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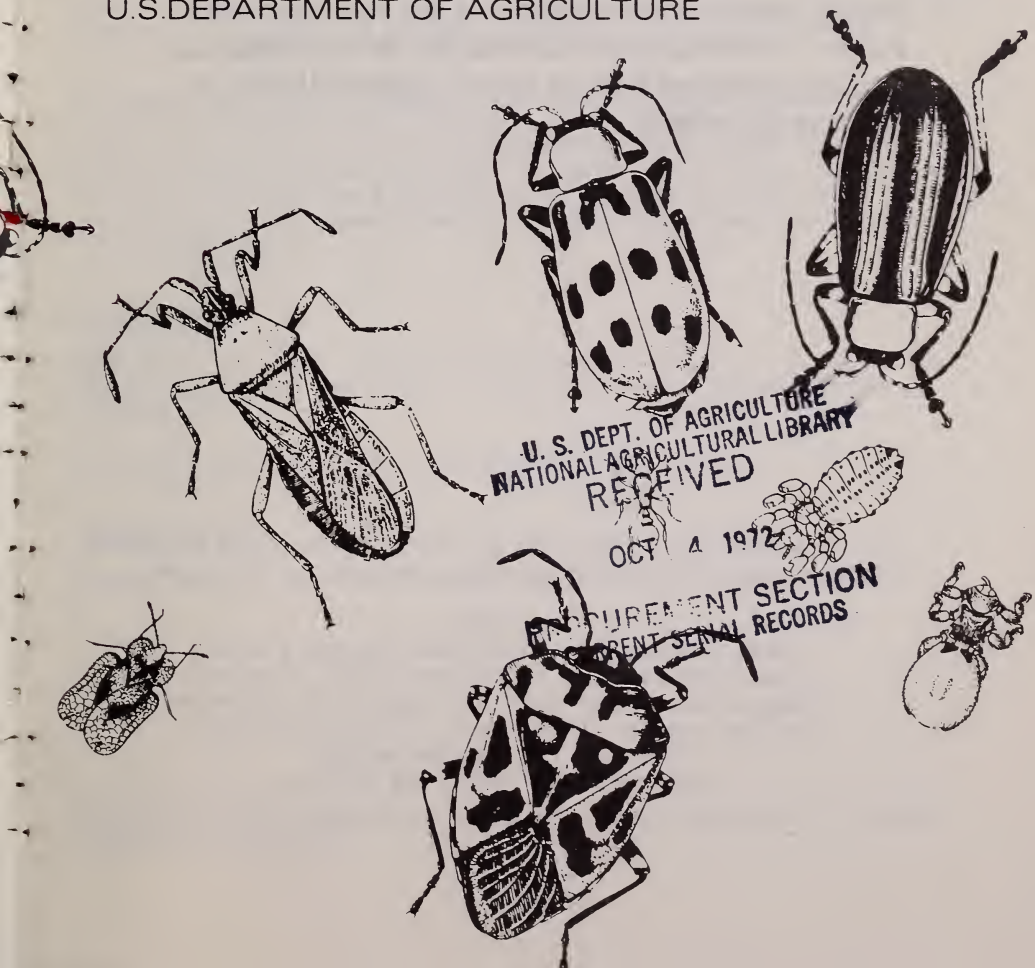
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Cooperative Economic Insect Report

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PLANT PROTECTION AND QUARANTINE PROGRAMS
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
U.S. DEPARTMENT OF AGRICULTURE



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QUARANTINE SECTION
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ANIMAL AND PLANT HEALTH INSPECTION SERVICE
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ECONOMIC INSECT SURVEY AND DETECTION STAFF

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

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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG and FALL ARMYWORM heavy but spotty in newly planted small grain in west-central Oklahoma. GREENBUG economic on early winter wheat in south-central South Dakota. (pp. 633-634, 635).

A DELPHACID PLANTHOPPER heavy and damaged improved grasses throughout much of lower Rio Grande Valley in Texas. (p. 635).

ALFALFA CATERPILLAR heavily damaged much alfalfa in Salt River Valley of Arizona. (p. 635).

VELVETBEAN CATERPILLAR ranged light to heavy on soybeans in west-central Alabama and southern Georgia; late soybeans may be badly damaged in Alabama if drought broken by rains sufficient to produce normal crop. (p. 636).

SOUTHERN PINE BEETLE moderate to heavy on pines in northwest South Carolina. MOUNTAIN PINE BEETLE damaged lodgepole pines in Lake Tahoe area of California. COOLEY SPRUCE GALL APHID heavy on blue spruce in Cuba Ranger District of Santa Fe National Forest in New Mexico. Heavy VARIABLE OAKLEAF CATERPILLAR population in Missouri collapsed due to parasitism by an unspecified scelionid wasp. (pp. 639-640).

Detection

New State records include a SCOLYTID in Virginia (p. 640), an ENCYRTID WASP in Maryland (p. 642), and an ELATERID in Hawaii (p. 644).

For new county records see page 643.

Special Reports

Khapra Beetle. Selected References 1947-1966. (pp. 647-653).

Reports in this issue are for week ending September 15 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-SEPTEMBER TO MID-OCTOBER 1972

The National Weather Service's 30-day outlook for mid-September to mid-October calls for temperatures to average below seasonal normals over the western half of the Nation except for near to above normal over the southern Plains. Above normal temperatures are indicated for the eastern third of the Nation except for near normal in the south Atlantic Coast States. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal from the Rockies to the Midwest and the lower Mississippi Valley as well as over portions of the central and southern Plateau. Subnormal totals are indicated for the west coast States and the middle and north Atlantic coast. Elsewhere near normal precipitation is expected.

