ancylivorus released earlier on Western Slope. Parasitized 70 percent of larval specimens of oriental fruit moth recovered in Mesa County. (Sisson, Anderson).

A EULOPHID WASP (Dahlbominus fuscipennis) - VIRGINIA - Surveys to recover cocoons of an unspecified pine sawfly where parasite released in 1959, 1960, 1961, and 1969 in progress. Collections from 2 of 5 sites of release in 1969 positive for parasite. (For. Pest Sur. Rpt., June).

A CINNABAR MOTH (Tyria jacobaeae) - WASHINGTON - Steadily increased on tansy ragwort since release in western area in 1966 at Amboy, Clark County. (Shanks).

## FEDERAL AND STATE PLANT PROTECTION PROGRAMS

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Flights still heavy, adults more numerous than in past 10 years. Egg laying should be heavier and more damage can be expected. (N.Y. Wkly. Rpt., July 20).

GRASSHOPPERS - UTAH - Damage to small grains by Aulocara elliotti, Melanoplus sanguinipes, and other grasshoppers generally light and local. Little control done. (Knowlton). Moderate on small grains at Logan, Paradise, and Richmond in Cache County. (Thornley). Threatening in some spots on Cedar Mountain, Iron County; 90 percent Camnula pellucida and 5 percent M. sanguinipes, 50 per square yard on Podunk Creek; A. elliotti adults spottedly serious at Holden, Millard County; nymphs 3-5 per square yard on Shivivit Reservation in Washington County and along Virgin River. (Thornley, Knowlton). OKLAHOMA - Mainly M. differentialis damage to field crops in scattered areas over most of State. (Okla. Coop. Sur.). NORTH DAKOTA - Some movement from margins into fields in Ransom, Richland, Burleigh, and Grant Counties. Counts 6-20 per square yard in margin and up to 10 in field. Dominant species, M. sanguinipes in Richland and Ransom Counties and M. bivittatus in Burleigh and Grant Counties. Development third instar through adults. (Grasser). MINNESOTA - Damaging numbers in Swift County. Infested 3 townships near and south of Danvers. Most common in alfalfa fields, roadsides, and ditchbanks with some movement from hay to other crops. Ranged 10-18 per square yard of margins and ditchbanks in Swift County. Less than 2 per square yard in most southwest district fields. Ranged 4-5 per square yard in occasional alfalfa field in Rock and Nobles Counties. Some M. femurrubrum adults but mostly second to fourth instars. (Minn. Pest Rpt.).

GYPSY MOTH (Porthetria dispar) - MARYLAND - Male in trap on woodlot at Glencoe, Baltimore County, for a new county record. Collected by L. Sellman July 20. Determined by D.M. Weisman. PENNSYLVANIA - Moths in traps determined by E.L. Todd for new county records as follows: Collected on golf course in Dauphin County, by M. Haas July 15. In Beaver Township, Columbia County, by M. Carroll July 16. In Middletown Township, Delaware County, by W.J. Pisch July 16. In Stevens Township, Bradford County, by G.S. Soroka July 17. (PPD). NEW YORK - Males abundant in blacklight trap catches at Poughkeepsie, Ulster County, throughout middle third of July. (N.Y. Wkly. Rpt.). CONNECTICUT - Egg laying statewide. Many complaints of moth flights. (Hitchcock). RHODE ISLAND - Adults active in Washington County. (Field). VERMONT - Males emerging at Burlington, Chittenden County. (Nielsen, July 24).

JAPANESE BEETLE (Popillia japonica) - ALABAMA - Adults light in trap at feed mill at Haleyville, Winston County, for a new county record. Collected by G.C. Cain July 16. Determined by V.H. Owens; confirmed by R.D. Gordon. (PPD). TENNESSEE - Found again in McMinn County at Etowah. Extensions in Mount Vernon and Rural Vale areas of Monroe County, and Metcalf Bottom area of Great Smoky Mountains National Park in Sevier County. (PPD). RHODE ISLAND - Adults heavy on shrubs, roses, and other plants in pockets throughout State. (Field). VERMONT - Adults common problem in many localities, often heavy. (Nielsen, July 24).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Sterile moths released July 17-23: Coachella Valley 5,720,750, total to date 76,560,700; Bakersfield 1,400,000, total to date 17,371,700. First 2 native moths of season trapped July 17 near southeast corner of Kern County. Number of rosetted blooms in Coachella Valley quadrupled over last week; heaviest in field, with 298 rosette blooms per acre. ARIZONA - Released at Redington, Pima County, 67,500 sterile moths; total to date 787,300. Catch to date of 141 sterile moths in release field at Redington, but 40 native moths in south trapline and 31 native moths in north trapline. Second bloom inspection on July 17 negative. (PPD). Infestations in Yuma County. Ranged 2-20 percent in lower Yuma Valley; first and second instars in mature bolls in upper Yuma Valley; overall infestation 5 percent in Yuma Valley fields, infestation 3 percent in Parker Valley. Larvae 20 percent diseased by

