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CURRENT SERIAL RECORDS

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

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

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Increased adult populations of a WEEVIL (Hypera brunneipennis) noted in Yuma and Maricopa Counties, Arizona; as many as 150 per 100 sweeps found on Yuma Mesa. SPOTTED ALFALFA APHID increasing in alfalfa in Yuma, Maricopa and Pinal Counties, Arizona; averaged 1,000 per 100 sweeps in infested fields. (p. 71).

GREEN PEACH APHID, MELON APHID and BEET ARMYWORM increasing on lettuce in Arizona, with some controls necessary. (pp. 71, 72).

EASTERN TENT CATERPILLAR eggs hatching in Alachua County, Florida. This is somewhat earlier than average for past 18 years. (p. 72).

DETECTION

PRIVET MITE (Brevipalpus obovatus) reported for first time from Riverside County, California. (p. 73).

ADDITIONAL NOTES

See page 74.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 76).

Summary of Insect Conditions in Hawaii - 1964. (pp. 77-79).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Corn (for grain) and Corn (for silage) in Wyoming in 1964. (p. 80).

Reports in this issue are for week ending January 29, unless otherwise indicated.

WEATHER BUREAU'S 30-DAY OUTLOOK

FEBRUARY 1965

The Weather Bureau's 30-day outlook for February calls for temperatures to average below seasonal normals west of the Continental Divide and over most of the northern half of the Nation east of the Divide. Above normal averages are expected over the southern Rockies as well as the South, where the current cold weather is expected to moderate by midmonth. Near normal temperatures are anticipated in unspecified areas. Precipitation is expected to exceed normal from the gulf coast region northeastward through the Ohio Valley to New England and also from California northeastward over the Great Basin to the northern Plains. Much of this precipitation will be in the form of snow in central and northern portions. Subnormal precipitation is called for over the southern Rockies while near normal totals are predicted elsewhere.

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

WEATHER OF THE WEEK ENDING FEBRUARY 1

Winter maintained its grip over the Northern States from the Rocky Mountains to the Atlantic Ocean. Snow, sleet, or freezing rain fell over much of the area.

TEMPERATURE: Temperatures dropped over most of the Nation during the past week. The cold weather came gradually during the first part of the week but temperatures fell rapidly during the latter part with readings below 40° below zero at several Minnesota stations. Most of the northern and central Great Plains averaged 10° to 20° colder than the previous week. The Far Northwest averaged 3° to 8° warmer than the week before. Although colder than the previous week, temperatures averaged above normal from eastern California to the Rocky Mountains and the Texas high plains. Temperatures averaged below normal over the northern and central Great Plains and eastward to the Atlantic Ocean. Portions of the northern Great Plains averaged more than 10° below normal.

PRECIPITATION: Only sparse precipitation, generally less than 0.25 inch, fell over the southern half of the Nation. Elsewhere, except in the Far Northwest, most weekly totals were less than 1 inch. Portions of Washington, Oregon, and Idaho received several inches of rain.

SNOW: Early in the week, several inches of snow fell over the Midwest, covering the glaze that occurred during the previous weekend. The weight of the ice and snow and falling tree branches put more powerlines down, leaving thousands of persons without electricity. During the latter part of the week moderate to heavy snow fell from the central Rocky Mountains to New England. In many eastern sections this was the fourth week with a snowstorm. Some areas to the lee of Lake Erie and Lake Ontario received 9 to 15 inches. Some sleet and freezing rain fell south of the snow belt. Blizzards occurred from Montana to Missouri with winds gusting to 40 to 60 m.p.h. East of the Rockies, snow now covers the northern half of the Country. The snow line has advanced southward some 300 miles in the last few weeks. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Averaged 30 per linear foot in wheat in Muskogee and Le Flore Counties; ranged 8-18 per linear foot in wheat in Tulsa and Sequoyah Counties. Other linear foot counts: Jackson County 6, Marshall County 5 and Noble County 0-2. (Okla. Coop. Sur.). NEW MEXICO - Remains light in small grain fields in Roosevelt, Curry and Quay Counties. (N.M. Coop. Rpt.). GEORGIA - Light on small grains in northwest, north and northeast areas. (Johnson).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - OKLAHOMA - Average per linear foot in wheat, 1 in Tulsa and 2 in Jackson Counties. (Okla. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Light in Luna County barley fields; averaged 4 per 25 sweeps. (N.M. Coop. Rpt.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - OKLAHOMA - Ranged 0-1.5 per linear foot in wheat in Tulsa, Le Flore, Sequoyah and Marshall Counties. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - OKLAHOMA - Adults active in wheat in Sequoyah County; numbers light. (Okla. Coop. Sur.).

