

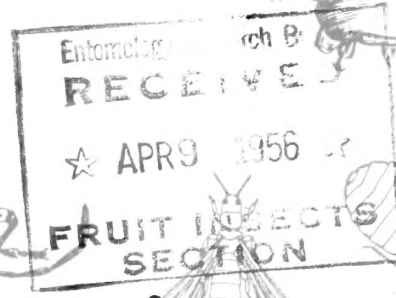
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VOL. 6 No.14

APRIL 6, 1956

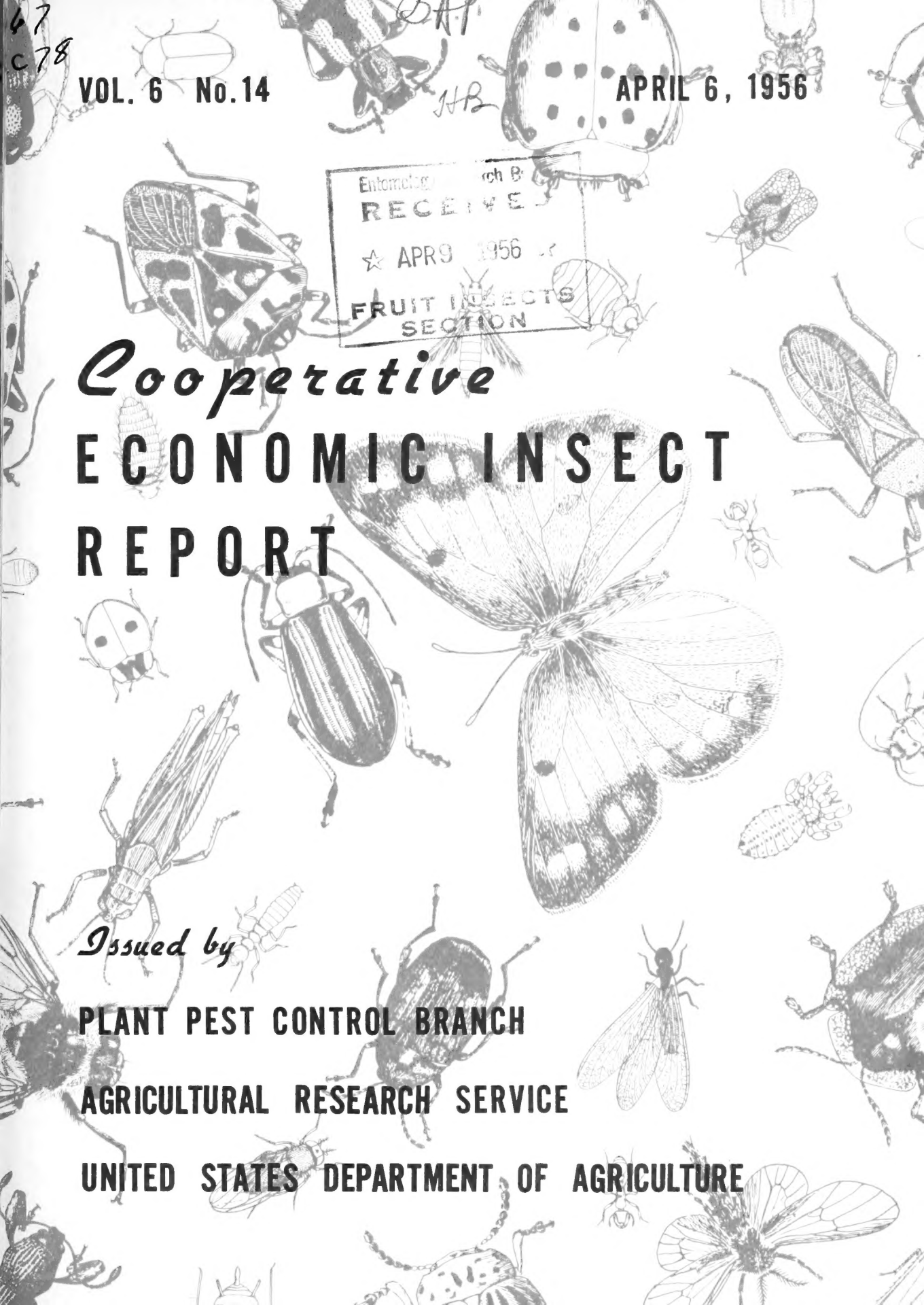


Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

**PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE**

UNITED STATES DEPARTMENT OF AGRICULTURE



AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT 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.

Reports and inquiries pertaining to this release should be mailed to:

Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG infestations widespread in northern areas of Arkansas. Controls underway in limited areas of southwestern and northeastern Oklahoma. (p. 279).

BROWN WHEAT MITE infestations general in wheat in Oklahoma as far east as Tulsa County. (p. 279).

SPOTTED ALFALFA APHID increasing rapidly in Yuma area of Arizona and in Washington County, Utah. Large populations in most areas of Oklahoma but generally light in central and northwestern Arkansas. (p. 280).

PEA APHID very abundant at Phoenix, Arizona; common in Tulsa County, Oklahoma; very heavy some parishes of Louisiana; heavy in many fields in northwestern Arkansas; light populations in Maryland and Virginia. (p. 280).

CATFACING INSECTS active in orchards of Arkansas and southern areas of Indiana and Illinois. (p. 282).

TOBACCO INSECT situation in Georgia. (p. 283).

BOLL WEEVIL survival counts higher in North Carolina and Georgia than last year. (p. 284).

SUMMARY OF INSECT CONDITIONS - 1955 - Georgia (p. 289), Pakistan (p. 293).

Some of the more IMPORTANT INSECTS in Georgia in 1955. (p. 286).

First reported Records of Season (by areas)

TARNISHED PLANT BUG in alfalfa in southeastern Virginia. ALFALFA CATERPILLAR active in Granville County, North Carolina. APPLE APHID nymphs on apple in Maryland. Newly-hatched APHIDS in orchards in southern Indiana. ROSY APPLE APHID nymphs in Jackson County, Oregon. BLACK CHERRY APHID hatching in Benton County, Oregon. EUROPEAN RED MITE hatching at Staunton, Virginia. PEAR PSYLLA egg deposition occurring in Hood River Valley, Oregon. ORIENTAL FRUIT MOTH adults emerging Clarksville, Arkansas. RED-BANDED LEAF ROLLER adults at Vincennes, Indiana. EYE-SPOTTED BUD MOTH larvae active in Benton County, Oregon. BOLLWORM larvae on cotton in Rio Grande Valley, Texas.