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

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - CALIFORNIA - Larvae severely damaged field corn in Hanford area, Kings County. One 60-acre field completely stripped. Damage variable in other fields. Infestation probably related to amount of water grass in corn plantings. (Cal. Coop. Rpt.). COLORADO - Larvae of this species and Spodoptera frugiperda (fall armyworm) caused some injury to barley in Loma and Fruitā areas of Mesa County. (Bulla). KANSAS - Blacklight trap catches of P. unipuncta indicate significant moth flights in Barton and Greeley Counties. (Bell).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults continued to increase in blacklight traps in Sussex County; averaged 25 per night for 5 locations. (Burbutis, Kelsey). VIRGINIA - Light on soybeans throughout Coastal Plain. (Allen et al.). Moth collections still light, 33 taken past 14 days. Some injury seen in late tomatoes, damage to soybeans less than usual in Accomack and Northampton Counties. (Hofmaster). KENTUCKY - Larvae averaged 1 per head in no-till grain sorghum in Todd County. (Barnett, Raney). ILLINOIS - None found in 110 cornfields surveyed in western and central districts. (Ill. Ins. Rpt.). NORTH CAROLINA - Damage seen in 15 late soybean fields from Duplin County to Robeson County. One 5-acre Robeson County field had 85 percent pod loss. Populations in most fields in area declined below threshold level. (Hunt, Mears). ALABAMA - Only occasional larva observed on pods in soybean fields examined in Sumter, Marengo, and Wilcox Counties. (McQueen).

MISSISSIPPI - H. zea light to moderate in soybeans in Walthall and Monroe Counties. (Robinson). TEXAS - Light and generally local in grain sorghum in Motley County. One larva per head found in 10 percent of plants. (Pallmeyer). UTAH - Infested 90 percent of ears on field corn at Newcastle, Iron County; infestations averaged 10 percent in experimental corn in Box Elder, Salt Lake, Utah, Weber, Morgan, and Millard Counties. (McAlister, Knowlton). Infestation in canning sweet corn lighter than normal in Box Elder County. (Duncan).

CORN LEAF APHID (Rhopalosiphum maidis) - MAINE - Threatening infestations in some cornfields in many areas decreased past 2 weeks; none found in many fields. Lady beetle larvae searching for food, adults moved to lambsquarters and gardens. (Gall). NEBRASKA - Colonies of this species and R. fitchii (apple grain aphid) heavy on ears of field corn at scattered locations in central, east, and northeast crop districts. No controls needed. (Roselle, Keith). IDAHO - Infestations in backyard sweet corn all but eliminated by Hippodamia convergens (convergent lady beetle) and Chrysopa spp. (green lacewings) in Moscow area, Latah County. (Portman).

GREENBUG (Schizaphis graminum) - TEXAS - Light to moderate on grain sorghum in Martin County. (Neeb). OKLAHOMA - Heavy in spots in newly planted small grain in Custer County. (Okla. Coop. Sur.). NEBRASKA - Scattered colonies of 5-35 individuals seen on occasional sorghum plants in Gage, Seward, Butler, and Madison Counties. Some parasitized. (Roselle et al.). SOUTH DAKOTA - Infested all early planted winter wheat in Lyman County. Some fields more heavily infested than others, most economic. Winter wheat in 1-leaf stage in field south of Kennebec, Lyman County, severely infested with 2-5 alate females and 10-30 nymphs per

leaf. Controls applied in some fields. Present in sorghum in same area but noneconomic. (Jones).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEVADA - Spread from 80 acres of alfalfa in Diamond Valley, Eureka County, (see CEIR 22(35):574) to all alfalfa fields checked in valley; also found in Bean Flat area of county. Ranged 5-20 per sweep. (Lauderdale, Smith).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - KANSAS - Larva found in stem of sorghum plant in field in Woodson County; overall infestation not determined. Recent blacklight trap catches indicated substantial second-generation moth flight in Brown County. (Bell). IOWA - Larvae infested 58 percent of plants in 20 cornfields observed in Polk County. Larvae per plant averaged 1.4; about same as 1971. (Iowa Ins. Sur.). WISCONSIN - Larvae heavy in some late sweet corn. In Dodge County, 24 percent of ears in late field infested with larvae ranging from first through third instar. In Dane County, some late fields with 10+ percent of ears infested. In corn near harvest, infestation averaged 4 percent throughout State. Treatment underway in northeastern counties. (Wis. Ins. Sur.). KENTUCKY - Larvae ranged 3-4 per head in no-till grain sorghum in Todd County. (Barnett, Raney). DELAWARE - Adults averaged 8 per night in blacklight traps at 5 locations in Sussex County. (Burbutis, Kelsey).

CORN ROOTWORMS (*Diabrotica* spp.) - IDAHO - *D. virgifera* (western corn rootworm) adults averaged about 4 per 40-50 plants and ears in 7 cornfields in vicinities of Dayton, Weston, and Franklin in Franklin County. Scattered incidents of incomplete development of ear tips reported. Root damage insignificant, no lodging observed. (Tovery, Slack). WISCONSIN - *D. longicornis* (northern corn rootworm) adults numerous, ranged 1-3 adults per ear in some late corn in Manitowoc and Sheboygan Counties. Much silk feeding noted in some fields. (Wis. Ins. Sur.). MICHIGAN - *D. virgifera* adults collected from field corn in Waverly Township, Van Buren County, September 8 by D. Kaiser. Determined by R.F. Ruppel. This is a new county record. (Ruppel). INDIANA - *D. virgifera* adult collected in White County September 9 by R. Elliott. This is a new county record. All counties in northwest and north-central districts now infested. (Meyer).

RICE WEEVIL (*Sitophilus oryzae*) - MISSISSIPPI - Infested about 20 percent of ears in 250 acres of corn in Amite County. Light, but increased in grain sorghum in Noxubee County. (Robinson).

CHINCH BUG (*Blissus leucopterus leucopterus*) - KANSAS - Nymphs and adults ranged 5-20 per plant in one of 4 cornfields checked in each of Shawnee, Osage, and Wabaunsee Counties. (Bell).

SORGHUM MIDGE (*Contarinia sorghicola*) - KANSAS - Moderate in heads of late sorghum in Woodson County field; adults emerged. Last report of significant infestations in sorghum in State from Wilson and Montgomery Counties during September 1971. (Bell).