WINTER GRAIN MITE (*Penthaleus major*) - TEXAS - Light, widespread infestations on small grains in Hunt County. (Turney).

ALFALFA WEEVIL (*Hypera postica*) - GEORGIA - Larvae light on alfalfa in northeast; crop approximately 1 inch high. (Johnson).

A WEEVIL (*Hypera brunneipennis*) - ARIZONA - Increased adult populations found in Yuma County and the base line area of Maricopa County. Averaged 40 per 100 sweeps in Yuma County, 150 on Yuma Mesa and 30 in Maricopa County. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Increasing in alfalfa fields of Yuma, Maricopa and Pinal Counties; counts in infested fields average 1,000 per 100 sweeps. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - FLORIDA - Adults and nymphs light but increasing on alfalfa at Gainesville, Alachua County. (Mead). NEW MEXICO - Very light in alfalfa near Deming, Luna County. (N.M. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Average 30 per 100 sweeps in alfalfa in Yuma County and 45 per 100 sweeps in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

FRUIT INSECTS

SAN JOSE SCALE (*Aspidiotus perniciosus*) - TEXAS - Light to moderate on several small peach trees in Montague County home orchard. (Turney).

PECAN WEEVIL (*Curculio caryae*) - TEXAS - Grubs locally heavy in pecans in Kimble County. (VanCleave, Nethery).

OMNIVOROUS LOOPER (*Sabulodes caberata*) - CALIFORNIA - Larvae light on citrus nursery stock in Bonsall, San Diego County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

GREEN PEACH APHID (*Myzus persicae*) - OKLAHOMA - Light on spinach in Tulsa and Wagoner Counties. (Okla. Coop. Sur.). ARIZONA - Increasing in lettuce in Yuma County; some controls necessary. Light numbers appearing in sugar beet fields in Maricopa County. (Ariz. Coop. Sur.).

MELON APHID (Aphis gossypii) - ARIZONA - Increasing on lettuce in Yuma County; controls required in many fields. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Light to medium on lettuce fields in Yuma and Maricopa Counties; some controls necessary in Yuma County. (Ariz. Coop. Sur.).

DIAMONDBACK MOTH (Plutella maculipennis) - CALIFORNIA - Larvae feeding on radish plants in western Fresno County. (Cal. Coop. Rpt.).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Larvae infesting turnips in western Fresno County. (Cal. Coop. Rpt.).

STRAWBERRY APHID (Pentatrichopus fragaefolii) - CALIFORNIA - Light on strawberry plants in Fowler, Fresno County. (Cal. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

EASTERN TENT CATERPILLAR (Malacosoma americanum) - FLORIDA - Eggs and larvae collected on Chickasaw plum (Prunus angustifolia) at Gainesville, Alachua County. Det. by L. A. Hetrick. Egg masses hatching locally; somewhat earlier than average of past 18 years. Fewer egg masses than in previous years. (Fla. Coop. Sur.).

AZALEA LEAF MINER (Gracilaria azaleella) - CALIFORNIA - Heavy on azalea plants locally in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

DOGWOOD BORER (Thamnospectia scitula) - ALABAMA - Isolated dogwood trees previously injured near ground line attacked by larvae. Isolated trees with 1-5 larvae per tree noted. (McQueen).

AN AMATID MOTH (Lymire edwardsii) - FLORIDA - Larvae general and scattered on leaves of Ficus exotica at Hollywood, Broward County. (Shirah, Jan. 20).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - ALABAMA - Larvae and pupae rather heavy under old, native vegetation in large ornamental nursery in Escambia County. (Lemons).