Reports in this issue are for week ending March 30, 1956, unless otherwise designated.

WEATHER BUREAU'S 30-DAY OUTLOOK

April 1956

The weather Bureau's 30-day outlook for April calls for temperatures to average below normal in states along the Atlantic and Pacific Coasts and also in the Northern Plains. Above normal temperatures are indicated in the Southern Plains, Southern Plateau, and west Gulf States. In other areas temperatures are expected to average near seasonal normals. Precipitation is predicted to exceed normal in the Pacific Northwest and Missouri Valley, and be close to normal in the Middle Atlantic States, Great Lakes region, Ohio Valley, and lower Mississippi Valley. In the remainder of the nation subnormal amounts are anticipated.

This report released by the Weather Bureau on March 30, 1956.

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 Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 for six months.

WEATHER FOR THE WEEK ENDING APRIL 2, 1956

High winds, accompanying a large low pressure system located in the middle of the country, swirled dust and blew much wheat out of the soil in the western Great Plains, beginning March 27 and continuing on the 28th. As the storm moved eastward, then northward and out over the Great Lakes by Friday, the 30th, the cyclonic circulations brought snow and blizzard conditions from the Rocky Mountains eastward through North Dakota, while from Minnesota to western Pennsylvania precipitation fell as snow, sleet, and freezing rain. Thunderstorms with hail were reported from the Dakotas southward to the lower Mississippi Valley and as far eastward as the Ohio Valley. On Friday night a low cell moving up the Atlantic Coast brought heavy snows of 3 to 5 inches to the New England area. Although another extensive storm center was developing over the western Plains by the weekend, much of the country experienced pleasant weather on Easter Sunday with clear skies prevailing over the East and much of the Midwest enjoying temperatures in the 80's. However, by Monday a second extensive storm was raising dust and causing additional damage to winter grain over the same dry areas as the one earlier in the week. Numerous tornadoes accompanied this storm in Kansas and Oklahoma. Winds at Austin, Minnesota on March 27 lifted the roof of a 5-ton hangar at the airport and deposited it on a motel injuring 5 persons and resulting in damage estimated at \$100,000. Figures are not yet available for the last storm. Temperatures in the northwestern, northeastern, and extreme southeastern portions of the country averaged below normal for the week as did those in the Dakotas, Minnesota, and Wisconsin. Although temperatures averaged above normal in the South, frosts were reported in areas of Texas and California. The weekly average departures ranged from -10° in Connecticut to $+11^{\circ}$ in northern (Weather continued on page 287)

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - ARKANSAS - Found in all small grain fields from Benton County south to Sebastian and east to Arkansas and Lincoln Counties. Infestations variable. Populations range from occasional aphid to 350-500 per foot of row. (Warren). OKLAHOMA - Some spraying in limited areas of southwestern and northeastern areas. (Howell).

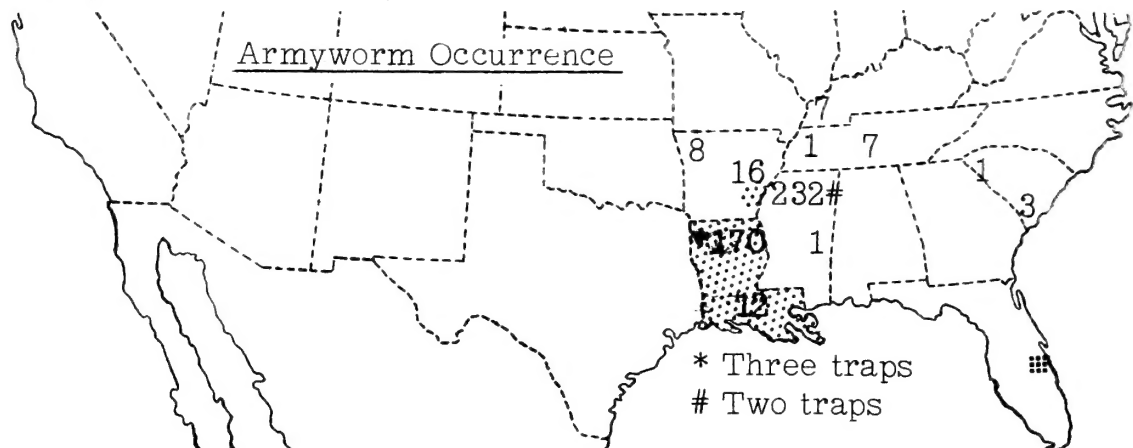
BROWN WHEAT MITE (Petrobia latens) - UTAH - Less than five per linear foot of drill row in dryland wheat, Salt Lake County. Second-stage nymphs observed, but no adults found. Two fields of small grain being damaged in Washington County. (Hughes, Knowlton). OKLAHOMA - General infestations in wheat extending as far east as Tulsa County. (Coppock).

CORN LEAF APHID (Rhopalosiphum maidis) - ARKANSAS - Populations high in many northern small grain fields but highest in northwestern counties. (Warren).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Survival counts in Logan and Pope Counties averaged 10 percent. Unknown agents caused heavy mortality of larvae entering hibernation last fall. (Warren).

A BILLBUG (probably Calendra phoeniciensis) - ARIZONA - Severe on seedling corn at Scottsdale. Infestation on 60 acres recently sodded in Bermuda grass. As many as two or three adults per seedling. (Ariz. Coop. Rept.)

ARMYWORM (Pseudaletia unipuncta) - LOUISIANA - Very light armyworm populations in forage over the State. (Oliver). ARKANSAS - Full grown larvae and prepupae collected in and around field trash in Lincoln County. (Warren). FLORIDA - Larvae averaging 2 per linear foot of row collected on sugarcane in Indian River County. Quite extensive damage done. (Goodwin, Mar. 15).