BANKS GRASS MITE (*Oligonychus pratensis*) - TEXAS - Counts and damage decreased on grain sorghum in El Paso and Pecos Valley areas due to heavy rain, cool nights, and higher than normal relative humidity. (Neeb).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy in spots in newly planted small grain in Custer County. Light, spotted infestations reported in Jackson County. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - NEBRASKA - Averaged about 10 per plant in wheatfield near McCook, Red Willow County. (Campbell).

TURF, PASTURES, RANGELAND

A DELPHACID PLANTHOPPER (Delphacodes propinqua) - TEXAS - Heavy and damaged improved grasses throughout much of lower Rio Grande Valley. Large numbers reported from several locations with heavy deposits of honeydew in damaged fields. Control treatments not too successful. (Deer).

RHODESGRASS SCALE (Antonina graminis) - ARIZONA - Heavy in many St. Augustine and Bermuda grass lawns at Phoenix, Maricopa County. (Ariz. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae fed on Coastal Bermuda grass in Coosa County. Followed usual pattern, damaged grass fertilized with poultry litter. This is first occurrence in county in 4-5 years. Light in grass and late corn in 2 areas of Marengo County. (Sessions, Yates).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae caused very heavy damage in many alfalfa fields in Salt River Valley, Maricopa County. Controls necessary. Average counts per 100 sweeps in Yuma County: Yuma Mesa 110, Yuma Valley 20, Gila Valley 320, Dome Valley 260. Averaged 9 per 100 sweeps west of Phoenix, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Moderate to heavy adult flights noted in alfalfa in Sunland Park area of Dona Ana County. (Hare). COLORADO - Larvae light in alfalfa in Arkansas Valley. (Schweissing).

ALFALFA SEED CHALCID (Bruchophagus roddi) - NEVADA - Heavy adult emergence began in Dixie Valley of Churchill and Pershing Counties August 18 with 34-75 percent of curls of roadside and field border alfalfa plants infested. Emergence began in Orovada area, Humboldt County, week of September 8 with up to 75 percent of curls on roadside and field border plants infested. Potential overwintering populations from these plants will be high unless sanitary practices employed. (Lauderdale).

PEA APHID (Acyrtosiphon pisum) - OHIO - Ranged up to 30 per sweep in Mercer County alfalfa, but counts of 1-11 per sweep more common. Parasitized aphids few in number but increasing. (Fox).

GRASSHOPPERS - WISCONSIN - Only pest of alfalfa in State. Populations heavier than normal in eastern Fond du Lac County, about 30 per square yard. Relatively heavy along roadsides and fence rows in Sheboygan and Manitowoc Counties; much feeding on corn silks noted in these counties. Heavy in alfalfa in Green County and in scattered fields in Grant and Iowa Counties. (Wis. Ins. Sur.).

SOYBEANS

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - ALABAMA - Leaf feeding by full-grown larvae ranged light to heavy on all fields examined in Sumter, Marengo, and Wilcox Counties. Several fields of late soybeans planted behind small grain showed 35-65 percent leaf loss. Some controls applied in Sumter and Wilcox Counties. Adults flying in all counties. Late soybeans may be badly damaged if extreme drought broken by rains sufficient to produce normal crop. (McQueen). GEORGIA - Ranged light to heavy over southern area. (French). ARKANSAS - First specimens of season taken in few soybean fields in Yell County. (Boyer).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Damaging populations spotty throughout Coastal Plain with more damage seen in Northern Neck area. Treatment recommended when adults and/or larvae average 5+ per row foot unless soybeans fully matured. (Allen et al.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ARKANSAS - Fed on soybean pods in Hempstead County. Pod feeding generally light over State. (Boyer). KENTUCKY - Adults averaged 2 per row foot in 120 acres of soybeans in Todd County. (Barnett, Raney).

COTTON

BOLLWORMS (Heliothis spp.) - GEORGIA - Egg and larval counts decreased, probably temporarily, in southern area. (French et al.). ARKANSAS - H. virescens continued heavy in extreme southern area. Heliothis spp. moth activity continued heavy in most areas of State. Egg deposition very heavy on green cotton. Moth activity very light in extreme northeast area. (Boyer). OKLAHOMA - H. zea damaged squares ranged 60-70 percent in many Caddo and Washita County fields. Percent damaged squares by county: Kiowa 0-9, Harmon 0-3, Jackson 0-14. Large numbers of eggs still found in irrigated fields in Jackson County. Square damage ranged 1-9 percent and boll damage ranged 1-20 percent in Bryan County. Light to moderate in Marshall County. In Wagoner and Muskogee Counties, eggs ranged 1-67 per 100 terminals and boll damage ranged 1-8 percent. (Okla. Coop. Sur.).

TEXAS - H. zea moderate in El Paso County. Eggs moderate to heavy in Pecos and Reeves Counties with heavy damage to young bolls and squares. Eggs ranged 15-120 per 100 terminals with 10-15 eggs per terminal on 5 percent of plants in some fields. In Pecos and Reeves Counties, H. zea larvae ranged 3-35 per 100 plants; square and boll counts showed 3-35 percent damage. Midland, Martin, and Glasscock Counties reported 10-40 eggs per 100 terminals, 2-12 larvae per 100 plants, and 4-25 percent damaged squares and bolls. Control in Pecos Valley difficult; in many fields only first-instar larvae controlled with sprays. H. virescens increased in fields in Pecos Valley area. About 30-50 percent of bollworm and budworm complex this species. (Neeb). ARIZONA - Controls still necessary in Maricopa, Pinal, and Yuma Counties for Heliothis spp. Damage heavy in treated fields at Thatcher, Graham County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Heavy defoliation reported in spots in several fields in Jackson County. (Okla. Coop. Sur.). TENNESSEE - Larvae defoliated many late maturing fields in western area. In many cases, feeding aided maturing of

cotton. (Gordon, Bruer). ALABAMA - Larvae of Trichoplusia ni and Pseudoplusia includens (soybean looper) caused heavy defoliation of plants in many fields in Sumter and Marengo Counties. Drought caused 25-50 percent leaf drop; loopers caused 35-80 percent of remaining leaves to drop and may have caused some loss of top bolls. (McQueen).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - TEXAS - Heavy in isolated fields in Balmorhea area of Reeves County. Counts around field margins ranged 6-8 larvae per cotton leaf. (Green).

SALTMARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Built up in Bowie area of Cochise County. Very light and scattered in Graham County. (Ariz. Coop. Sur.).

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Feeding by emerging weevils heavy, with 2-20 punctures per young boll in many fields in western area. (McQueen). OKLAHOMA - Punctured square counts averaged 100 percent in many Caddo and Washita County fields. Percent punctured squares by county: Greer 0-17, Jackson 0-23, Kiowa 0-21, Bryan 1-12; moderate in Marshall County. (Okla. Coop. Sur.). TEXAS - Moderate to heavy in northeastern Glasscock County, heavy in Presidio County. (Neeb).

POTATOES, TOMATOES, PEPPERS

POTATO SCAB GNAT (Phyxia scabiei) - WASHINGTON - Trace infestation found September 8 in 120 acres of potatoes at Patterson, Benton County. This is a new county record. (Landis, Foepfel).

VARIEGATED CUTWORM (Peridroma saucia) - NEW HAMPSHIRE - Severely damaged tomato crop in untreated field in Hillsboro County; most of crop lost. Holes eaten in fruit. Adults emerged in laboratory September 9 from larvae collected August 11. (Bowman, Morse).

BEANS AND PEAS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Heavily infested blackeye beans in Arvin area, Kern County; 300 acres of 3 varieties involved. One-half of plants appear affected. Low production from surviving crop expected. In past 5 years, this pest only economic north of Tehachapi Mountains. Damage increased each year in beans, milo, and corn, particularly where milo follows blackeye beans in double cropping. Drought this year eliminated much of double cropping. (Cal. Coop. Rpt.).

GENERAL VEGETABLES

BLACK SWALLOWTAIL (Papilio polyxenes asterius) - SOUTH CAROLINA - Larvae found feeding on celery in Richland County September 8 by O. Huff. Determined by D.K. Pollet. This is a new county record. (McCaskill).

DECIDUOUS FRUITS AND NUTS

FALL WEBWORM (Hyphantria cunea) - TEXAS - Infestations increased on pecan trees throughout Trans-Pecos area. (Neeb). OKLAHOMA - Second-generation larvae moderate to heavy on pecan, walnut, and persimmon in south-central counties and in Coal, Atoka, and Choctaw Counties. Moderate on pecans in Garfield County. (Okla. Coop. Sur.).

PEACHTREE BORER (Sanninoidea exitiosa) - OKLAHOMA - Heavy in untreated peach trees in Marshall County. (Okla. Coop. Sur.).

FRUITTREE LEAFROLLER (Archips argyrospilus) - WASHINGTON - Partial second generations of A. argyrospilus and A. rosanus (a tortricid moth) appeared in unsprayed pear trees at Wenatchee, Chelan County. Male moths taken in pheromone traps through August, larvae seen during July. This is a new county record for A. rosanus. (Burts, Brunner).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Light infestations, 5-10 per leaf, attacked pecan trees in Brazos County. (Green).

CITRUS

Insect Situation in Florida - End of August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 72 (norm 57) percent of groves; economic in 58 (norm 39) percent. Population decreased briefly but expected to increase in late September and persist above normal and at high level through November. Heavy infestations expected in 30 percent of groves. Highest districts south, central, north, west, and east. TEXAS CITRUS MITE (Eutetranychus banksi) infested 41 (norm 22) percent of groves; economic in 16 (norm 8) percent. Population decreased but was highest on record for August. Although further decrease to low level predicted through September, population will remain higher than average. Highest districts are west and central. CITRUS RED MITE (Panonychus citri) infested 13 (norm 28) percent of groves; economic in 3 (norm 12) percent. In contrast, population is lowest on record for August. Although it will remain very low in all districts, scattered groves will develop important infestations in November. BLACK SCALE (Saissetia oleae) infested 82 (norm 57) percent of groves; economic in 58 (norm 35) percent. August population is highest in 21 years of record but is lower than at mid-July peak. Population will remain above normal and in high range into December despite gradual decrease. Highest districts central, north, west, and east. AN ARMORED SCALE (Unaspis citri) infested 36 percent of groves; economic in 27 percent. Population decreased slightly from record high level at end of July. Gradual increase expected after September. GLOVER SCALE (Lepidosaphes gloverii) infested 58 (norm 48) percent of groves; economic in 5 (norm 8) percent. PURPLE SCALE (L. beckii) infested 40 (norm 42) percent of groves; economic in 1 (norm 2) percent. CHAFF SCALE (Parlatoria pergandii) infested 35 (norm 34) percent of groves; none economic (norm 3 percent). YELLOW SCALE (Aonidiella citrina) infested 25 (norm 40) percent of groves; none economic (norm 6 percent). These four armored scales all below normal abundance and at low to moderate level in all districts. Only scattered groves will harbor important infestations during remainder of 1972. GREEN SCALE

(Coccus viridis) infested 22 (norm 5) percent of groves; moderate to heavy in 14 (norm 1) percent. This scale abnormally numerous but not likely to be important. Decrease to low level predicted in December. WHITEFLIES infested 72 (norm 55) percent of groves; economic in 27 (norm 16) percent. Population of larval and adult forms much above average and in high range. Little change predicted. Highest districts south, central, and west. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

EUROPEAN RED MITE (Panonychus ulmi) - PENNSYLVANIA - All stages on Concord grapes at North East in Erie County. Ranged 12-300 per leaf; some vineyards seen with 95 percent of foliage bronzed. (Judd).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - SOUTH CAROLINA - Aerial surveys during July of 724,292 acres of forest showed moderate to heavy infestations in 1,007 spots. Infestations found on Oconee, Table Rock, Kings Mountain, and Croft State Parks and in southeast Anderson, southern Cherokee, northeast Union, southern Greenville, northern Laurens, and southeast Spartanburg Counties. Salvage of infested trees through commercial sales by landowners recommended. Where salvage not possible and timber values warrant control, cutting and burning of infested trees or chemical control suggested. Pest appears to be moving very rapidly within infested areas. Peak tree mortality expected in late September. Additional infestations in and around present infestations expected before winter. (Graham).