APHIDS - NEW MEXICO - Unspecified species ranged light to heavy on rose foliage at Las Cruces, Dona Ana County. (N.M. Coop. Rpt.). ARIZONA - Heavy population of Lachnus salignus on ornamentals in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

A CONIFER APHID (Cinara tujafilina) - NEW MEXICO - Moderately heavy on arborvitae around homes at Deming, Luna County. (N.M. Coop. Rpt.). OKLAHOMA - Light on arborvitae in Marshall County. (Okla. Coop. Sur.).

COTTON LACE BUG (Corythucha gossypii) - FLORIDA - Adults and nymphs moderate on leaves of angels-trumpet (Datura arborea) at West Palm Beach, Palm Beach County. (Long).

PYRIFORM SCALE (Protopulvinaria pyriformis) - CALIFORNIA - Heavy on Laurus nobilis and Aralia sieboldi locally in Pacific Palisades, Los Angeles County. (Cal. Coop. Rpt.).

SPRUCE BUD SCALE (Physokermes piceae) - CALIFORNIA - Medium on Picea spp. nursery stock in Menlo Park, San Mateo County. (Cal. Coop. Rpt.).

EUONYMUS SCALE (Unaspis euonymi) - OKLAHOMA - Moderate and damaging euonymus plants in Garfield County. (Okla. Coop. Sur.).

Coccids in Florida - Adults of Pseudococcus citri (citrus mealybug) severe on leaves of 25 inspected Philodendron cordatum plants at Plymouth (Jan. 19) and moderate on Polyscias balfouriana in nursery at Apopka, Orange County; Coccus hesperidum (brown soft scale) adults severe on leaves of English ivy in nursery at Apopka. (Musgrove, Jan. 20). Eriococcus araucariae (a dactylopid scale) generally infesting Norfolk Island-pine at Miami, Dade County. Adults of Howardia biclavis (mining scale) moderate on stems of 10 gardenia plants in nursery in Miami. Parlatoria crotonis (an armored scale) on corton plant at Miami. (Herrmann, Brown, Jan. 20). All stages of Pseudaulacaspis pentagona (white peach scale) severe on leaves of Pelargonium domesticum at Daytona Beach, Volusia County. (Pott, Jan. 20). Adults and nymphs of Icerya purchasi (cottony-cushion scale) taken on tung-oil tree (Aleurites fordii) at Gainesville, Alachua County; det. by L. A. Hetrick. (Hetrick, Jan. 24).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Moderate and damaging euonymus plants in Garfield County; moderate on evergreens in Tulsa County and light in Payne County. (Okla. Coop. Sur.).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Medium on Ligustrum sp. locally in Riverside, Riverside County. This is a new county record. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Light to moderate on cattle in Garvin, Bryan, Cotton, Cleveland and Hughes Counties. Average 8 per head on yearlings in Marshall County; ranged 5-10 per head on yearlings and 20-40 on bulls in Ottawa County. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Several species moderate to heavy on cattle in Bryan, Garvin, Marshall, Cotton, Pushmataha and Hughes Counties. (Okla. Coop. Sur.).
TEXAS - Linognathus vituli (long-nosed cattle louse) heavy on slaughtered calf in Brazos County. (Price).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Moderate on hogs in Pushmataha County. (Okla. Coop. Sur.).

EAR TICK (Otobius megnini) - TEXAS - Moderate on local herds of cattle in Limestone County. (Texas Coop. Rpt.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Moderate (averaged 12 per head) on cattle in Pushmataha County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

COCKROACHES - UTAH - Infesting additional home in Logan, Cache County. Supella supellecillum (brown-banded cockroach) difficult to eliminate from prefabricated apartments in one area of Logan. (Knowlton). MARYLAND - Blatta orientalis (oriental cockroach) infested property in Frederick, Frederick County. (U. Md., Ent. Dept.).

EARWIGS - TEXAS - Entering homes in Matagorda County; causing concern. (Mercer).

A CARPENTER ANT (Camponotus sp.) - CALIFORNIA - Heavy in windows of chemistry laboratory in Anaheim, Orange County. (Cal. Coop. Rpt.).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Noted on and in home at Glenarm, Baltimore County. (U. Md., Ent. Dept.).

A MOTH FLY (Telmatoscopus albipunctatus) - MARYLAND - Adults appeared in home at Baltimore. (U. Md., Ent. Dept.).