Larval Infestations: Light :::: Heavy :### Figures = No. moths trapped

A GROUND PEARL - GEORGIA - Lightly infesting Bermuda grass in Dooly County. (Snodgrass, March 22).

SUGARCANE BEETLE (Euetheola rugiceps) - ARKANSAS - Averaged 3-4 per square foot of soil in soybean stubble in Lincoln County. (Warren).

SPOTTED ALFALFA APHID - ARIZONA - Widespread and increasing rapidly on alfalfa in Yuma area. Infestation may be as severe there as last year. Population in field in Coolidge County was about 100 per sweep. Of four fields in Phoenix area, only one had apparent population; 4-5 early instars per leaflet. (Ariz. Coop. Rept.). UTAH - Multiplying rapidly in Washington County. (Hughes, Knowlton). OKLAHOMA - Large populations in alfalfa fields of most areas. (Coppock). ARKANSAS - Infestations of central and northwestern counties generally light to non-existent in fields having moderate numbers late last fall. Very heavy infestations in some fields of Crawford County. Counts averaged 250-300 per sweep. (Warren).

PEA APHID (Macrosiphum pisi) - ARIZONA - Very abundant on alfalfa in Phoenix area. Four fields swept - 400 plus per sweep. One field in Pinal County had about 100 per sweep. (Ariz. Coop. Rept.). OKLAHOMA - Common in alfalfa in Tulsa County. (Coppock). LOUISIANA - Very heavy populations in burclovers in East Baton Rouge, Iberville and Ascension Parishes. (Oliver). ARKANSAS - Infestations heavy in many fields, especially in northwestern counties. Wilting young alfalfa in Benton County. (Warren). MARYLAND - Very light in alfalfa in Anne Arundel and Prince Georges Counties. (U. Md. Ent. Dept.). VIRGINIA - Scattered and just hatching in alfalfa in King William, Hanover, and Henrico Counties. No lady beetles observed. (Matheny). Reproduction occurring in all areas. (Morris).

COWPEA APHID (Aphis medicaginis) - ARKANSAS - Unusually heavy on young alfalfa in Crawford County. Average of 15-20 per stem in one field. (Warren).

TARNISHED PLANT BUG (Lygus lineolaris) - VIRGINIA - One adult observed in alfalfa field in southeastern area. (Matheny).

CLOVER LEAF WEEVIL (Hypera punctata) - LOUISIANA - Adults and larvae in burclover at 10-16 per 100 sweeps in East Baton Rouge and Iberville Parishes. (Oliver). ARKANSAS - Larvae found occasionally. (Warren). MARYLAND - Larvae light in clover and alfalfa in Anne Arundel and Prince Georges Counties. (U. Md. Ent. Dept.). VIRGINIA - Larvae general but diseased in alfalfa and clover in King William, Hanover and Henrico Counties. (Matheny).

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - One adult and one larva per 100 sweeps on alfalfa in field known to have been infested in 1955. (Dogger). Alfalfa weevil has been reported only from Vance and Granville Counties in North Carolina. VIRGINIA - Adults and early-instar larvae active in alfalfa fields of Hanover (Willey, Saunders),

Chesterfield (Jones), King William, and Henrico Counties. (Matheny). Hatching of eggs and adult activity continuing in eastern and southeastern parts of State. Infestations light to date. No reports of alfalfa weevil activity received from other parts of the State. (Morris). DELAWARE - Unfavorable weather retarding activity but adult-feeding noted on new growth near Bombay Hook and Summit Bridge, March 22. (Late News).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NORTH CAROLINA - Few larvae noted on alfalfa in Granville County. (Dogger).

CLAY-BACKED CUTWORM (Agrotis gladiaria) - LOUISIANA - Infesting crimson clover at 1-10 per square foot in Claiborne Parish. Causing considerable injury to the stand. (Oliver).

VARIEGATED CUTWORM (Peridroma margaritosa) - ARKANSAS - One larva taken from vetch in Arkansas County. (Warren).

LEAFHOPPERS (Empoasca sp.) - LOUISIANA - Populations exist in burclover at 10 per 100 sweeps in Iberville Parish. (Oliver). ARKANSAS - None were found in alfalfa or vetch. (Warren).

CLOVER ROOT CURCULIO (Sitona hispidula) - MARYLAND - Adults active in clover and alfalfa in Anne Arundel and Prince Georges Counties. (U. Md. Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARKANSAS - Light numbers in a few alfalfa fields. (Warren).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Light to non-existent. Heaviest numbers, 5-6 per 20 sweeps, in Pulaski and Lonoke Counties. (Warren).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - LOUISIANA - Feeding on burclover at 40 adults per 100 sweeps in Iberville Parish. (Oliver).

FRUIT INSECTS

APPLE APHID (Aphis pomi) - MARYLAND - Nymphs light on new leaves of apple and hawthorn in Prince Georges and Montgomery Counties. (U. Md. Ent. Dept.).

ROSY APPLE APHID (Anuraphis roseus)- VIRGINIA - Evidence that hatch is completed on apple in Staunton area. (Woodside). OREGON - Young aphids beginning to appear on fruit buds in Jackson County, Mar. 27. (Gentner).

APHIDS - INDIANA - Newly-hatched on apples March 27, in Vincennes area. (Hamilton). Eggs hatching in Orleans area. (Marshall). DELAWARE - Apple grain aphid hatching by March 15 in southern area. (Late News).

BLACK CHERRY APHID (Myzus cerasi) - OREGON - Eggs began to hatch in Benton County, March 28. (Jones).

EUROPEAN RED MITE (Metatetranychus ulmi) - VIRGINIA - Two hatched individuals noted on apple in Staunton area March 26. (Woodside).

CLOVER MITE (Bryobia praetiosa) - OREGON - Eggs beginning to hatch on peach trees in Jackson County March 27. (Gentner).

FALL CANKERWORM (Alsophila pometaria) - NORTH CAROLINA - Adults (females) taken alive in apple orchard, February 8 in Haywood County. (Holloway).

PEAR THRIPS (Taeniothrips inconsequens) - OREGON - Began to emerge in Benton County March 28. (Jones).

