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U. S. DEPARTMENT OF AGRICULTURE

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

PLANT PEST SURVEY SECTION

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 Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Survey Section
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United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BOLL WEEVIL hibernation counts from North Carolina, South Carolina and Virginia. (p. 1141).

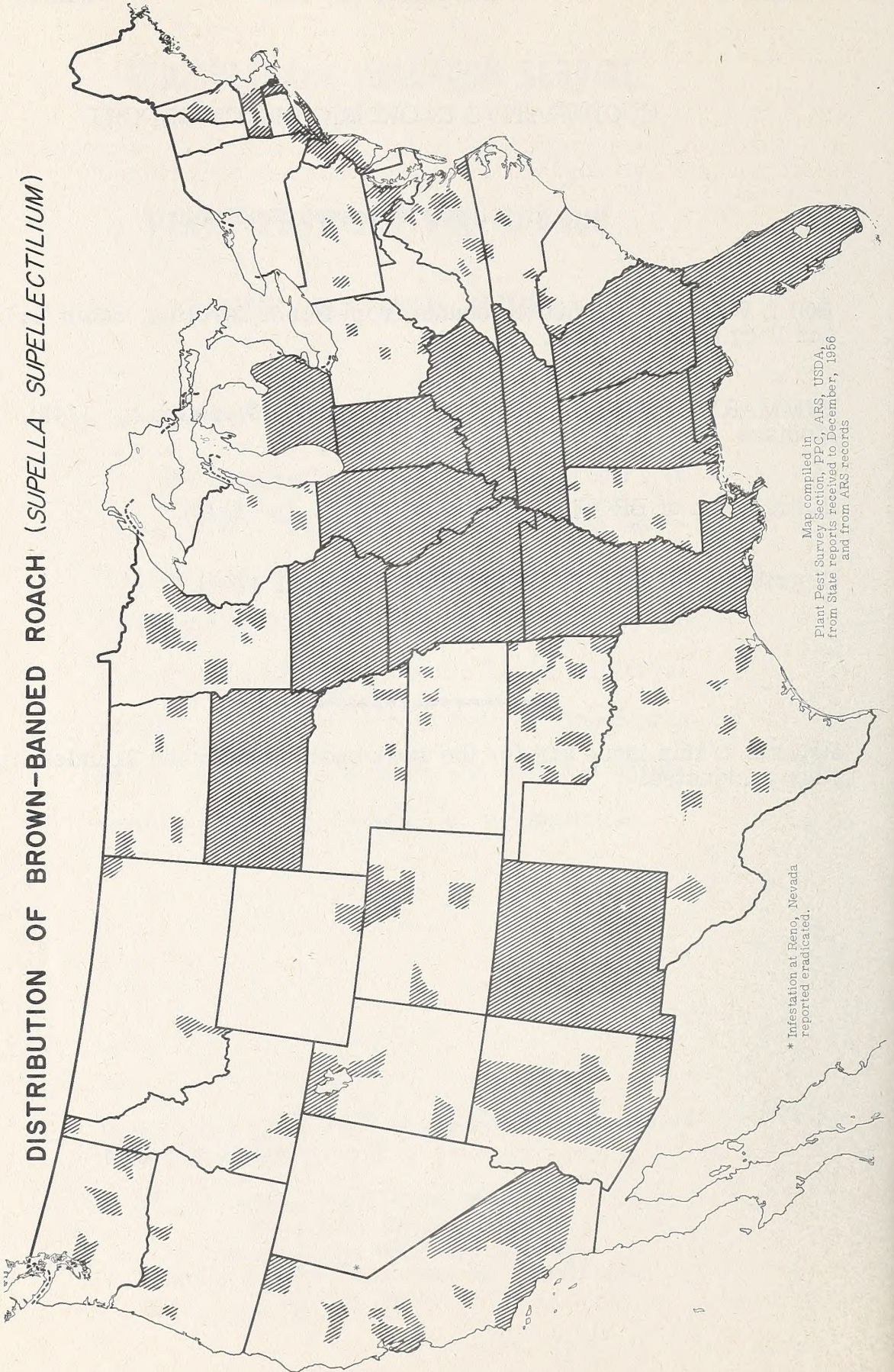
SUMMARY OF INSECT CONDITIONS - 1956 - Wyoming (p. 1143), Montana (p. 1144), North Dakota (1146).