WESTERN SUBTERRANEAN TERMITE (Reticulitermes hesperus) - CALIFORNIA - Heavy in cement block building in Oroville, Butte County. (Cal. Coop. Rpt.).

SOUTHERN LYCTUS BEETLE (Lyctus planicollis) - TEXAS - Locally heavy infestations, probably this species, in ash cabinets in Baylor County homes. (Texas Coop. Rpt., McClung).

STORED-PRODUCT INSECTS

RICE WEEVIL (Sitophilus oryzae) - ALABAMA - Untreated corn in poor storage facilities heavily attacked. Up to 50 adults per ear in some corn in Lee County fields; averaged 5 per ear. (McQueen).

BEAN WEEVIL (Acanthoscelides obtectus) - TEXAS - Reported in stored clover seed in Bee County. (Texas Coop. Rpt., Edgar).

BENEFICIAL INSECTS

LADY BEETLES - ARIZONA - Several species abundant in alfalfa fields in Yuma and western Maricopa Counties. (Ariz. Coop. Sur.).

A BRACONID (Macrocentrus n. sp.) - MARYLAND - Reared from pupa of Dioryctria zimmermani (Zimmerman pine moth) in fall of 1964 by F. E. Wood and R. Moore. Host collected in cone of loblolly pine September 23, 1964, at Quantico, Wicomico County. Macrocentrus n. sp. determined by C. F. W. Muesebeck. (U. Md., Ent. Dept.). See also Zimmerman pine moth note in CEIR 14(50): 1294 which was a new State record. (PPC).

A PTEROMALID WASP (Eupteromalus sp.) - CALIFORNIA - Medium on apple leaves in Santa Cruz County; this wasp usually associated with lepidopterous larvae. (Cal. Coop. Rpt.).

MISCELLANEOUS INSECTS

BANDED CUCUMBER BEETLE (Diabrotica balteata) - FLORIDA - Adults feeding on leaves of corn at bulb farm in Lake Placid, Highlands County. (A. C. McAlay, J. C. Denmark; Jan. 20).

EARWIGS - ALABAMA - Widespread under mulch of shrubs and trees and in roadbanks, field borders and under bark of trees. Generally present statewide. (Barwood et al.).

ADDITIONAL NOTES

NORTH CAROLINA - Unspecified SCALE INSECTS reported prevalent in sand hills area, particularly in peach orchards where crop not harvested in 1964. (Peach Letter). TEA SCALE (Fiorinia theae) heavy on some camellias in Cumberland and Bladen Counties. (Mount). LONG-NOSED CATTLE LOUSE (Linognathus vituli) collected December 15, 1964, from steer in Davidson County; steer brought in from out of State. CATTLE BITING LOUSE (Bovicola bovis) collected from dairy cattle on same date in Davidson County. HOG LOUSE (Haematopinus suis) collected from swine in same county on December 15, and collected January 22 in Hertford County. All determined by W. G. Bruce. (Johnson, Ballentine). CLOVER MITE (Bryobia praetiosa) a nuisance in several Wake County homes. (Jones).

LIGHT TRAP COLLECTIONS

	Precipitation	Type of trap*	Temp.		Date		Locality	T	S	C	M	MV	Other				
			F	C													
GEORGIA Tifton 1/21-27	33-71	2.1	BL														
SOUTH CAROLINA Charleston 1/25-31	24-66	0.69	BL	0													
TEXAS Brownsville 1/8-26	36-80	0.5	5 BL	31													

* BL blacklight; I incandescent. MV = mercury vapor; O other
 ** alf. alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC field corn; grain = small grains; leg. legumes (unspecified); lett. lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. solanaceous plants (unspecified); soy. soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. tomato.

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

Near the end of the period January 24-30, TEXAS experienced the fourth screw-worm case of 1965; single case reported from Live Oak County. No other cases were reported from the Southwestern Eradication Area, nor from the State of Arizona. The Republic of Mexico reported 25 cases: Sonora 17, Coahuila 4, and one each from Tamaulipas, Nuevo Leon, Chihuahua and Puebla. Concentration of sterile screw-worm releases will be in Mexico until conditions favorable for buildup in the United States warrant daily release. Flies released this period: Texas, 3,970,250 and Mexico 58,183,600.