PEAR PSYLLA (Psylla pyricola) - OREGON - Winter adults and eggs not as abundant as in previous years in Jackson County. (Gentner). Egg deposition beginning in Hood River Valley March 27. (Ellertson).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - ARKANSAS - Adults began to emerge in Clarksville area prior to March 26. (Warren).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adults readily found in apple orchards in Vincennes area March 26 and 27. No eggs. (Hamilton).

CATFACING INSECTS - INDIANA - Jarring in five peach orchards March 26 in Vincennes area showed 13 tarnished plant bugs and 19 stink bugs. An increase over previous week. (Hamilton). ILLINOIS - One tarnished plant bug jarred from five unsprayed trees at Mounds. (Chandler). ARKANSAS - Adults of Lygus lineolaris active in orchards, particularly where cover crops occur. (Warren).

PLUM CURCULIO (Conotrachelus nenuphar) - ARKANSAS - Adults active in Nashville area. (Warren).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - OREGON - Larvae beginning to work into buds of cherry trees in Benton County, Mar. 28. (Jones).

CUTWORMS - ARKANSAS - Various species of climbing cutworms damaging grape vineyards in northwestern counties. (Warren).

PECAN NUT CASEBEARER - OKLAHOMA - Of 2700 pecan tips checked in Lincoln, Okfuskee, Okmulgee and Tulsa Counties, only one hibernating form was found in an orchard of improved variety of pecans in Okmulgee County. (Coppock).

TRUCK CROP INSECTS

IMPORTED CABBAGEWORM (Pieris rapae) - GEORGIA - Heavily infesting cabbage in Colquitt County and moderate infestations in Thomas and Lowndes Counties. (Johnson). SOUTH CAROLINA - A few larvae in cabbage fields in Charleston area. (Cuthbert, Reid).

DIAMONDBACK MOTH (Plutella maculipennis) - LOUISIANA - Five per broccoli plant in St. John the Baptist Parish. (Oliver).

CABBAGE LOOPER (Trichoplusia ni) - LOUISIANA - Populations light in cabbage and broccoli in St. John the Baptist Parish. (Oliver).

BLACK CUTWORM (Agrotis ypsilon) - SOUTH CAROLINA - Very abundant in one cabbage planting at Charleston. (Cuthbert, Reid).

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Light to moderate infestations in cabbage in Colquitt and Thomas Counties. (Johnson). SOUTH CAROLINA - Populations on spring cabbage at Charleston checked by insecticides and natural enemies. No appreciable damage expected before harvest. (Cuthbert, Reid).

GREEN PEACH APHID (Myzus persicae) - ARKANSAS - Averaging 1-2 per leaf of spinach in Crawford County. (Warren). SOUTH CAROLINA - Infestations light on spinach and winged forms on new potatoes at Charleston. (Cuthbert, Reid).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - LOUISIANA - Populations light in turnips in East Baton Rouge and St. John the Baptist Parishes. (Oliver).

BEEF LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Spring spraying of rangeland begun with 1625 acres covered, much of it on west side of San Joaquin Valley between Cantua and Big Panoche Creeks in Fresno County. (Cal. Coop. Rept.).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - SOUTH CAROLINA - Larvae abundant in home plantings of mustard, turnips and spinach in Charleston area. (Cuthbert, Reid).

COWPEA CURCULIO (Chalcoedermus aeneus) - ARKANSAS - Adults up to 10 per clump of bunch grass near old pea field in Lincoln County. (Warren).

ONION THRIPS (Thrips tabaci) - GEORGIA - Light infestations on commercial onions in Tattnall County. (Johnson).

Tobacco Insect Situation, Georgia

VEGETABLE WEEVIL heavily infesting beds in Pierce and Tattnall Counties; moderate infestations in Tift, Colquitt and Lowndes Counties; light infestations in Grady, Brooks, Appling and Candler Counties.

APHIDS light in beds in Tattnall, Lowndes, Colquitt and Pierce Counties. TOBACCO FLEA BEETLE heavily infesting beds in Tattnall, Pierce and Thomas Counties; moderate infestations in Tift, Lowndes, and Colquitt Counties; light infestations in Grady, Brooks and Candler Counties. (Johnson).

POTATO TUBERWORM (Gnorimoschema operculella) - NORTH CAROLINA Moderate to severe, local infestation in tobacco in greenhouse in Wake County. (Scott).

RED-NECKED CANE BORER (Agrilus ruficollis) - NORTH CAROLINA - Attacking raspberries in Haywood County. (Scott).

MITES - KENTUCKY - Have been active on strawberries and depositing eggs on warm days since late February. (Rodriguez).

MEXICAN BEAN BEETLE (Epilachna varivestis) - Correction: CEIR 6(6): 96. Distribution Map footnote should read "Local infestations of recent years, but eradicated: 2 1/2 miles north of Twin Falls, Idaho and Oxnard, California. "

COTTON INSECTS

Boll Weevil Survival Counts in North Carolina and Georgia

In NORTH CAROLINA, March 13-23, 600 square yards of surface trash from five farms in 12 counties showed up to 12,100 weevils per acre and averaged 1815 per acre. Percent survival was 43.7 compared with 17.6 percent survival for the winter 1954-55. The average of 1815 weevils per acre this spring is 7.6 times the average found in the spring of 1955 and about the same as for spring of 1954. (Walker, Hopkins, Jernigan). In GEORGIA, March 1-26, examinations of surface woods trash from four regions showed an average of 390 weevils per acre compared with 48 weevils per acre a year ago. Winter survival for the State was 49 percent. Of 42 fields examined, 21 were infested. Samples were taken from following areas: northwest (Gordon County), north central (Spalding, Butts, and Pike Counties), east central (Burke County), and south (Tift County). (Beckham).

BOLLWORMS - TEXAS - Eggs occurring on small cotton in Mission area and larvae on plants in eastern part of Rio Grande Valley. (Deer).

CUTWORMS - TEXAS - Still causing some damage in Lower Rio Grande Valley, but appear to be diminishing. Most severe damage in Weslaco area. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PINE SAWFLY (Neodiprion taedae linearis)-ARKANSAS - Hatching nearly complete in Fordyce-Warren area. Larval colonies' numerous on some trees. Partial to complete defoliation expected on trees carrying the greater larval groups. Just reaching third instar in a few colonies. (Warren).