MOUNTAIN PINE BEETLE (Dendroctonus ponderosae) - CALIFORNIA - Large stands of lodgepole pine damaged at South Lake Tahoe, El Dorado County. Pitch tubes ranged 1-40 per tree. Land development and drought condition responsible for upset. This is very high value recreation area and timber loss is important. (Cal. Coop. Rpt.).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - NEW MEXICO - Light to heavy on Blue Spruce in Santa Fe National Forest. Heaviest populations noted in Cuba Ranger District. (Heninger, Patterson).

FALL WEBWORM (Hyphantria cunea) - OHIO - Defoliation still problem in east-central and northeastern areas. Damage very severe in Stark, Mahoning, Portage, and Summit Counties. Many requests for aid in control received. (Ball). KENTUCKY - Larvae heavy and caused heavy damage to foliage on several species of trees in Powell County. (Barnett). NEW MEXICO - Heavy on cottonwoods in Jemez Springs area, Sandoval County. Some trees almost completely encased in webs. (Heninger, Patterson).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - NORTH DAKOTA - Completed aerial survey in Dunn and Benson Counties showed decrease in defoliation in all areas. In Fort Totten area, Benson County, defoliation occurred in same area as 1971 but basswood only tree species completely defoliated. In Killdeer Mountain area, Dunn County, only scattered pockets of defoliation seen, complete defoliation confined to birch trees. Small pocket of defoliation

seen in Twin Buttes area, Dunn County. Larvae full grown, some in prepupal stage. (Brandvik, Meyer). MISSOURI - Caused very severe defoliation of oaks in 1971, but only scattered pin oaks showed signs of defoliation in 1972. An undetermined scelionid wasp, an egg parasite, caused complete collapse of Heterocampa mantee population in State. (Gass).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Moderate to heavy on mimosa in Coalgate, Coal County; Atoka, Atoka County; Hugo, Choctaw County; Tishomingo, Johnston County; and Ardmore, Carter County. Light to moderate in Davis and Sulphur, Murray County; Roff, Pontotoc County; Marietta, Love County; and El Reno, Canadian County. One lightly infested tree found in Chickasha and one other in Minco, Grady County. All are new county records. Moderate to heavy in Bryan, Marshall, Oklahoma, and Cleveland Counties and light in Tulsa County. (Okla. Coop. Sur.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - OHIO - Preliminary egg mass surveys in Franklin and Hocking Counties indicate 1973 populations in these areas will be as heavy or heavier than in 1972. (Fox).

A TORTRICID MOTH (Platynota stultana) - CALIFORNIA - Larvae and pupae ranged 1-10 per tree in large Christmas-tree planting of Monterey pine at Arvin, Kern County. This continuing infestation severely damaging trees to be harvested this season. (Cal. Coop. Rpt.).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - WEST VIRGINIA - Adult damage light, 5 percent to white oaks in Summers County; adults numerous around lights September 10. Collected and determined by J.D. Hacker. This is a new county record. (Hacker).

A SCOLYTID (Xylosandrus germanus) - VIRGINIA - Adults taken from limb of redbud in Pittsylvania County by B. Hogenson June 6. Determined by D.M. Anderson. This is a new State record. (Allen).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 4,455 confirmed cases reported in continental U.S. during period September 3-9 as follows: Texas 4,177; New Mexico 62; Arizona 127; California 1; Oklahoma 88. Total of 478 cases confirmed in Mexico. Number of sterile flies released in U.S. this period totaled 155,986,000 as follows: Texas 136,888,000; New Mexico 4,470,000; Arizona 14,028,000; California 600,000. Total of 32,060,000 sterile flies released in Mexico. (Anim. Health).

FACE FLY (Musca autumnalis) - MARYLAND - Ranged 10-40 per head on beef and dairy animals in Montgomery, Frederick, and Carroll Counties. (U. Md., Ent. Dept.). OHIO - Populations and annoyance to cattle decreased markedly in western area, compared to infestations during July and August. (Fox). ILLINOIS - Counts of 7.2 per animal noted in southern sections and 30.2 in central section. (Ill. Ins. Rpt.). MISSISSIPPI - Infestations light, probably due to hot weather. Averaged 2 per face on 75 beef cattle in extreme southeastern Pontotoc County. This is a new county record. (Robinson). MISSOURI - Counts in northwest area ranged 6-37 per

animal, averaged 13. (Munson). SOUTH DAKOTA - Musca autumnalis decreased, ranged 0-3 per head (averaged 1) on cows and 0-2 per head (averaged less than 1) on calves. (DeFosse). UTAH - Continued to annoy horses and cattle in farm areas of Weber, Davis, and Cache Counties. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - MARYLAND - Ranged 30-150 per head on beef steers and 10-100 per head on dairy animals throughout central area. (U. Md., Ent. Dept.).

HORN FLY (Haematobia irritans) - FLORIDA - Averaged 49 per dairy cow at Hawthorne, Alachua County, and 123 per dairy cow at Lowell, Marion County. (Fla. Coop. Sur.). MISSISSIPPI - Ranged up to 50+ per cow on 300 beef cattle in Monroe County, up to 1,000+ on 75 beef cattle in Pontotoc County. (Robinson). ILLINOIS - Counts of 76 per animal seen in southern sections and 250 in central section. (Ill. Ins. Rpt.). MISSOURI - Light to moderate, ranged 300-1,000+ per animal, in northwest area. (Munson). SOUTH DAKOTA - Ranged 25-300 (averaged 150) per side on cows and 5-35 (averaged 25) on calves. (DeFosse). OKLAHOMA - Ranged 750-800 per head on cattle in Payne County, 1,000-1,500 per head in Major County, and 270-300 per head in Marshall County. Ranged moderate to heavy in Pawnee, Cleveland, Garvin, and McCurtain Counties. (Okla. Coop. Sur.).