Distribution of BROWN-BANDED ROACH. (p. 1140).

Distribution of RANGE GRASSHOPPERS. (p. 1149).

Reports in this issue are for the week ending December 21 unless otherwise designated.

DISTRIBUTION OF BROWN-BANDED ROACH (SUPELLA SUPELLECTILIUM)



* Infestation at Reno, Nevada reported eradicated.

Map compiled in Plant Pest Survey Section, PPC, ARS, USDA from State reports received to December, 1956 and from ARS records

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID - CALIFORNIA - Infestation found at San Andreas, Dec. 12, for a first record in Calaveras County, bringing total number of counties infested to 38. Progressive, local spread in the Sacramento and San Joaquin Valley areas has been primarily responsible for a 350,000 acre increased infestation over 1955. (Cal. Coop. Rept., Dec. 14).

YELLOW SUGARCANE APHID (*Sipha flava*) - FLORIDA - Lightly infesting pangola grass at Belle Glade, Palm Beach County. (Genung).

FRUIT INSECTS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Conditions favorable for build-up in interior districts and trees relatively free of infestations in early season now have light to medium infestations. Normal or above-normal build up in coastal areas. (Sunkist Pest Cont. Cir., December).

COTTON INSECTS

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Gin trash inspections of 602 bushels at El Centro and 100 in the Bard district showed no larvae. Inspection of 5952 bushels of gin trash in Imperial County, Nov. 19-to Dec. 12 showed no infestations. During this period 4675 bolls were cut and examined from 45 fields with no infestation found. (Cal. Coop. Rept., Dec. 14). ARIZONA - Gin trash inspections begun Oct. 1 now completed. Larvae recovered in three of the five counties in quarantine area--Greenlee, Graham, Cochise. No larvae found in Pima and Santa Cruz Counties nor in any counties in the non-quarantined area--Pinal, Maricopa and Yuma. Of 6086 bushels of gin trash inspected, 213 larvae were recovered. From 245 lint cleaners inspected, seven larvae were recovered. NEW MEXICO - Gin trash inspection completed. Larvae found in each of the gins inspected at Hatch, Deming and Cotton City. Cold weather killed most of larvae in material standing in fields. On Nov. 13, 88 percent of the larvae were alive; on Nov. 29, 100 percent of the larvae were dead. Lint cleaner inspections at three cotton gins in Roosevelt County showed three larvae. (PPC, Western Reg., Dec. 8).

Boll Weevil Hibernation Counts in North Carolina, South Carolina and Virginia: Five areas were selected and 30 farm sites were used in each area. Three samples of surface woods trash consisting of two square yards each were taken at each site. Sampling was begun on Nov. 13 and completed Dec. 13. In area 1, consisting of Orangeburg, Dorchester and Bamberg Counties, South Carolina, an average of 3712 live weevils was found per acre with a range of 0-15,333. In area 2, consisting of Darlington, Marlboro, and Florence Counties, South Carolina and Scotland County, North Carolina, an average of 8635 live weevils per acre was found with a range of 807 to 58,104. In area 3, consisting of Anderson,

Greenville and Spartanburg Counties, South Carolina and Mecklenburg, Cleveland and Union Counties, North Carolina, an average of 6268 live weevils per acre was found with a range of 0-19,368. In area 4, consisting of Nash, Wilson, Franklin and Edgecombe Counties, North Carolina, an average of 4815 live weevils per acre was found with a range of 0-17,754. In area 5, consisting of Southampton, Nansemond, Mecklenburg and Brunswick Counties, Virginia, an average of 4169 live weevils per acre was found with a range of 0-37,122. In Florence County, South Carolina, this year's counts (5,757 per acre) were 1.1 times the average for the period 1938-56, but considerably lower than fall of 1955 when 11,398 weevils per acre were recorded. In only three years (1949, 1952 and 1955) did counts exceed the number found in fall 1956. (Walker, Hopkins, Jernigan).

INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (Hypoderma lineatum) - FLORIDA - Larvae averaging 5 per animal on 60 inspected at Belle Glade. (Harris, Dec. 5).

STORED PRODUCTS INSECTS

STORED-GRAIN INSECTS - ARKANSAS - Forty bins of rice in Stuttgart-Dewitt areas infested as follows: rice weevil - 1 bin, Tribolium sp. - 12 bins, saw-toothed grain beetle - 16 bins, Angoumois grain moth - 12 bins, Indian-meal moth - 3 bins, lesser grain borer - 1 bin, Flat grain beetles - 2 bins, and fungus beetles - 3 bins. (Rouse).