APHIDS - VIRGINIA - Bark aphids, probably Cinara tujafilina severe but spotted on arborvitae in Norfolk and Princess Anne Counties. (Harrell).

OBSCURE SCALE (Chrysomphalus obscurus) - MARYLAND - Heavily infesting pin oak at College Park. (U. Md. Ent. Dept.).

COTTONWOOD LEAF BEETLE (Chrysomela scripta) - MISSISSIPPI - Gravid adults collected from willow sprouts and small cottonwood trees in Washington County March 28. (Putnam).

EASTERN TENT CATERPILLAR (Malacosoma americanum)-GEORGIA - Heavily infesting wild cherry trees throughout southern area. (Johnson). MISSISSIPPI - Larvae about mature in large numbers in Jones and Oktibbeha Counties. (Hunsucker, Pepper). ARKANSAS - Active as far north as Crawford County with some complete stripping of foliage. (Warren).

A MEALYBUG (Phenacaspis nyssae)- MARYLAND - Infesting blackgum at University Park. (U. Md., Ent. Dept.).

HOLLY LEAF MINERS - MARYLAND - Pupating in mines in holly leaves at College Park. About 40 percent of mines examined had pupae. (U. Md., Ent. Dept.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius)- VIRGINIA - Infestations medium to severe on Japanese hollies and camellias at some locations in Norfolk County. (Harrell).

MITES - NORTH CAROLINA - Moderate damage by a spider mite in complex with camellia scale on camellias in local infestation in Wake County. (Scott).

CAMELLIA SCALE (Lepidosaphes camelliae) - NORTH CAROLINA - Damaging camellias in local infestations in Green and Wake Counties. (Scott).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - VIRGINIA - Infestations light on boxwood in several Richmond area nurseries. (Phillips, Miller).

CYCLAMEN MITE (Steneotarsonemus pallidus) - UTAH - Damaging flowers in two Salt Lake City greenhouses. (Parrish, Knowlton).

BANANA ROOT BORER (Cosmopolites sordidus)- FLORIDA - Adults averaging five per plant of cavendish banana at Miami, Dade County, March 7. (Dowling).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Control has been carried out on 75 percent of cattle and in some areas all cattle have been treated once or twice. About 60 percent of cattle treated in Duchesne County. (Murdock, Knowlton).

BLACK-LEGGED TICK (Ixodes ricinus scapularis) - OKLAHOMA - Active in Stephens County. (Bower).

HORN FLY (Siphona irritans) - OKLAHOMA - From 30-50 per adult animal in one herd in Okfuskee County. (Coppock).

CATTLE GRUBS - OKLAHOMA - Heel flies running cattle in Okfuskee County, Mar. 28. (Coppock)

MISCELLANEOUS INSECTS

TERMITES - VIRGINIA - Sexual forms emerged in Richmond during week. (Matheny). NORTH CAROLINA - Reports of activity from Duplin, Harnett and Wake Counties. (Jones). MARYLAND - Winged forms in homes in Ellicott City. (U. Md. Ent. Dept.). MISSISSIPPI - Several flights of winged forms of Reticulitermes flavipes in one area of Washington County, Mar. 24. (Putnam). OKLAHOMA - Swarming of R. flavipes in central area. (Howell).

Some of the More Important Insects in 1955

GEORGIA - Boll weevil, bollworm, house fly, termites, rice weevil, pine bark beetles, horn fly, honey bee, aphids, lesser cornstalk borer. (Johnson).

STORED PRODUCTS INSECTS

KHAPRA BEETLE (Trogoderma granarium) - NEBRASKA - Seed houses were surveyed in Scottsbluff, Lincoln, Ralston, Norfolk, Omaha and Beatrice. All were negative. (Walstrom, Fitchett, Andersen, Mar. 17). CALIFORNIA - Four new infestations found during week of Mar. 28. To date 266 infestations in 18 counties with a total of 61,628,224 cubic feet. To date 139 premises with 44,339,152 cubic feet have been fumigated and released. (Cal. Coop. Rept.).

A PARASITIC MITE (Haemogamasus oudemansi) - ORE. Infesting stored feed in association with Acarus siro and Glycyphagus destructor at Corvallis, Mar. 21. (Krantz).

RECENT INTERCEPTIONS AT PORTS OF ENTRY

Of interest was the recent interception of living larvae of the fruit fly, Anastrepha fraterculus (Wied.) in Achras sapote fruit in airplane baggage from Venezuela at New York, N. Y. (Tuthill, Kline). This insect is con-

sidered a serious pest of cultivated fruits in many parts of South America. It has also been reported on the islands of Trinidad and Tobago. It has been found infesting more than 40 kinds of fruits. Guavas, citrus, mangoes, peaches and Surinam cherries seem to be most commonly attacked.

Observations on the life history of the insect in Peru indicate the adult stage is usually about one month in duration. Eggs hatch in 3 days in summer to 6 in winter. One to fifty eggs may be deposited in one fruit. Larval stage varies from 12-20 days in summer to 20-25 days in winter; pupal stage from 15-18 to 20-25 days. Six or seven generations may develop in a year.

Living larvae of A. fraterculus have been intercepted on many occasions at various ports in fruits, usually citrus from South American countries. This insect is not known to occur in the United States. (Compiled - Plant Quarantine Branch)

Weather continued from p. 278

Texas. Temperatures fluctuated considerably during the period in the central Plains area with Salt Lake City reporting a new daily low of 18° for March 28 and the airport a new daily high of 72° for March 30. Precipitation amounts were moderate to heavy along the north Pacific Coast, also in a band extending generally from eastern North Dakota south of the Great Lakes through Ohio and eastern Kentucky and Tennessee, then jutting into South Carolina and from there southwestward into Georgia, Alabama, and Mississippi. Moderate amounts also occurred along the north Atlantic Coast and in isolated areas. No precipitation fell in most of Florida and portions of the Southwest and south central Great Plains. Rain is needed badly in these areas with San Francisco, California, reporting the third driest March since 1850, while over most of the East wet soils continue to hamper work in the fields. Along the Canadian Border snowdepths continue to decrease in the western districts, while in the central and eastern sections, even though melting has occurred, additional snows have kept depths much the same. Duluth, Minnesota with one of the higher depths for lower elevations reports 23 inches. At higher stations in the West, Mount Baker Lodge, Washington reports 282 inches; Paradise Ranger Station, Washington 330 inches; Crater Lake, Oregon 168 inches, and Twin Lakes, California, 86 inches. (Summary Supplied by U. S. Weather Bureau).