Year	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
	Current	Cumulative	Current	Cumulative	Current	Cumulative

Table 1. Comparison of specimens reported during corresponding weeks in 1963 and 1964 in Southwestern Eradication Area.

1963	13	124	12	90	108.33	137.77
1964	0	0	23	131	0.00	0.00
1965	1	4	54	287	1.85	1.39

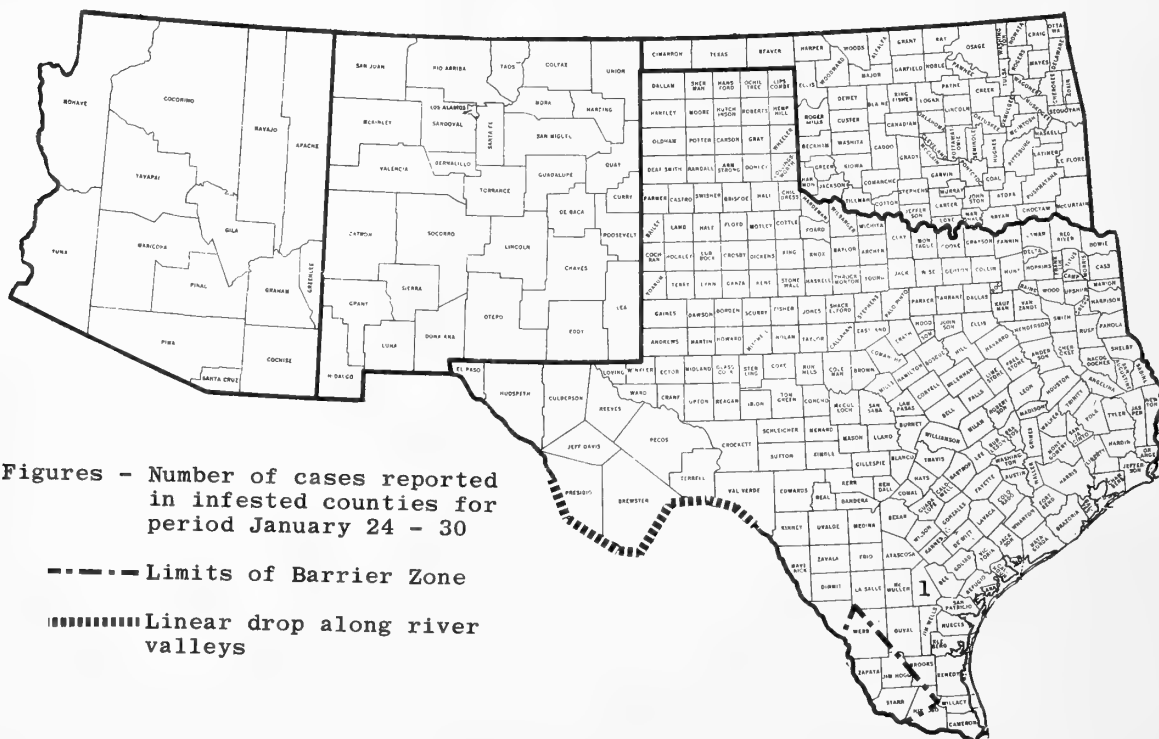
Table 2. Comparison of specimens reported during corresponding weeks and in a corresponding area in 1964 in the United States-Mexico Barrier Zone.*

1964	23	88	9	42	255.55	209.52
1965	24	220	32	150	75.00	146.66

Table 2A. Mexican portion of Barrier Zone only.

1964	23	85	4	18	575.00	472.22
1965	24	218	18	98	133.33	222.44

* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm population in the United States. (Anim. Dis. Erad. Div.).



Figures - Number of cases reported in infested counties for period January 24 - 30

--- Limits of Barrier Zone
 Linear drop along river valleys

SUMMARY OF INSECT CONDITIONS IN HAWAII - 1964

Submitted by the Hawaiian
Entomological Society *

Highlights

There was a sharp increase in the influx of new species during 1964, coupled with a rapid spread of newly established pests to neighbor islands. A new weed pest, Hypericum perforatum (common St. Johnswort), was discovered on Mt. Hualalai, Hawaii, infesting 2,000 acres. A FALSE CHINCH BUG (Nysius caledoniae), new to the State in 1964, caused 80 percent destruction of vanda orchid buds and flowers at Kapoho, Hawaii. Another species new to the State, CUBAN-LAUREL THRIPS (Gynaikothrips ficorum), was found on banyan trees at the Honolulu International Airport in January and spread rapidly to neighbor islands. A WEEVIL (Xylosandrus compactus) spread to Kauai, and on Hawaii, a new infestation of GIANT AFRICAN SNAIL (Achatina fulica) was found at Kailua. Spectacular control of lantana by introduced BENEFICIAL INSECTS was noted on Maui.