INDIAN-MEAL MOTH (Plodia interpunctella) - OREGON - Adults reared from larvae found in uncracked stored walnuts at Corvallis proved to be this species. Apparently newly-hatched larvae entered nuts through minute openings of imperfectly-sealed nuts. Many reports of stored (cracked) filberts and walnuts being infested by this pest. (Capizzi).

LIGHT TRAP COLLECTIONS

SOUTH CAROLINA - Clemson, December 7-21: Pseudaletia unipuncta 11, Agrotis ypsilon 6, A. malefida 31, Feltia subterranea 4, Peridroma margaritosa 2. ARKANSAS - Fayetteville, November 10-December 20: P. unipuncta 22, A. ypsilon 11, Heliothis zea 14 (none after November 15).

SUMMARY OF INSECT CONDITIONS - 1956

WYOMING

Reported by E. W. Spackman

Highlights: The conditions in Wyoming during 1956 were unusually favorable to grasshopper development. Very heavy populations developed where non-economic numbers were expected. According to the survey reports there were approximately 200,000 acres expected to require control measures and before the season terminated over a million acres were infested with economic numbers. Mosquito populations were quite high again this year. The forest tent caterpillar caused damage to trees in a number of towns. Although the spotted alfalfa aphid was found in the neighboring states, it was not found in Wyoming as of November 30, 1956. Clover head aphid was present in large numbers in Park County causing quite a problem in harvesting red clover seed.

Cereal and Forage Insects: Range GRASSHOPPERS were controlled on 239,852 acres of private-owned land and 30,275 acres of Federal-owned land at a total cost of \$136,824. Throughout the State the dominant species was Aulocara ellioti which caused a high loss of grass. The most severe grasshopper infestation in cropland occurred in Park and Lincoln Counties. In these areas, Melanoplus bivittatus, M. packardii, and M. femur-rubrum were the main species. MORMON CRICKETS were controlled on range land on 6,100 acres of private-owned land and 1,414 acres of Federal-owned land at a total cost of \$4,883. PEA APHID (Macrosiphum pisi) infestations were normally high throughout the State on alfalfa. ALFALFA WEEVIL (Hypera postica) has spread throughout the alfalfa-growing areas. TARNISHED PLANT BUG (Lygus lineolaris) caused some damage in the alfalfa seed crop areas in Fremont County. ALFALFA WEBWORM (Loxostege commixtalis) were reported causing damage in Lincoln County during late June. CLOVER ROOT CURCULIO (Sitona hispidula) adults were found, 1-4 per crown, on alfalfa in western counties where no alfalfa weevil control was applied. A very few SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) were found on alfalfa in the southeast corner of the State. CORN EARWORM (Heliothis zea) started causing damage to field corn in Platte and Goshen Counties during mid-August. CORN LEAF APHID (Rhopalosiphum maidis) caused severe damage again this year to oats and barley in the Big Horn Basin and was also present on corn in Goshen and Platte Counties. EUROPEAN CORN BORER (Pyrausta nubilalis) infestation was found this year. WIREWORMS caused some concern on winter plantings during September in Goshen County.

Truck Crops: POTATO PSYLLID (Paratrioza cockerelli) had moved across Wyoming to the potato-growing areas of Park County by the latter part of July. POTATO LEAFHOPPER (Empoasca fabae) was very light on potatoes near Pine Bluffs. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) became abundant on potatoes at Powell during the second week of July. MEXICAN BEAN BEETLE (Epilachna varivestis) was not found in the northern part but did cause some damage to beans in the Goshen

County area; also some adults were found on alfalfa here. BEET WEBWORM (Loxostege sticticalis) was general on sugar beets through August in Goshen County area. ALFALFA WEBWORM (L. commixtalis) was reported causing damage to sugar beets in Lincoln County during June. EARWIGS caused some concern in gardens in Lincoln County. No other area has reported this insect as a problem, although a specimen was collected at Rawlins during 1955. TOMATO HORNWORMS (Protoparce sp.) also caused some trouble in gardens. STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) was present in Worland and SLUGS caused some concern in Lincoln County.