LIGHT TRAP COLLECTIONS

	Pseudal. unipunc.	Prod. ornith.	Agrotis ypsilon	Perid. marg.	Feltia subt.	Heliothis zea	Agrotis malefida
LOUISIANA							
Baton Rouge 3/24-29	12		4		23	3	1
*Tallah 3/24-29	170	2	29	41	6	6	1
ARKANSAS							
Stuttgart 3/22-28	16		29				
Fayetteville 3/24-30	8		5	2			
Clarksville 3/6-26	2		2				
MISSISSIPPI (Counties)							
Oktibbeha 3/23-30	5		3	3			
Coahoma 3/22-30	10		5	15			
Humphreys 3/23-30	5		5	12	2		
Lauderdale 3/23-30	1						
*Washington 3/23-29	232		29	68		4	
TENNESSEE (Counties)							
Madison 3/20-26	1	1					
Maury 3/20-26	7			3			
Robertson 3/20-26	1			2			
Cumberland 3/20-26	2						
Knox 3/20-26			1	2			
ALABAMA							
Auburn 3/25-31	1						
KENTUCKY (Counties)							
Hickman 3/22	7						
Carlisle 3/22	4						
FLORIDA							
Homestead 3/23	2						
Sanford 3/23					1		
SOUTH CAROLINA (Counties)							
Charleston 3/12-17	3		3	1	12		1
Oconee 3/25-31	1	1	2				1

* Three traps at Tallulah; two traps Washington County.

SUMMARY OF INSECT CONDITIONS - 1955

GEORGIA

Reported by W. C. Johnson*

Cereal and Forage Insects:

THRIPS, mostly Frankliniella bispinosa and F. tritici, were not as abundant on Borre sweet lupine in 1955 as in 1954 and damage was less severe. As many as 2400 thrips occurred in a 5-raceme sample. Peak abundance on lupine occurred about April 15. LUPINE MAGGOT (Hylemya lupini) was much more abundant in the fall of 1955 than in 1954. First-brood infestations in fields ran as high as 98 percent in 1955 and none higher than 65 percent were observed in 1954. LESSER CORN-STALK BORER (Elasmopalpus lignosellus) was much less destructive in 1955 than in 1954. Percent of plants killed in late soybean fields in 1954 in some areas approached 100 percent. Plant mortality in 1955 rarely exceeded 20 percent. The lower plant mortality was largely attributed to greater rainfall which enabled plants to survive rather severe injury. Damage in the Tifton area ranged from 10-17 percent of corn planted after April 7. CORN EARWORM (Heliothis zea) was unusually abundant in 1955 and attacked a wide variety of crops. It damaged peanuts severely in some areas and grain crop of one field of milo was completely destroyed. Infestation on medium and late planted corn ran from 85 to 100 percent. Although larvae were abundant and damage severe to very late corn, larval populations did not reach the numbers expected. It is felt that parasites and predators, which were very common, caused a high larval mortality. The pest was abundant in grain sorghum heads.

STRIPED BLISTER BEETLE (Epicauta sp.), MEXICAN BEAN BEETLE (Epilachna varivestis) and YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) were abundant on soybeans. A SPITTLEBUG believed to be (Tomaspis bicincta) was abundant on coastal Bermuda grass and seriously damaged large areas in the vicinity of Albany, Georgia. FALL ARMYWORM (Laphygma frugiperda) caused light damage to corn and grain sorghum and severe damage to very late planted field corn at Tifton but was not as numerous as in 1954. A GRASSWORM (Mocis sp.) was as abundant in 1955 as in 1954 in some areas and damage to late grass crops was severe in limited areas. A CLOVER WEEVIL (Hypera meles) and LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) were abundant in crimson clover. THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) caused heavy damage on alfalfa and lespedeza in Spalding, Sumter and Gordon Counties. FULLER ROSE BEETLE (Pantomorus godmani) and the LESPEDEZA WEBWORM (Tetralopha scortealis) were abundant on lespedeza. CLOVER ROOT CURCULIO (Sitona hispidula) larvae

* This summary was compiled from reports and records submitted by the following cooperators: E. W. Beck, C. M. Beckham, C. C. Blickenstaff, R. P. Harrison, C. R. Jordan, D. W. LaHue, L. W. Morgan, W. E. Neville, M. R. Osborn, O. I. Snapp, H. H. Tippins.

caused heavy damage to alfalfa. Adults damaged crimson clover seedlings during the fall. ARMYWORM (Pseudaletia unipuncta) caused moderate damage to oats during April and May. SORGHUM MIDGE (Contarinia sorghicola) severely damaged grain sorghum in several counties. GRASSHOPPERS, mostly Melanoplus spp., were unusually abundant. RICE WEEVIL (Sitophilus oryza) infestations in the field were spotty. Several lightly damaged fields and one severely damaged field were observed in south Georgia. A severe infestation of SUGARCANE BEETLE (Euethola rugiceps) occurred in corn following sod in Newton County. The stand in the 50-acre field was completely destroyed and replanting was necessary.

