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Cooperative Economic Insect Report

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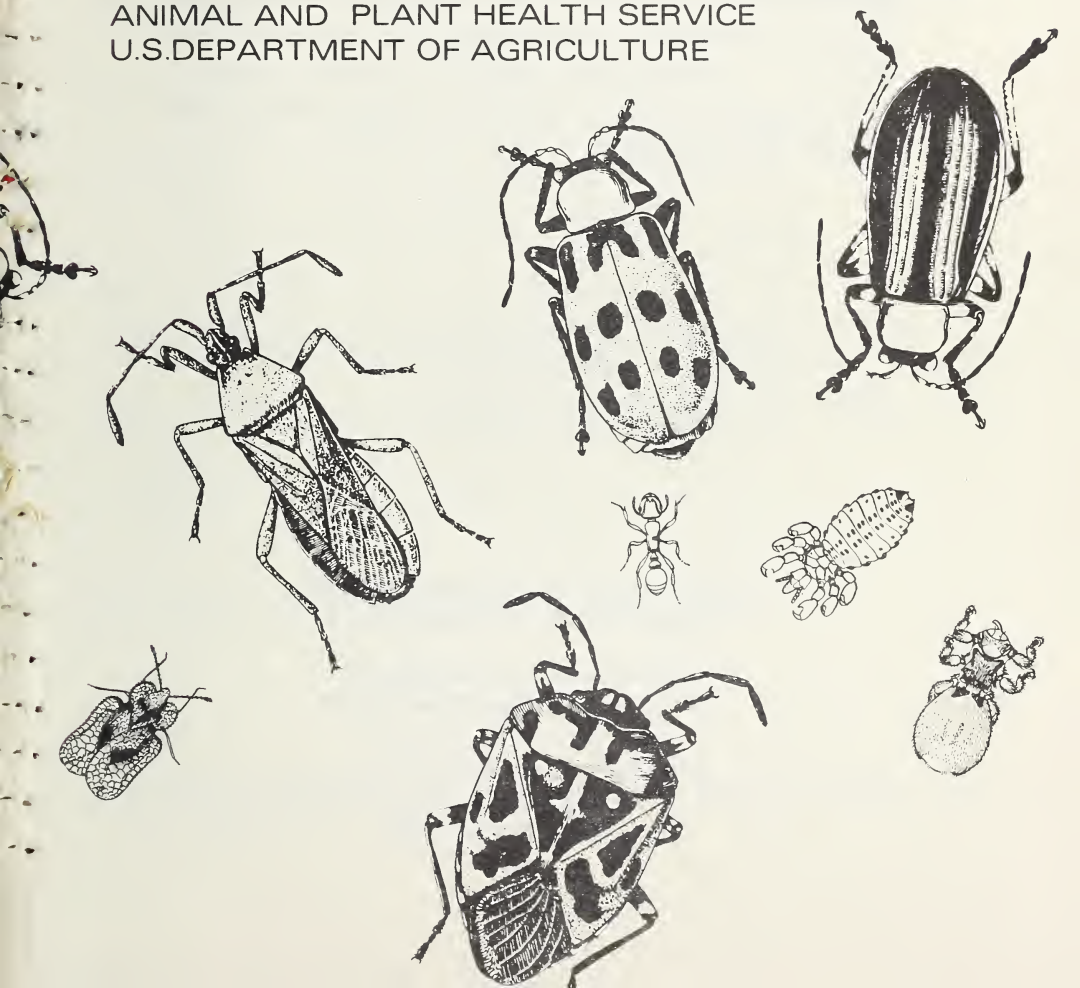

ANIMAL AND PLANT HEALTH SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
ECONOMIC INSECT SURVEY AND DETECTION STAFF

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

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG still heavy in wheat in Oklahoma and some controls applied in Rolling Plains of Texas. (p. 145).

Survival of overwintering EUROPEAN CORN BORER less than normal in Illinois. (p. 145).

ALFALFA WEEVIL larval infestations heavy throughout southeast Oklahoma. Expect heavy damage to alfalfa late in season in Illinois. (p. 146).

PEAR PSYLLA egg laying increased in north-central Washington, controls applied in Yakima Valley. (p. 147).

Detection

New State records include a GALL MIDGE from Indiana (p. 147) and a LAND SNAIL from South Carolina (p. 148).

For new county records see page 149.

Special Reports

Insects Not Known to Occur in the United States
An African Honey Bee (Apis mellifera adansonii) (pp. 158-160).

Summary of Insect Conditions in the United States - 1971
Deciduous Fruits and Nuts (pp. 150-154).
Citrus (pp. 154-155).
Small Fruits (pp. 155-156).
Ornamentals (pp. 156-157).

Distribution of European Red Mite. Map. (p. 151).

Reports in this issue are for week ending March 17 unless otherwise indicated.

CONTENTS

WEATHER OF THE WEEK ENDING MARCH 20

Reprinted from Weekly Weather and Crop Bulletin supplies by Environmental Data Service, NOAA.

HIGHLIGHTS: The Southwest continued very dry. The northern Rocky Mountains and northern Great Plains enjoyed springlike temperatures, some localities averaging 15 degrees to 20 degrees warmer than the previous week.