Forest, Ornamental and Shade Tree Insects: MITES were quite general throughout the State on raspberries as well as shrubs. FOREST TENT CATERPILLAR (Malacosoma disstria) was very severe in towns defoliating a large number of trees in Casper and Worland during early June. EUROPEAN ELM SCALE (Gossyparia spuria) populations were quite heavy with very little control being applied. Trees infested with the DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) near Hyattville were to be cut for control of the beetle. It was reported that epidemic or near epidemic conditions of the MOUNTAIN PINE BEETLE (Dendroctonus monticolae) existed in lodgepole pine. A secondary BARK BEETLE (tentatively identified as Scolytus tsugae) in Douglas-fir also occurred in Shoshone National Forest. This information of forest insects was supplied by the Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado and the Wyoming State Forester. A LEAF MINER was observed causing damage generally to the poplar.

Man and Animal Pests: MOSQUITOES were generally heavy throughout the State. HORN FLIES, CATTLE GRUBS, CATTLE LICE and SHEEP KED were not above normal and did not cause any unusual trouble. CLOVER MITE (Bryobia praetiosa) caused normal annoyance in homes.

SUMMARY OF INSECT CONDITIONS - 1956

MONTANA

Reported by George Roemhild

Cereal and Forage Insects: ARMY CUTWORM (Chorizagrotis auxiliaris) was lighter than usual this year and economic infestations were reported only from scattered spots in the Yellowstone Valley. ALFALFA WEEVIL (Hypera postica) is now present over most of the State east of the Continental Divide and control measures are taken accordingly. BLISTER BEETLES (Lytta nuttalli, L. sphaericollis, L. cyanipennis) were more abundant than usual this year on alfalfa and leguminous ornamentals. They were especially troublesome in the central and northern areas. CLOVER APHID (Anuraphis bakeri) occurred in greater numbers than usual this year, especially in the south central part of the State in Yellowstone, Carbon and Stillwater Counties. A MIRID (Labops sp.) attacked wheat and

crested wheat grass in Fergus and McCone Counties. The DIAMOND-BACK MOTH (Plutella maculipennis) occurred in damaging numbers on mustard in Pondera County late in the season. There were a few reports of ENGLISH GRAIN APHID (Macrosiphum granarium). EUROPEAN CORN BORER (Pyrausta nubilalis) does not appear to be extending its range from the lower Yellowstone Valley in eastern Montana. FALSE WIREWORMS occurred in damaging numbers in eastern and northeastern areas. LYGUS BUGS (Lygus spp.) are of importance in alfalfa seed production in southeastern and south central counties. PALE WESTERN CUTWORM (Agrotis orthogonia) occurred in greater numbers than usual in north central Montana where several thousand acres were either treated or replanted. A MIRID (Stenodema sp.) occurred on tall wheatgrass and crested wheatgrass in Lake and Yellowstone Counties where it did considerable damage. WHEAT HEAD ARMYWORM (Faronta diffusa) was found only in local areas in Chouteau County. WHEAT JOINTWORM (Harmolita tritici) occurred in scattered infestations with the most heavy damage in Stillwater County with 90 percent of the plants in some fields infested. WHEAT STEM SAWFLY (Cephus cinctus) continues to be of considerable economic importance especially in the northeastern part of the State. WIREWORMS damaged grain in the northern tier of counties and the southern mountain valleys. GRASSHOPPERS (rangeland) - Approximately two million acres of range are infested in central, south central, and southwestern Montana. The most damaging species is Aulocara elliotti. Other economic species are Ageneotettix deorum, Amphitornus coloradus, Camnula pellucida, Aeropedellus clavatus. (Cropland species) - Approximately one million acres of cropland are infested in north central and eastern Montana. Economic species are Melanoplus bivitatus, M. mexicanus, M. femur-rubrum.

Fruit Insects: BLACK CHERRY FRUIT FLY (Rhagoletis fausta) occurred in economic numbers in Lake, Flathead, and Ravalli Counties. PEAR-SLUG (Caliroa cerasi) was present in only scattered numbers in western and south central areas. CURRANT APHID (Capitophorus ribis) occurred in the northwestern and south central part of the State. The FOREST TENT CATERPILLAR (Malacosoma disstria) did considerable defoliation to back yard trees in the northern and western areas. SPIDER MITES of various species occurred in unusually large numbers over most of the State on apple, raspberry, currant, and many ornamentals. STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) caused local economic damage in Broadwater and other counties. Two PLUM MITES (Vasates fockeui and Diptacus gigantorhynchus) caused considerable concern in Lake and Flathead Counties on cherries.