Fruit Insects:

PLUM CURCULIO (Conotrachelus nenuphar) infestation was very light in 1955, due to the absence of a peach crop which was completely killed by a freeze March 27. The 1954 Georgia peach crop was perhaps the cleanest on record, and consequently the carry-over of plum curculio adults into 1955 season was considerably less than usual. The hibernating population of adults in the fall of 1955 was very light. PEACH TREE BORER (Sanninoidea exitiosa) infestation continues to increase in Georgia, believed to be due largely to the increased use of trunk sprays which are less effective than the fumigant-type treatments in heavily infested orchards in those latitudes where the insect has a long oviposition period. The absence of spraying for plum curculio control due to no peach crop may have also contributed to the increased peach tree borer infestation. LESSER PEACH TREE BORER (Synanthedon pictipes) was heavier than in 1954, which may be partially due to the absence of spraying for plum curculio. A lesser peach tree borer moth on wing depositing eggs in a commercial peach orchard was observed on November 15, 1955 at Fort Valley. This is the latest oviposition record under peach orchard conditions on record for the area. SAN JOSE SCALE (Aspidiotus perniciosus) increased in 1955 and is now abundant in some orchards. There was no spraying for plum curculio control in 1955 due to the absence of a peach crop, and this may have contributed to the San Jose scale build-up. PLUM GOUGER (Anthonomus scutellaris) was unusually abundant this year on wild plum bushes. Cultivated plums and peaches were all killed by a March freeze. GRAPE BERRY MOTH (Paralobesia viteana) was very abundant on unsprayed grapes at Fort Valley, and caused considerable grape dropping. PLANT BUGS (coreids and stink bugs) were less abundant than usual in 1955 as determined by sweeping peas and grass and jarring peach trees. FALL WEBWORM (Hyphantria cunea) was considerably less abundant than usual on pecan, persimmon and wild cherry.

Truck Crop Insects:

LESSER CORNSTALK BORER caused light to moderate damage to stands of field peas in Spalding County. Most damage occurred during August and was less severe than 1954. TOBACCO HORNWORM (Protoparce sexta) occurred in moderate numbers on pimiento peppers in Spalding County early in the season only. This was probably a carryover from

the heavy infestation during 1954. Moderate infestations of MEXICAN BEAN BEETLE (Epilachna varivestis) were present on green beans in Spalding County. The TOMATO FRUITWORM (Heliothis zea) caused the usual amount of damage to tomatoes. Moderate to heavy infestations of the PICKLEWORM (Diaphania nitidalis) were present in cantaloups and summer squash in Spalding County. One field of cantaloups was completely ruined by this pest. COWPEA CURCULIO (Chalcoedermus aeneus) continued to cause damage to field peas. FLEA BEETLES (Chaetocnema and Systema spp.) in the larval stage caused light to moderate damage to sweetpotato roots. Light infestations of the SWEETPOTATO HORNWORM (Agrius cingulatus) and moderate infestations of a LOOPER occurred on this crop. CORN EARWORM was again severe on sweet corn. VEGETABLE WEEVIL (Listroderes costirostris obliquus) continued to be a pest of turnips in home gardens. APHIDS built up heavily on fall turnips and collards. The SOUTHERN CABBAGEWORM (Pieris protodice) was common on collards and turnips during the fall. FLEA BEETLES and LACEBUGS occurred on eggplant in Spalding and Clarke Counties.

Cotton Insects:

BOLL WEEVIL (Anthonomus grandis) went into and emerged from hibernation in low numbers when compared with records of the previous three years. Very light infestations in early season developed into very heavy infestations late in the season. BOLLWORM (Heliothis zea) damage was relatively severe with some fields having 5 percent of squares damaged. Boll damage was moderate to heavy throughout the State. Boll damage in untreated fields was as high as 38 percent in Spalding County. The bollworm made its appearance earlier than usual. Infestations of THRIPS were light throughout the State. Serious COTTON APHID (Aphis gossypii) infestations did not develop during the season. SPIDER MITES were quite a problem in many counties beginning in mid-season and continuing throughout the season.

Tobacco Insects:

VEGETABLE WEEVIL damage to tobacco beds was light but the infestation was general. TOBACCO BUDWORM (Heliothis virescens) and HORNWORMS (Protoparce spp.) infestations were light throughout the season. The heaviest outbreak occurred during May. The large numbers of budworms which have been appearing at the time of bloom did not appear. Infestations of GREEN PEACH APHID (Myzus persicae) required control measures more frequently than other tobacco insects. This insect was the most important pest of tobacco in 1955.

Peanut Insects:

THRIPS caused severe damage to peanuts in some localities. Infestations of the RED-NECKED PEANUTWORM (Stegasta bosqueella) were very severe with 100 percent of the terminals being infested in many fields. Of the leaf-feeding lepidoptera, the CORN EARWORM was the predominant species. Mixed infestations also included Heliothis virescens, Trichoplusia ni, Laphygma frugiperda, one species of a geometrid and one species of pierid. Several generations of these insects made it necessary for control practices to be carried on from late July until

about the first of October. LESSER CORNSTALK BORER damage was generally light, but some damage occurred in areas of very light rainfall or where peanuts were planted late and nut production occurred during dry weather.

Pecan Insects:

PECAN WEEVIL (Curculio caryae) injury was noticeable in some areas where it previously had attracted little attention because of a light crop of nuts. Generally severe infestations of the HICKORY SHUCKWORM (Laspeyresia caryana) developed late in the season causing poor quality nuts in some locations which escaped the March freeze. PECAN NUT CASEBEARER (Acrobasis caryae) infestations were very light in Georgia during 1955. BORERS of various species were more common than usual. BLACK PECAN APHID (Melanocallis caryaefoliae), FALL WEBWORM (Hyphantria cunea) and WALNUT CATERPILLAR (Datana integerrima) infestations ranged from light to medium.

Forest, Ornamental and Shade Tree Insects:

Forest insect conditions in Georgia were much less severe in 1955 than 1954. BARK BEETLES, primarily Ips pini and the BLACK TURPENTINE BEETLE (Dendroctonus terebrans) continued in outbreak numbers throughout the State, however. These species killed roughly 18,000 board feet of timber in 37 south Georgia counties between July and October, 1955. Locally severe outbreaks of SOUTHERN PINE BEETLE (Dendroctonus frontalis) have developed in several northern and western counties. Mortality from attacks by this beetle are expected to be high during 1956. The very heavy infestations of NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) declined in 1955, due apparently to heavy infection of the larvae by an unidentified disease. Severe outbreaks of the RED-HEADED PINE SAWFLY (Neodiprion lecontei) in south Georgia were suppressed by a disease epidemic of the larvae.