Bacillus sp. at Safford, Graham County. Peak of third generation expected in Pima County. Exit holes in mature bolls east of Gilbert, Maricopa County. Larvae infested Hibiscus rosa-sinensis varieties Red Monarch and Double Yellow in nursery in Yuma County. Collected by L. Lee and R. Crount. Determined by L. McHenry and K. Winks; confirmed by D.M. Weisman. (Ariz. Coop. Sur.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Cysts on soybeans on farm in Pontotoc County for a new county record. Collected by Gregory and Wilson July 15. Determined by V.H. Owens; confirmed by A.M. Golden. (PPD).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Larvae heavy on domestic and wild grapes at Yreka, Siskiyou County. Collected by F.D. Horn July 15. Determined by M.R. Gardner. This is a new county record. Infestation about 425 miles north of nearest live infestation at Clovis, Fresno County. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - FLORIDA - Graphognathus spp. adults on soybeans averaged 2 per row foot at Quincy, Gadsden County, and averaged 8 per row foot in more than 12 acres in experimental plots at Marianna, Jackson County. (Greene). VIRGINIA - Graphognathus sp. adults feeding on narrow-leave plantain at Alexandria and in Fairfax County. (Kludy, Thomas).

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#### HAWAII INSECT REPORT

New State Record - One adult of a CUPESID BEETLE (Cupes clathratus Solsky) collected on a log at University of Hawaii quarry, Manoa, Oahu, by J. Fujii, March 16, 1969. Second specimen collected at Pearl City, Oahu, by Santos, May 7, 1970, found in student collection by F. Holworth. Larvae are wood borers, living under bark or about logs or moist frame structures. Determined by A. Neboiss. (Beardsley). Known to occur in eastern Asia, Japan, and Siberia. This is a new Western Hemisphere record. (PPD)..

Fruits - ORIENTAL FRUIT FLY (Dacus dorsalis) adults moderate on orange tree at Kahului, Maui; as many as 15 adults on single ripe fruit. Infested about 15 percent of fruits. (Miyahira).

Ornamentals - An ADELGID (Pineus pini) in 3 backyard collections of Pineus spp. in June at Waimea, Hawaii; first detection outside of initial site of infestation at Waikii, Hawaii. Intensive survey of nurseries and garden shops on Oahu detected a Pinus sp. bonsai plant at Kailua with branch terminals moderately infested; chemical treatment advised. (Yoshioka, Kawamura).

Miscellaneous Insects - Several adults of CLUSTER FLY (Pollenia rudis) collected at Kalalau, Kauai, for a new island record. (Sugawa). CUBAN-LAUREL THRIPS (Gynaikothrips ficorum) nymphs and adults light on 10 Chinese banyan (Ficus retusa) at Kihel, Maui. An ANTHOCORID BUG (Montandoniola moraguesi), an introduced predator, in 25 percent of infested leaves. (Miyahira).

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#### CORRECTIONS

CEIR 20(30):522 - LADY BEETLES - IDAHO ... (Sartor). Lady beetle ... (Portman). should read LADY BEETLES - MISSISSIPPI ... (Sartor). IDAHO - Lady beetle ... (Portman).

CEIR 20(30):519 - CODLING MOTH (Laspeyresia pomonella) - WASHINGTON - July 2 should read July 6. (Johnson, Chandler).

## DETECTION

New Western Hemisphere Record - A CUPESID BEETLE (Cupes clathratus Solsky)  
HAWAII - Oahu Island (p. 546).

New State Records - CLOVER HEAD WEEVIL (Hypera meles) FLORIDA - Gadsden County (p. 535). LARCH CASEBEARER (Coleophora laricella) OREGON - Flora, Umatilla, Wallowa Counties (p. 541). A LEAF BEETLE (Oulema palustris) WISCONSIN - Iowa (p. 535). A SCARAB (Aphodius washtucna) OREGON - Jefferson County (p. 544).