Forest, Ornamental and Shade Tree Insects: During the past few years many shelter belts have been planted in Montana and consequently many new species of defoliating insects are becoming of economic importance. The more common species encountered: ash plant bug (Neoborus amoenus); a cecidomyid causing galls on a ash; carpenterworm (Prionoxystus robiniae); cottonwood leaf beetle (Chrysomela scripta); a lepidopterous cottonwood leaf miner; poplar petiole gall aphid (Pemphigus populi-transversus); cottonwood stem gall mites (Eriophyes sp.); elm leaf aphid (Myzocallis ulmifolii);

mourning-cloak butterfly (Nymphalis antiopa); a tent caterpillar (Malacosoma lutescens); and vagabond gall (Mordwilkoja vagabunda). On evergreens the following pests were common: Cooley spruce gall aphid (Chermes cooleyi); a borer (Phloeosinus dentatus); pine needle scale, (Phenacaspis pinifoliae); spruce budworm (Choristoneura fumiferana) and spruce needle miner (Taniva albolineana).

Man and Animal Pests: MOSQUITOES were abundant in heavy soil and irrigated areas of the State. CATTLE LOUSE and GRUB populations appeared to be about normal. WOOD TICKS (Dermacentor sp.) were abundant in eastern Montana and caused some loss in sheep due to tick paralysis.

Stored Grain and Household Pests: Economic stored grain insect infestations appeared very low during the 1955-56 season. Apparently more infestations were present this season. The most common pests are: Laemophloeus pusillus, Tribolium confusum, T. castaneum, Oryzaephilus surinamensis, Tyrophagus sp. The most common household pests in the State are DERMESTIDS, including Attagenus piceus and Trogoderma sp. MITES were found infesting one building; they originated from pigeon nests in an abandoned ventilating system. The SWALLOW BUG (Oeciocercus vicarius) was found in a schoolhouse. BLACK WIDOW SPIDERS (Latrodectus mactans) were more numerous than usual. CLOVER MITES (Bryobia praetiosa) were not as numerous.

SUMMARY OF INSECT CONDITIONS - 1956

NORTH DAKOTA

Report by
N. D. Insect and Plant
Pest Reporting Service

Cereal and Forage Insects: A general build-up of economic GRASSHOPPER species continued in many areas. Fall surveys show a potential grasshopper problem existing in three-fifths of the State. Of major importance on cropland during 1956 were Melanoplus bivittatus, M. femur-rubrum, M. differentialis, and M. mexicanus. M. mexicanus showed a substantial increase in numbers over the 1955 season on both cropland and range. An increased population of M. differentialis was also noted on cropland in eastern areas. Grasshopper damage was confined mostly to late crops of flax, alfalfa, and soybeans. Chemical control measures were applied to an estimated one million acres of cropland to protect it from grasshopper damage during the season. Potential infestations point to a possible severe grasshopper outbreak in 1957. EUROPEAN CORN BORER (Pyrausta nubilalis) winter mortality was estimated at 80 percent in major southeastern corn-growing counties. Pupation of overwintering borer was complete on June 29 with moth emergence and egg-laying well underway at that time. Hatch of first generation appeared complete on July 20 with 20 percent of the plants showing borer infestation. The fall abundance survey in eight eastern counties showed borer populations down considerably compared with the high infestation of 1955. The averages

for districts surveyed are as follows:

	Average Infestation	Avg. No. Borers Per 100 Plants
District I (Grand Forks and Traill Counties)	48%	38.4
District II (Cass and Richland Counties)	47%	51.7
District III (Ransom and Sargent Counties)	34%	59.5
District V (Barnes and Steele Counties)	36%	28.8