MOSQUITOES - MARYLAND - Aedes stimulans larvae taken near Finzel, Cranberry Swamp, Garrett County, May 18. Collected and determined by W.E. Bickley. This is a new county record. (U. Md., Ent. Dept.).

MINNESOTA - Most mosquito eggs in Ramsey County in diapause September 12. Light trap counts decreased from summer high of 104,000 in 16 traps for 7-day period to 3,200 for week ending September 8. A. vexans accounted for 70-95 percent of adults trapped during past 42 days. (Minn. Pest Rpt.). UTAH - Mainly A. dorsalis, very annoying in southern areas of Curlew Valley and numerous in Snowville, Park Valley Junction, and Kelton Pass areas of Box Elder County. (Knowlton). ARIZONA - Mosquitoes heavy at Tucson, Pima County; at Safford, Graham County; and at Willcox, Cochise County. (Ariz. Coop. Sur.). CALIFORNIA - Two Psorophora signipennis females collected in light trap by V. Gasparotto, one mile west of Furnace Creek Inn, Inyo County. This is a new county record. This is third locality where this species collected in State. Previously collected in Imperial and Riverside Counties. (Cal. Coop. Rpt.).

A COMBFOOTED SPIDER (Latrodectus variolus) - MICHIGAN - Two females taken from hole in dead tree branch in Baldwin, Lake County, June 14 by R. Lannon. Determined by R.J. Sauer. This is a new county record. (Sauer).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - GEORGIA - Heavy on layer chickens housed on wire or on ground in Clarke County. (Nolan).

HOUSEHOLDS AND STRUCTURES

EUROPEAN EARWIG (Forficula auricularia) - MICHIGAN - Adult taken in basement of home in Cadillac, Wexford County, September 8 by W.E. Pitts. Determined by R.J. Sauer. Specimen taken in restaurant in Detroit, Wayne County, August 29 by J. Johnson. Determined by T.J. Canthrell. These are new county records. (Sauer).

BENEFICIAL INSECTS

AN ENCYRTID WASP (Ooencyrtus kuwanai) - MARYLAND - Reared from Porthetria dispar (gypsy moth) eggs collected at Perryville, Cecil County, September 7 by R. Rusco and C.W. McComb. Determined¹/₂ by B.D. Burks. This is a new State record. (U. Md., Ent. Dept.).

VEDALIA (Rodolia cardinalis) - ARIZONA - Active in Icerya purchasi (cottoncushion scale) infestations in several citrus groves on Yuma Mesa in Yuma County. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - Population 2 percent larvae, 23 percent pupae (80 percent females), and 75 percent emerged September 5 at Custer, Whatcom County. Adult emergence apparently peaked September 13. Many homeowner complaints received regarding large number of adults; most common complaint was nuisance factor of adults clinging to screens and doors or entering homes. (Jackson).

GRASSHOPPERS - UTAH - Moved from adjacent rangelands into alfalfa in foothills from Utah County through Box Elder and Cache Counties. (Knowlton). OREGON - Adult survey showed heavy numbers and severe damage in untreated range areas of Wallowa, Grant, Baker, Malheur, Douglas, Umatilla, Morrow, and Klamath Counties. Infested acreage about same as 1971. Problem most serious in high prairie area near Zumwalt, Wallowa County. Some damage occurred to alfalfa near rangelands in Malheur and Harney Counties, with heaviest damage in irrigated hay and grain fields in Jordan Valley. (Goeden).

GYPSY MOTH (Porthetria dispar) - OHIO - Inspection of Lorain County locality where male moths trapped in early August (see CEIR 22(34):565) revealed one viable egg mass, 2 empty pupal cases (1 male, 1 female), and larval skins. Ooencyrtus kuwanai (an encyrtid wasp), an egg parasite of P. dispar, scheduled for release in area September 19. (Roach).

JAPANESE BEETLE (Popillia japonica) - PENNSYLVANIA - Adults very heavy on favorite hosts in Fayette County. Severe defoliation seen on many trees. (Maust).

MORMON CRICKET (Anabrus simplex) - MONTANA - Infested 160 acres in Camas Prairie area, Sanders County. Egg deposition continued. Averaged about 2 crickets per square yard; low enough to be solitary. Few found near Townsend, Broadwater County. (Knudsen). NEVADA - Averaged 1 per 2-3 square yards on 400 acres in upper Willow Creek area, Santa Rosa Range, Humboldt County. (Richards).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Infested 4-40 percent of bolls in El Paso County. Infested bolls ranged 3-50 percent in Pecos and Reeves Counties. In Glasscock County, less than 5 percent infested bolls reported across county with some isolated spots averaging 10-20 percent infested bolls. Pink bollworm damage resulted in heavy boll rot in many fields in Pecos Valley areas. (Neeb). ARIZONA - Boll infestations heavy in untreated fields at Safford, Graham County. Heavy in cotton southeast of Bowie, Cochise County. Some controls applied for top crop in Yuma County. Boll infestation 66 percent in field east of Chandler, Maricopa County. (Ariz. Coop. Sur.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Collected on soybeans at Montpelier, Clay County, August 9 by W.E. Taylor. ALABAMA - Collected on soybeans at Excel, Monroe County, September 11 by T. Lemons. Determined by V.H. Owens. Confirmed by A.M. Golden. These are new county records. (PP).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - One adult collected from citrus tree at Apopka, Orange County, August 28. Feeding damage moderate on new foliage. This is first infestation found outside regulated area in more than one year. (Fla. Coop. Sur.).

DETECTION

New State Records - AN ELATERID (Cardiophorus stolatus) - HAWAII - Oahu Island. (p.644). AN ENCYRTID WASP (Ooencyrtus kuwanai) - MARYLAND - Cecil County. (p. 642). A SCOLYTID (Xylosandrus germanus) - VIRGINIA - Pittsylvania County. (p. 640).