New County and Island Records - ALFALFA WEEVIL (Hypera postica) IOWA - Wright; WISCONSIN - Brown, Calumet, Marinette, Oconto, Outagamie, Shawano, Winnebago (p. 535). ARBORVITAE WEEVIL (Phyllobius intrusus) NEW HAMPSHIRE - Merrimack (p. 541). An ARMORED SCALE (Phenacaspis cockerelli) FLORIDA - Martin (p. 541). ASPARAGUS APHID (Brachycolus asparagi) NEW JERSEY - Burlington (p. 539). BROWN RECLUSE SPIDER (Loxosceles reclusa) TENNESSEE - Clay (p. 544). CLOVER HEAD WEEVIL (Hypera meles) FLORIDA - Leon (p. 535). CLUSTER FLY (Pollenia rudis) HAWAII - Kauai (p. 546). ELM LEAF BEETLE (Pyrrhalta luteola) NEVADA - Elko (p. 542). FACE FLY (Musca autumnalis) UTAH - Juab (p. 542). A FLEA BEETLE (Systema frontalis) IOWA - Buchanan (p. 534). GYPSY MOTH (Porthetria dispar) MARYLAND - Baltimore; PENNSYLVANIA - Bradford, Columbia, Dauphin, Delaware (p. 545). JAPANESE BEETLE (Popillia japonica) ALABAMA - Winston (p. 545). A JAPANESE WEEVIL (Calomycterus setarius) IOWA - Boone, Franklin, Webster (p. 544). SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) MINNESOTA - Brown (p. 541). SOYBEAN CYST NEMATODE (Heterodera glycines) MISSISSIPPI - Pontotoc (p. 546). WESTERN CORN ROOTWORM (Diabrotica virgifera) INDIANA - La Porte, Porter (p. 533). WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) CALIFORNIA - Siskiyou (p. 546).

Weather continued from 530.

TROPICAL STORM BECKY: Becky began quite humbly as a weak tropical depression that formed in the central Atlantic Ocean about 750 miles east of the Lesser Antilles late on July 14. The depression moved westward into the Caribbean, causing some shower activity over Cuba and the Florida Straits. Once reaching the Gulf of Mexico, the depression began to intensify rapidly, and by afternoon on the 20th, a poorly organized tropical storm had formed. Becky moved northward and continued to intensify. Becky continued northward toward the Florida Panhandle with just below hurricane-force winds near the center, and hurricane warnings were issued from Fort Walton to Point St. Joe, Florida. The storm remained poorly organized, however, and by 3 a.m. on the 22d she had begun to weaken and turn slightly towards the northeast. At 5 a.m. on the 22d, hurricane warnings for the Florida coast were discontinued. Gale warnings remained in effect from Panama City to St. Marks, Florida. Tropical storm Becky moved inland near Point St. Joe at 7 a.m. on the 22d, bringing heavy rain and squalls to the Florida Panhandle. A total of 8.16 inches of rain was dumped on Tallahassee, which also recorded a sustained 29 m.p.h. wind with gusts to 44 m.p.h. A tornado destroyed three houses in Panacea, Florida, but no injuries were reported, and a high tide of 3 feet above normal was recorded at Panacea. Becky rapidly became extratropical, but the remnants of the storm continued northward bringing rain to the southeastern and Middle Atlantic States. Flash flood warnings were issued for the Appalachian region. The storm moved through Georgia, Tennessee, and Kentucky, and by the morning of the 24th she had completely dissipated over Indiana, leaving behind a great deal of moisture. In Georgia, 3.34 inches of rain fell in Augusta and a tornado demolished two houses in Jefferson County, injuring one person seriously. Columbia, South Carolina, had 2.72 inches of beneficial rain and no adverse effects from the storm. Elsewhere the rainfall was widespread south of the Great Lakes and east of the Mississippi River. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

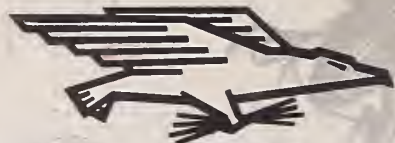
State	Location	Date	Temp-ature of F.	Pre-cip-itation (inches)	Trap	Type of trap	Crops
FLORIDA	Gainesville	7/17-23			1	BL	1
MARYLAND	Centreville	7/17-23			5	BL	5
	Hurlock	7/16-22			15	BL	11
	Salisbury	7/16-22			15	BL	36
	Snow Hill	7/16-22				BL	
MINNESOTA	Crookston	7/14-20				BL	
	Fergus Falls	7/14-20				BL	
	Shakopee	7/14-20				BL	
	Worthington	7/14-20				BL	
MISSISSIPPI	Stoneville	7/17-23	62-95	0.87	10	2BL	16
MISSOURI (County)	Greene	7/16-22			3		3
	Platte	7/17-23			3		4
NEBRASKA	Lincoln	7/18-24			76		17
NEW JERSEY	Cedarville	7/17-21			11	BL	32
	Evesboro	7/17-21			4	BL	4
	Hamonton	7/20-21			8	BL	5
	Plainsboro	7/7-21			19	BL	7
NORTH DAKOTA	Fargo	7/21-22			46	BL	
	Mandan	7/19				BL	
OHIO	Kenton	7/17-23			3	BL	1
	Wooster	7/17-23				BL	
SOUTH DAKOTA	Brookings	7/18-23			31	BL	2
TEXAS	Waco	7/17-23	70-93	0.10	8		28
VIRGINIA	Charlotte				2		3
	Courthouse	7/18-20			2		4
	Holland	7/17-19			6		8
	Warsaw	7/18-21					
WISCONSIN	Madison	7/15-21			17	BL	11





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