Stored Product Insects:

In general, stored grain insects were more abundant in 1955 than in 1954. Light infestations of the ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) were observed in a number of oats storage warehouses during August and September; heavy infestations were noted in a few warehouses during October. FLOUR BEETLES (Tribolium spp.) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) were present in practically all oats storage warehouses, but were of significant economic importance in only a few scattered storages. Severe damage by the LESSER GRAIN BORER (Rhyzopertha dominica) occurred in stored barley in Macon and Toombs Counties. Light to heavy infestations of the INDIAN-MEAL MOTH (Plodia interpunctella) and Ephestia spp. were generally found in stored peanuts. RICE WEEVIL (Sitophilus oryza) infestations in farm-stored corn were lighter than in previous years.

Insects Affecting Man and Animals:

SCREW-WORM (Callitroga hominivorax) light infestations occurred in some counties. HOUSE FLY (Musca domestica) populations were heavy

over the State from June well into the fall. FLEAS (Ctenocephalides spp.) were a serious problem in and around homes. COCKROACHES were reduced due to the concerted efforts of a roach control campaign. CATTLE LICE, GRUBS AND HORN FLIES caused the usual amount of damage.

Beneficial Insects:

The beekeepers of Georgia lost approximately 16,000 colonies of bees during the winter and spring of 1955. Most of this loss came after the late March freeze from starvation and the necessity of combining weak colonies with stronger ones to prevent starvation. Increases were made during the year to replace most of the losses. As a result of the late March freeze, followed by dry weather, honey production in Georgia was 41 percent below that of 1954. The amount of American foulbrood in Georgia has been greatly reduced during the past few years.

The Entomological Society of America survey committee has asked that information on important insect conditions in foreign countries be obtained and carried in the Cooperative Economic Insect Report. Through Mr. E. J. Hambleton, in charge of Foreign Technical Assistance Programs, summaries will be furnished by American entomologists attached to the Regional Insect Control Projects in some of the Near East and African countries. The first of these summaries follows.

SUMMARY OF INSECT CONDITIONS - 1955

PAKISTAN*

Reported by G. E. Cavin

Cereal and Forage Insects

DESERT LOCUST(Schistocerca gregaria) was a relatively minor problem in Pakistan. Thirteen swarms entered the summer breeding area of Sind, Khaipur and Bahawalpur but lack of rainfall retarded breeding. Light damage to cotton occurred at Rahimyarkhan, Bahawalpur and nymphs damaged gram (certain leguminous plants grown for seed) at Dera Ismail Khan in the Northwest Frontier in July. At the end of the year, Pakistan was completely free of locusts. SUGARCANE PYRILLA (Pyrilla perpusilla) populations were much lower than normal in the Northwest Frontier. Control measures were used. Fall surveys showed heavy egg parasitism. Infestation continued to spread in East Pakistan. SUGARCANE BORERS (Scirpophaga nivella and Argyria tumidicostalis) damaged cane in the Punjab and in East Pakistan. Ten to 42 percent of

*In so far as possible scientific names have been cleared with ARS records.

the stalks were infested at Gopalpur, East Pakistan. The variation in the population depended on the variety of cane being produced. RICE STEM BORER (Schoenobius incertulas) destroyed 15 percent of the rice crop at Gujranwalla in the Punjab and reduced the average rice yield from 656 to 329 pounds per acre at Umerkot, Sind. ARMYWORM (Pseudaletia unipuncta) completely destroyed the Aman rice crop in many areas of East Pakistan and a serious food shortage resulted. Heavy rains eventually controlled the outbreak. HOUSE CRICKET (Acheta domestica) attacked gram and oil seeds at Usta Mohammad, Sind, causing extensive damage. JUTE HAIRY CATERPILLAR (Diacrisia obliqua) attacked rice near Dacca, East Pakistan, in early July.

Truck Crop Insects

RED PUMPKIN BEETLE (Raphidopalpa sp.) damaged cucurbits at Malir, Karachi Federal Area.

Fruit Insects

A PEACH BORER (Sphenoptera lafertei) threatens to destroy the entire peach industry in the Northwest Frontier. No satisfactory control has been found. The QUETTA BORER (Aeolesthes sarta) and the SHOT HOLE BORER caused extensive damage to peach and apple trees in Baluchistan. ALMOND SCALE is spreading rapidly as very little control is being undertaken. APHIDS on pomegranates caused heavy damage at Loralai, Baluchistan. CODLING MOTH (Carpocapsa pomonella) damage was reduced in the Northwest Frontier by control measures. MANGO SHOOT BORER (Alcides frenatus) damaged mangoes at Mirpurkhas, Sind. MANGO LEAFHOPPER (Idiocerus atkinsoni) populations were reduced in the Karachi Federal District and in lower Sind but increased in abundance at Khairpur. COCONUT SCALE (Aspidiotus destructor) increased in mango orchards of lower Sind. Light to moderate infestations of the PEACH CURL APHID (Brachycaudus pruni) occurred in Baluchistan. CITRUS BLACKFLY (Aleurocanthus woqlumi) was prevalent on citrus and mangoes in the Northwest Frontier and lower Sind.

Cotton Insects

SPOTTED BOLLWORM (Earias fabia) and SPINY BOLLWORM (Earias insulana) were generally reduced except for central Sind where by late September 30 percent of the bolls were damaged. WHITEFLIES (Bemisia tabaci) and LEAFHOPPERS (Empoaca devastans) damaged cotton at Rahimyarkhan, Bahawalpur and Multan, Punjab. Control measures were undertaken. PINK BOLLWORM (Pectinophora gossypiella) is gaining importance in Sind. TERMITES (Microtermes spp.) caused extensive damage to cotton in Sind, Bahawalpur and the Punjab.

Stored Grain Insects

Twenty-thousand tons of wheat were completely destroyed at Karachi by the LESSER GRAIN WEEVIL.

Miscellaneous Insects

MITES (Tetranychus spp.) populations were lower than usual in tea plan-

tations of East Pakistan. EEL WORMS caused heavy damage to nursery plantings of tea near Sylhet, East Pakistan. A COFFEE BORER destroyed the coffee crop at the Government Plantation near Chittagong, East Pakistan.

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