Cereal and Forage Insects

Heavy infestations of ARMYWORM (Pseudaletia unipuncta) occurred at Waimea and Kohala, Hawaii, during the early part of the year and moderate outbreaks were reported on Maui. A BILLBUG (Sphenophorus venatus vestitus) was reported from Hawaii for the first time and is now established on all the major islands. Increasing damage to corn by SOUTHERN GREEN STINK BUG (Nezara viridula) was reported in Kona, Hawaii. A SCOLYTID BEETLE (Hypothenemus pubescens), (reported in CEIR 15(1):9), was found for the first time in State in stalks of Cynodon dactylon at Keawakapu and Lahaina, Maui, during the latter part of 1964. Further surveys showed this beetle to be present on Molokai and Oahu. A single live specimen of a KATYDID (Mecopoda elongata) was collected November 17, 1964, on a desk in the cargo office of Hickam Air Force Base, Oahu, but an immediate survey revealed no other specimens.

Fruit and Nut Insects

SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula) continued to cause widespread damage. In Kona, Hawaii, shifting populations from low, dry areas to macadamia orchards resulted in tremendous damage to macadamia nuts. Larvae of an OLETHREUTID MOTH (Cryptophlebia ombrodelta) also caused damage to macadamia. Heavy infestations of a MEALYBUG (Pseudococcus obscurus) were reported on papaya fruits at Kapoho, Hawaii, and BARNACLE SCALE (Ceroplastes cirripediformis) reached pest proportions on passion-fruit (Passiflora edulis var. flavicarpus). A WEEVIL (Anaballus amplicollis) was reared from coffee berries from Kona, Hawaii, for a new host record. This insect-host relationship is being investigated.

Truck Crop Insects

Increasing damage to truck crops by SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula), especially to beans and tomatoes, was reported in Kona, Hawaii. BEET LEAFHOPPER (Circulifer tenellus), first found on Oahu in 1960 and subsequently on Molokai and Kauai, spread to the islands of Hawaii and Maui during

* Compiled by the Entomological Branch, Hawaii State Department of Agriculture, with the cooperation of the Department of Entomology, University of Hawaii; Entomology Department, Hawaiian Sugar Planters' Association; Plant Pest Control Division, USDA; and Plant Quarantine Division, USDA; through the Hawaiian Entomological Society.

1964. The virus disease, curly top, associated with this leafhopper, has not appeared thus far. On Kauai, unusual activity of a LEAF MINER FLY (Liriomyza brassicae) on tomato, cucumber and beans was noted in the Waialua and Kapāa districts. In the Lihue district, an estimated 2 percent of watercress was completely damaged by larvae of DIAMONDBACK MOTH (Plutella maculipennis), and on Oahu, larvae of this pest caused severe damage to alyssums in a yard in the Diamond Head area. Also on Kauai, heavy infestations of PEPPER WEEVIL (Anthonomus eugenii) were reported from Kalaheo and Waialua. A TARO LEAFHOPPER (Tarophagus prosperpina) reached damaging numbers early in November in Hanapepe, Hanalei and Waimea; however, populations were rapidly brought under control by a PREDACEOUS CAPSID BUG (Cyrtorhinus fulvus), an egg sucking species.

Forest, Ornamental and Shade Tree Insects

Movement of CUBAN-LAUREL THIRPS (Gynaikothrips ficorum) from foci of population buildups caused considerable annoyance to residents by their presence on individuals, food and clothing. An effective predator, an ANTHOCORID BUG (Montandoniella moraguesi) was introduced from the Philippines for control of this thrips. The range of a BARK BEETLE (Xylosandrus compactus) was slowly extended and the beetle was reported attacking bifoliolate Cattleya sp. and Vanda joaquim. In July, this pest was recovered from Koa haole (Leucaena glauca) on Kauai, the first report from a neighbor island.