New County Records - ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) WEST VIRGINIA - Summers (p. 640). BLACK SWALLOWTAIL (Papilio polyxenes asterius) SOUTH CAROLINA - Richland (p. 637). A COMB-FOOTED SPIDER (Latrodectus variolus) MICHIGAN - Lake (p. 641). EUROPEAN EARWIG (Forficula auricularia) MICHIGAN - Wayne, Wexford (p. 641). FACE FLY (Musca autumnalis) MISSISSIPPI - Pontotoc (p. 640). MIMOSA WEBWORM (Homadaula anisocentra) OKLAHOMA - Coal, Atoka, Choctaw, Johnston, Carter, Murray, Pontotoc, Love, Canadian, Grady (p. 640). MOSQUITOES - MARYLAND - Aedes stimulans, Garrett. CALIFORNIA - Psorophora signipennis, Inyo (p. 641). POTATO SCAB GNAT (Pnyxia scabiei) WASHINGTON - Benton (p. 637). SOYBEAN CYST NEMATODE (Heterodera glycines) MISSISSIPPI - Clay. ALABAMA - Monroe (p. 643). A TORTRICID MOTH (Archips rosanus) WASHINGTON - Chelan (p. 638). WESTERN CORN ROOTWORM (Diabrotica virgifera) MICHIGAN - Van Buren. INDIANA - White (p. 634).

CORRECTIONS

CEIR 22(35):573 - GREENBUG (Schizaphis graminum) - SOUTH DAKOTA - "Decreased to very low levels on corn." should read "Decreased to very low levels on sorghum." (PP). So far as known, corn is not a host of S. graminum in South Dakota. (Jones).

CEIR 22(36):599 - CHINCH BUG (Blissus leucopterus leucopterus) should read HAIRY CHINCH BUG (Blissus leucopterus hirtus).

HAWAII INSECT REPORT

New State Record - Six specimens of an ELATERID (Cardiophorus stolatus) collected under loose bark or at bases of kiawe trees at Hickam Air Force Base, Oahu, by B. Kumashiro; 2 on June 21, one on July 20, and 3 August 31. Biology of C. stolatus is apparently unknown. Larvae of Cardiophorus spp. mostly predatory and noneconomic, but larvae of a Cardiophorus sp. have been reported destructive to corn in Illinois. Distribution includes India, Ceylon, and Burma. Determined by E.C. Becker. (Kawamura).

General Vegetables - PEPPER WEEVIL (Anthonomus eugenii) and CORN EARWORM (Heliothis zea) light in all stages of fruits in 0.75 acre of sweet peppers at Koko Hend, Oahu. About 5-10 percent of fruits infested with corn earworm larvae, less than 5 percent infested with larvae and adults of pepper weevil. LEAFMINER FLIES (Liriomyza spp.) light in lettuce fields at Koko Head; larval mines restricted to one or two older leaves per head. Adults trace, less than one per head. (Kawamura).

Fruits and Nuts - Light to moderate colonies of COCONUT SCALE (Aspidiotus destructor) infested 30-70 percent of pinnae on 40 percent of fronds of 100+ coconut trees at Hawaii Kai, Oahu. Larvae and adults of several LADY BEETLES (Telsimia nitida, Lindorus lophanthae, and Pseudoscymnus anomolus) moderate on infested pinnae. P. anomolus introduced from Guam in February 1970 to aid in control of A. destructor. Subsequent releases made in several areas on Oahu, including Hawaii Kai; last release at this locale in August 1971. This is first recovery of P. anomolus in State. (Kawamura). During past few months, some backyard and commercial papaya plantings in Kona area of Hawaii found infested with serious viral disease, papaya mosaic. Transmission attributed primarily to GREEN PEACH APHID (Myzus persicae). Infected plants in area will be rogued and destroyed to reduce probability of spread to Puna, where most commercial plantings of papaya occur in Hawaii. (Matayoshi).

Beneficial Insects - Field collected cowpea and snap bean petioles on Kauai infested by Melanagromyza phaseoli (bean fly) revealed heavy parasitism of M. phaseoli by two BRACONID WASPS (Opius importatus and O. phaseoli) and a PTEROMALID WASP (Halicoptera patellana). Parasitism by Opius spp. 84 percent and by H. patellana 3 percent. (Sugawa). Field examination of Melastoma malabathricum at various locations on Hawaii during August showed infestation of fruits and terminals by MELASTOMA BORER (Selca brunella) averaged 40 (ranged 29-51) percent. Each sample included 100 terminals or fruits. (Matayoshi). Larvae and adults of a LADY BEETLE (Chilocorus nigrinus) collected while feeding on Saissetia nigra (a soft scale) infesting bamboo plants at University of Hawaii campus, Oahu, during June 1972. C. nigrinus purposely introduced from Ceylon in October 1958 and from Guam in August 1971. This is first recovery of C. nigrinus in Hawaii. (Tsuda).

KHAPRA BEETLE
(Trogoderma granarium Everts)