Only a few reports of WIREWORM damage to spring wheat were received during the season. However, the damage was severe in a few of these fields. Areas of most severe infestation by WHEAT STEM SAWFLY (Cephus cinctus) continued to be southern Mountrail, southwestern Ward, and western McLean Counties. Some fields in Williams, Divide, Burke, Renville, Bottineau, and Golden Valley Counties also had heavy infestations. Non-economic infestations were generally the case in other areas of the State. Light trap collection at Fargo showed adult ARMYWORMS May 15. By June 8, numerous moths were being collected (432 collected during a 5-day period). Larval infestations, mostly non-economic, were observed in small grain fields throughout southeastern section during the week of July 20. Some chemical controls were applied but this was confined mostly to certified seed-increase fields of small grain, chiefly barley. SWEETCLOVER WEEVIL (Sitona cylindricollis) defoliation ranged from a trace to 50 percent in fields of seedling sweetclover through northeastern areas. Infestations varied greatly from field to field. In northern valley counties SWEETCLOVER APHID (Myzocallidium riehmi) infested 10-100 percent of the seedling plants. No particular damage was noted in mature fields. However, late June observations showed some leaf yellowing from aphid feeding. A preliminary check of fields in the infested area recently showed good stands of first year sweetclover. First reported occurrence of ALFALFA WEEVIL (Hypera postica) was made in June, 1955. Survey this season shows the weevil infesting five southwestern counties. All infestations were in trace amounts only. No known economic damage has occurred so far. Variable infestations of THRIPS occurred in barley fields throughout eastern North Dakota. Amount of damage has not been determined because of the limited information available on this pest. Several infestations of BLISTER BEETLES requiring chemical control were reported in soybeans and alfalfa this season. For the most part, however, even fairly high populations in these crops did not appear to cause damage where left uncontrolled. Larval infestations of WEBWORMS (Loxostege spp.) damaged soybeans and small grain field margins at several locations. WHEAT STEM MAGGOT (Meromyza americana) infestations were conspicuous in scattered spring wheat fields through southeastern North Dakota. However, for the State as a whole the infestations appeared lighter than for several years. Scattered light infestations WHEAT MIDGE (Sitodiplosis mosellana) attacked spring wheat in eastern Pembina County. ALFALFA CATERPILLAR (Colias philodice eurytheme) adults were numerous over alfalfa fields in southeastern North Dakota during August. Larvae in alfalfa were non-economic.

Truck Crop Insects: Mostly light infestations of COLORADO POTATO BEETLE (Leptinotarsa decemlineata) were present in commercial potato-growing areas of the Red River Valley. Infestations of FLEA BEETLES during June appeared heavier than usual throughout the upper Red River Valley. Lack of control during August of 1955 may have contributed to flea beetle abundance this season. High populations of POTATO LEAF-HOPPER (Empoasca fabae) caused "hopperburn" injury where fields had not been treated regularly. High populations of STRIPED CUCUMBER BEETLE (Acalymma vittata) damaged cucumbers, melons, and squash over a wide area in eastern N. D. Moderate larval infestations of IMPORTED CABBAGEWORM (Pieris rapae) were reported attacking susceptible crucifers this season. Moths were extremely numerous during August.