A GRASSHOPPER (Schistocerca vaga), new to the State, was collected on Sand Island, Oahu, in August. Subsequent surveys indicated that it was well established and numerous first-generation nymphs were found. A spray program was initiated and is now in progress to eradicate this new pest. A FALSE CHINCH BUG (Nysius caledoniae) was collected on weed hosts in Ewa, Oahu, in May for another first State record during 1964. Simultaneously, this species was reported causing severe damage to buds and flowers of vanda orchids at Kapoho, Hawaii. The infestation by N. caledoniae at Kapoho was followed by an infestation of another FALSE CHINCH BUG (Nysius kingbergi) which resulted in considerable brown spotting of vanda flowers. Also at Kapoho, a moderate infestation of an APHID (Neophyllaphis araucariae) was observed on Norfolk Island-pine; damage was negligible. On the southern end of the island of Hawaii, severe infestations of COCONUT LEAF ROLLER (Hedylepta blackburni) resulted in palm leaves being extremely frayed. Larval outbreaks of a NOCTUID MOTH (Achaea janata) were reported from the major islands during the early part of 1964, being unusually active on Hawaii and Kauai. On Kauai, the heaviest infestations in 10 years occurred, with castor-bean heavily defoliated in a 40-acre stand.

Insects Affecting Man and Animals

Two cases of human myiasis by SHEEP BOT FLY (Oestrus ovis) were reported on Hawaii, one case in Puako in May and one case in October from Naalehu. A population explosion of a MILLEPED (Trigoniulus lumbricinus) at Kailua on the island of Hawaii, caused considerable annoyance to hotel guests. At Kawaihae and Puako, an outbreak of a SOLITARY WASP (Halictus sp.) was reported, with residents and picnickers complaining of annoyance and stings.

Miscellaneous Pests

Progress in eradication measures against GIANT AFRICAN SNAIL (Achatina fulica) at Poipu, Kauai, and at Hakalau, Hawaii, appeared very promising; however, on Hawaii, a new infestation was discovered near White Sands, Kailua, and one live snail was collected at Waimea. This snail destroyed 50 percent of papaya seedlings in a 4-acre planting at Hana, Maui. Other species reported or found established during 1964 included a PHORID FLY (Parasphiniophora sp.) collected in light traps on Oahu, a BARK BEETLE (Stephanoderes farinosus) collected from

twigs of litchi on Oahu, and an APHID (Aphis oenotherae) collected at Volcano, Hawaii. An ARMORED SCALE (Chrysomphalus rossi) was found for the first time on the island of Hawaii.

Beneficial Organisms

A SCALIONID WASP (Telenomus basalis), an egg parasite, and a PARASITIC TACHINA FLY (Trichopoda pennipes), an adult parasite, gave excellent bio-control of Nezara viridula (southern green stink bug) on the islands of Oahu and Kauai. T. basalis was found established at Kawaihae, Hawaii, in January, and T. pennipes was found established on Oahu in February and on Maui in August. A PREDACEOUS ANTHOCORID BUG (Montandoniella moraguesi), introduced from the Philippines for control of Gynaikothrips ficorum (Cuban-laurel thrips) on banyan trees (Ficus spp.), quickly became established and built up large populations. This predator appears to be very promising. CONVERGENT LADY BEETLE (Hippodamia convergens), introduced on several occasions since 1896, was found established for the first time in the islands at 9,800 feet elevation on Haleakala, Maui, in August, and at 13,613 feet on Mauna Kea, Hawaii, in September. An unspecified BRACONID WASP and a PARASITIC PTEROMALID (Choetospila frater) were introduced from the Philippines for the control of various bark beetles, including Xylosandrus compactus. A PARASITIC PTEROMALID (Anysis alcocki) from the Philippines was released against Ceroplastes spp. (wax scales). A PARASITIC ENCYRTID (Aphycus luteolus) was introduced from California for control of Coccus viridis (green scale). A BRACONID WASP (Opius sp.) from Malaysia was released against fruit flies (Tephritidae). Two species of NOCTUID MOTHS (Hypena strigata and Catabena esula) "exploded" in numbers on Maui during November and larvae denuded approximately 10,000 acres of lantana. A stem-boring CERAMBYCID BEETLE (Plagiohammus spinipennis) was active on lantana on Hawaii, and some branches were collapsing due to boring of larvae. An introduced leaf mining CHRYSOMELID BEETLE (Octotoma scabripennis) of lantana was found established on the island of Oahu for the first time in October.