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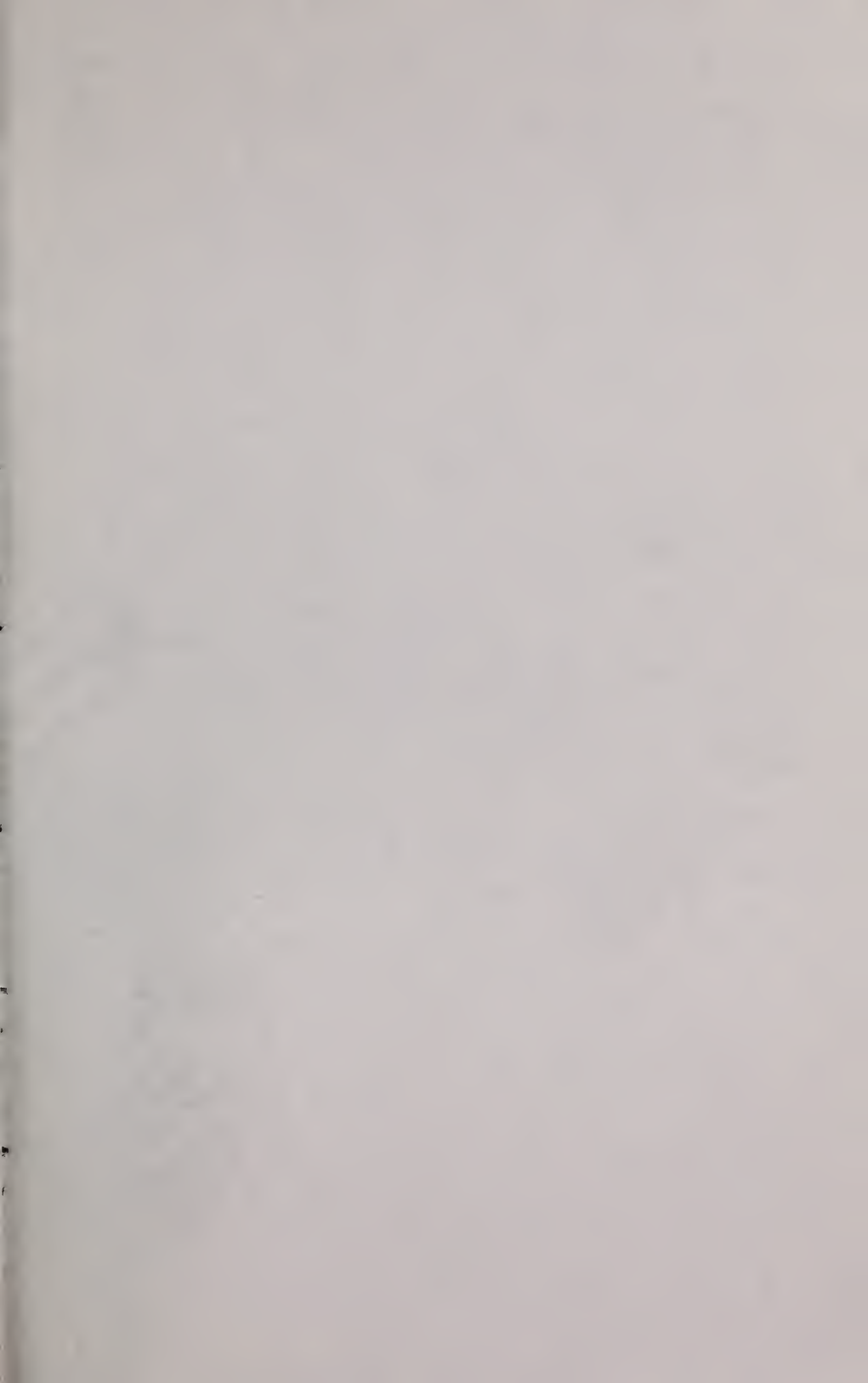
Prepared by Pest Survey and
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PRECIPITATION: Highs were conspicuous on the weather map early in the week. One High was centered over the northern Great Plains, another High covered the eastern third of the Nation. A slow moving front stretched from a Low centered in the vicinity of Hudson Bay across Lake Superior to the central Great Plains and westward to another Low centered in northern Utah. Scattered showers and thunderstorms, some heavy, rumbled in the vicinity of the front. Especially heavy rains fell in eastern Nebraska and western Iowa. Storm totals exceeding 5 inches were common in that area; some localities received more than 10 inches Sunday evening and early Monday. One of the largest totals that has come to our attention was 21 inches at Earling, Iowa, about 40 miles northeast of Omaha, Nebraska. Continued heavy rains in Shelby County, Iowa, caused record river stages along the west and east forks of the Nishnabotna River. Heavy rains in Nebraska, Iowa, Kansas, and Missouri caused important rises on the main stem of the Missouri River. Although the heaviest thundershowers occurred in the Nebraska and Iowa vicinity, heavy showers occurred elsewhere along the front which, by midweek, stretched from the Texas Panhandle to New England. Heavy rains swelled creeks and rivers in Iowa, southeastern Minnesota, and northern Illinois. Hail as large as baseballs fell in the Sidney, Iowa, vicinity early Wednesday evening. Much of the rain which occurred late in the week fell on saturated soil where it was not needed. As the weekend approached, a slow moving front was approaching the gulf and southern Atlantic coast. Rain was sparse and sunny skies prevailed over most of the Nation. Generous rains fell over the weekend in the Deep South. Lighter showers occurred from Wisconsin to Pennsylvania.

TEMPERATURE: Early in the week a High centered over the northern Great Plains dropped early morning temperatures into the 40's from Montana to Upper Michigan and held afternoon temperatures in the 60's and 70's in the vicinity of the Great Lakes. Another High was spread over the eastern third of the Nation. It brought warm, humid air to that area. Afternoon temperatures in the tropical air ranged mostly in the 80's and 90's. A slow moving cold front marked the battle line of cold and warm air masses. Cold air pushed the front southward and eastward and as the weekend approached, comfortable weather prevailed over most of the Nation. Afternoon temperatures reached 100 degrees on some days in the desert Southwest. Buckeye, California, registered 105 degrees Thursday afternoon. Temperatures dropped to 32 degrees or lower at some mountain stations in the West on 1 or 2 mornings. Big Piney, Wyoming, recorded 15 degrees Thursday morning, Bondurant, Wyoming, registered 12 degrees. Pleasant, sunny weather continued over the weekend over most of the Nation. Maximums ranged from near 60 degrees along the Canadian border to the 90's along the Gulf of Mexico. Afternoon temperatures reached the 90's over the central Great Plains on Saturday and Sunday -- 97 degrees at Omaha, Nebraska, Sunday. The Deep South was equally as warm but higher humidity made the air feel "sticky." In general, weekly mean temperatures averaged cooler than normal west of the Rocky Mountains and warmer than normal east of the Rockies. Parts of the central Great Plains averaged 6 to 8 degrees warmer than normal.



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