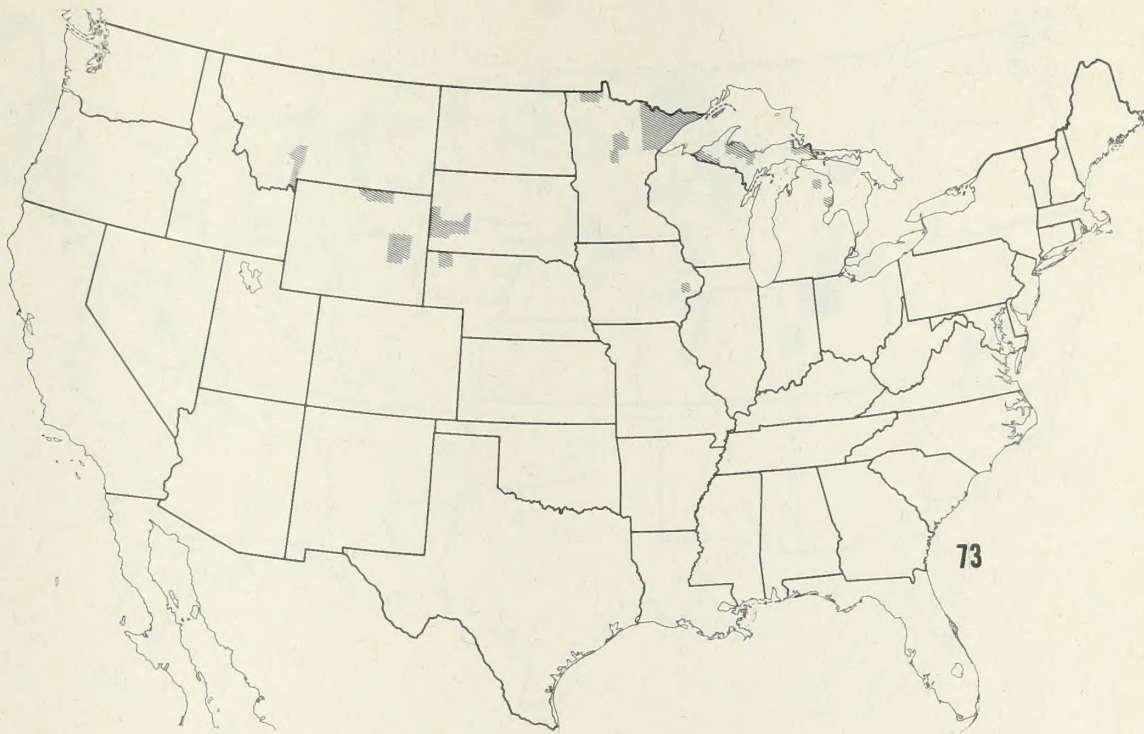
Ornamental and Shade Tree Insects: Heavy infestations of OYSTERSHELL SCALE (Lepidosaphes ulmi) were reported on cotoneaster from many areas. Infestations of PINE NEEDLE SCALE (Phenacaspis pinifoliae) are becoming more numerous in southwestern and northeastern area. Heavy infestations of SPRUCE SPIDER MITE (Oligonychus ununguis) attacked spruce and juniper during early June. Heavy infestations of APHIDS occurred on numerous deciduous and perennial plant species this season. MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) larvae were more numerous this season than in several years. Defoliation of trees was reported from many areas. Defoliation of caragana hedges by BLISTER BEETLES occurred in many areas. FALL WEBWORM (Hyphantria cunea) infestations were distributed over a wide area. Webbing and defoliation of trees in farm groves through southeastern Benson County was extremely heavy. Some groves showed infestations covering 50 to 75 percent of tree surface. Medium to heavy LEAFHOPPER infestations on caragana were common in nursery plantings.

Insects Affecting Man and Animals: SHORT-NOSED CATTLE LOUSE (Haematopinus eurysternus)-Late winter surveys showed medium infestations attacking 28 percent of the animals inspected. Light to medium infestations of CATTLE BITING LOUSE (Bovicola bovis) on young dairy cattle were observed where no chemical control had been applied. Light infestations of LONG-NOSED CATTLE LOUSE (Linognathus vituli) were observed in a few localities during the winter. COMMON CATTLE GRUB (Hypoderma lineatum) was found infesting 43 percent of the animals examined during a February survey conducted in western North Dakota. Infestations were mostly light in nature. Infested animals appeared more numerous in Adams County than in other areas surveyed.

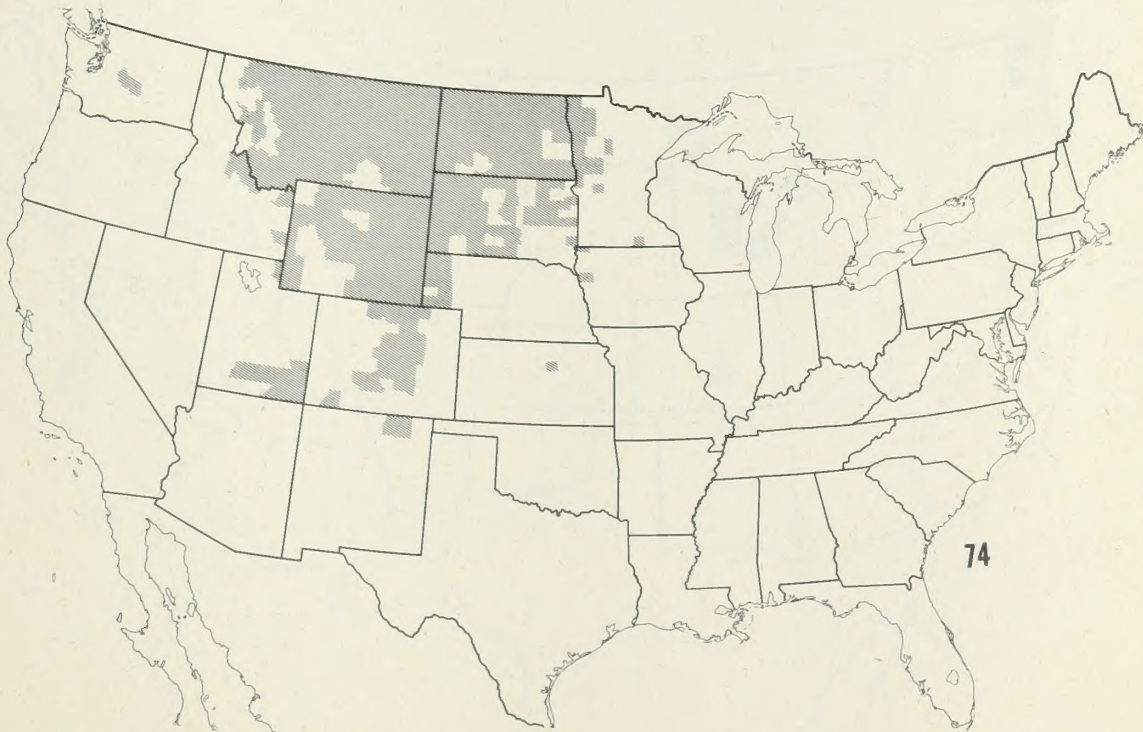
Household Insects: BROWN-BANDED ROACH (Supella supellectilium) was first reported from North Dakota in 1954. Subsequent infestations occurring in widely scattered areas show that this species is becoming established in North Dakota.