Excellent control bordering on eradication of a puncture-vine (Tribulus cistoides) in being obtained on Kauai from infestations of PUNCTURE-VINE WEEVILS (Micro-larinus spp.); M. lareynii is the seed-boring species and M. lypriformis is the stem-boring species. Another stem-boring WEEVIL (Apion antiquum) has caused the virtual disappearance of a rangeland weed Emex australis at Makahalau on the island of Hawaii. A CERAMBYCID BEETLE (Lagocheirus funestus), a cactus infesting species, caused considerable destruction of Opuntia spp. (pricklypear) at Kawaihae Uka, island of Hawaii, in March. This beetle has replaced Dactylopius sp. (a mealybug) and Cactoblastis sp. (a pyralid moth) in effectiveness in some localities on Hawaii. Larvae of a TORTRICID MOTH (Apotoforma sp.) from Mexico were released for control of wild blackberry on the island of Maui beginning in August. A HELIODINID MOTH (Schreckensteina festaliella), introduced earlier for control of blackberry, showed steady progress in 1964.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

IN Wyoming DURING 1964 (State or District) (Year)

ATTACKING Corn (grain) (Commodity or Crop)

ATTACKING Corn (silage) (Commodity or Crop)

A. Pest or pest complex: Western corn rootworm, spider mites, corn leaf aphid

B. Number of acres ^a produced (From CRS) 17,000

C. Average yield per acre ^a (From CRS) Units/ 68 bu.

D. Price^b per unit (bu.) ^c (From CRS) \$/ 1.27

E. Acres ^a needing control No. 4,190

F. Acres ^a treated No. 1,635

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 2.70

I. Loss in yield, units per acre ^{a, C x H} Units/ 1.84

J. Loss in yield, \$ per acre ^{a, D x I} \$/ 2.34

K. Loss in quality, \$ per ^a \$/ ----

L. Yield loss for all acres ^{a, (E-F) x I} Units 4,701.20

M. Control cost, \$ per acre ^a \$/ 3.00

N. Control cost for all acres ^{a, F x M} \$ 4,905.00

O. Yield loss for all acres ^{a, (E-F) x J} \$ 5,978.70

P. Quality loss for all ^{a, (E-F) x K} \$ ----

Q. Combined control cost and losses, ^{N + O + P} \$ 10,883.70

R. Percent loss due to each insect in the complex: Western corn rootworm - 55,
spider mites - 30, corn leaf aphid - 5, others - 10

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

Submitted by William D. Marks
Date December 30, 1964

A. Pest or pest complex: Western corn rootworm, spider mites, corn leaf aphid

B. Number of acres ^a produced (From CRS) No. 26,000

C. Average yield per acre ^a (From CRS) Units/ 9.5 tons

D. Price^b per unit (ton) ^c (From CRS) \$/ 8.00

E. Acres ^a needing control No. 6,650

F. Acres ^a treated No. 2,780

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 1.45

I. Loss in yield, units per acre ^{a, C x H} Units/ .1378 ton

J. Loss in yield, \$ per acre ^{a, D x I} \$/ 1.10

K. Loss in quality, \$ per ^a \$/ ----

L. Yield loss for all acres ^{a, (E-F) x I} Units 533.29 tons

M. Control cost, \$ per acre ^a \$/ 3.00

N. Control cost for all acres ^{a, F x M} \$ 8,340.00

O. Yield loss for all acres ^{a, (E-F) x J} \$ 4,257.00

P. Quality loss for all ^{a, (E-F) x K} \$ ----

Q. Combined control cost and losses, ^{N + O + P} \$ 12,597.00

R. Percent loss due to each insect in the complex: Western corn rootworm - 55,
spider mites - 30, corn leaf aphid - 5, others 10

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ().

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Date December 30, 1964



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Hyattsville, Maryland 20781

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