DISTRIBUTION OF RANGE GRASSHOPPERS

Melanoplus huroni Blatchley

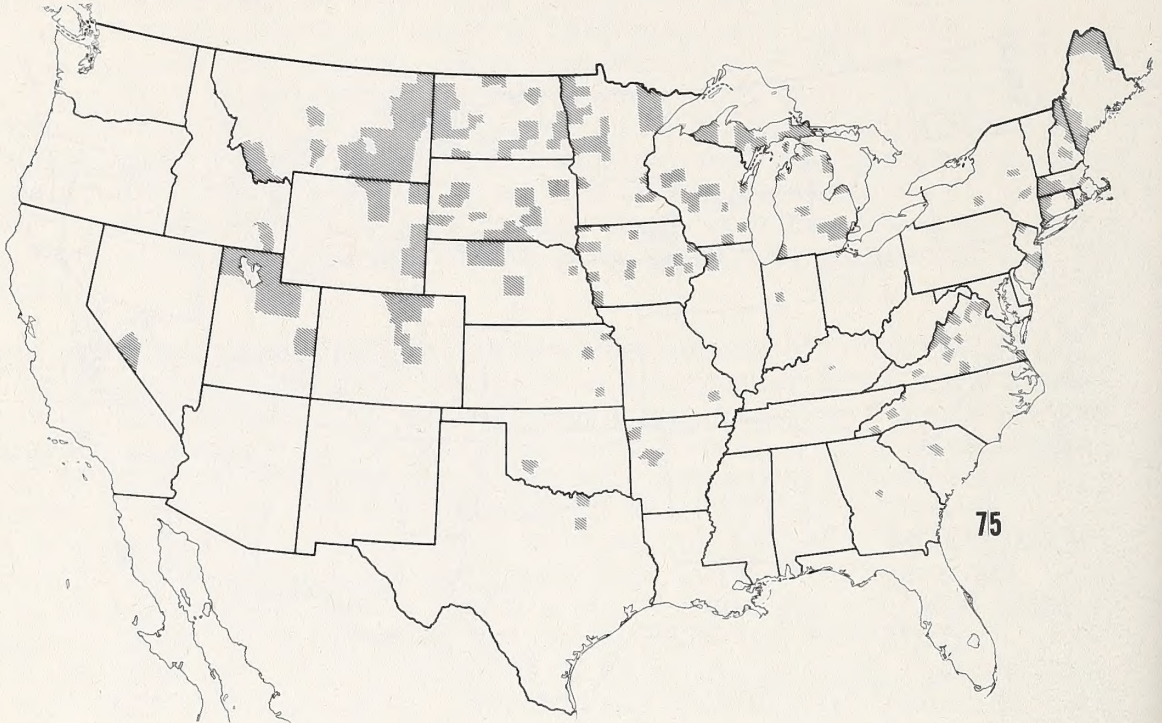


Melanoplus infantilis Scudder



DISTRIBUTION OF RANGE GRASSHOPPERS

Melanoplus keeleri (Thomas)



Melanoplus kennicotti Scudder