PRECIPITATION: Light rains fell along the Washington coast and southward to northern California and light unimportant showers eastward to Montana in connection with a frontal system moving through the area early in the week. Heavier precipitation occurred over the eastern half of the Nation. A storm centered south of the Great Lakes Monday moved eastward to the Atlantic Ocean. Four to 6 inches of snow fell in the northern and western parts of Chicago, late Monday. The storm spread wet and windy weather from the lower Great Lakes to the Ohio River Valley and eastward to New England. Snow fell in some northern areas; thunderstorms occurred in the southern portions of the storm. The weather was especially unpleasant where mixtures of rain, freezing rain, sleet, and snow slicked the highways. Thunderstorms in New York and New Jersey were accompanied by winds gusting to 50 m.p.h. About the time the storm reached the Atlantic coast, another low developed in the Oklahoma Panhandle. It set off thunderstorms in Nebraska, Kansas, and Missouri late Tuesday. Dust storms occurred in the Texas Panhandle. As the storm moved eastward across the Ohio River Valley, it spread light snow over the Upper Great Lakes, rain and thunderstorms from the Lower Great Lakes to the Gulf of Mexico, and heavy snow over New York and portions of New England. In general, the new snow over New York and New England ranged from 3 to 10 inches. Utica, New York, received 14 inches in 6 hours early Wednesday. Hail fell late Wednesday from some of the thunderstorms from eastern Texas to southern Illinois. Weekend precipitation included light rain in

Weather of the week continued on page 157.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Euxoa auxiliaris) - KANSAS - Ranged 1-2 per square foot in established alfalfa in Lyon County. (Bell). COLORADO - Problems continue on winter wheat and alfalfa in Boulder and Adams Counties. Larvae ranged 1-4 per linear foot of wheat in Logan and Weld Counties. (Marquardt, Hantsbarger).

GREENBUG (Schizaphis graminum) - TEXAS - Infestations spotty throughout north area on small grains. Some fields treated in Denton and surrounding counties and Rolling Plains. (Turney, Boring). OKLAHOMA - Very heavy (1,000-2,000 per linear foot) in scattered wheatfields in Cotton and Tillman Counties. Also heavy (100-300 per linear foot) in scattered fields in other southwest counties and in central and south-central areas. Counts variable, averaged less than 10 per linear foot in some fields. Parasites noted in most fields; parasitism 5-10 percent in few areas. Counts ranged 0-35 per linear foot in west-central area. Counts in north-central, northeast, and east-central areas seldom averaged more than 10 per linear foot. Predators active in most areas, only Hippodamia convergens (convergent lady beetle) common to date. (Okla. Coop. Sur.). MISSOURI - Light, 1-8 per linear foot, in small grains in southwest area. Ranged 20-100 per linear foot in small spots in 2 fields in this area. (Munson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - FLORIDA - Light on alfalfa at Gainesville, Alachua County. (Mead). OKLAHOMA - Increased on alfalfa in southwest area; infestations moderate on susceptible varieties. (Okla. Coop. Sur.). ARIZONA - Problems noted in many alfalfa fields in Salt River Valley. First cutting difficult for many growers, due to abundant honeydew obstructing baling mechanism in machines in Maricopa County. (Ariz. Coop. Sur.). NEVADA - This species and Acyrthosiphon pisum (pea aphid) averaged less than 2 per sweep in Pahrump Valley, Nye County, alfalfa. (Zoller).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - ILLINOIS - Survival of overwintering borers averaged 74 percent as compared with 80-85 percent for normal year. Highest survival rate 80 percent in northwest area and lowest 68 percent in southeast area. (Ill. Ins. Sur.).

SMALL GRAINS

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Ranged 1-5 per linear foot in most wheat in Kingfisher, Canadian, and Grady Counties. Averaged 70 per linear foot in field in Chickasha area, Grady County. (Okla. Coop. Sur.).

BROWN WHEAT MITE (Petrobia latens) - OKLAHOMA - Moderate to heavy in wheat in Cimarron County. Averaged 30 per linear foot in Cotton County field. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Mostly winged forms appearing in wheat in central, south-central, and southwest areas. Ranged 0-5 per linear foot. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

RANGE CRANE FLY (Tipula simplex) - CALIFORNIA - Females infested pastureland at Modesto, Stanislaus County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - TEXAS - New county records include Baylor, Coleman, Eastland, Foard, Haskell, Johnson, Jones, Knox, Runnels, Schleicher, Stephens, Taylor, Throckmorton, and Wise. Adults damaged alfalfa in Wilbarger, Navarro, Johnson, and Wise Counties. Heavy larval infestations noted in Brazos County. (Boring et al.). OKLAHOMA - Larval infestations heavy throughout southeast half of State, including east-central, southeast, and south-central areas, and parts of the northeast, central, and southwest areas. Range per square foot by county: Up to 300 in Tillman; up to 100 in Muskogee, Wagoner, and McIntosh; up to 60 in Tulsa; and up to 20 in Johnston. Terminals 70-100 percent infested in most alfalfa with as many as 12 larvae per terminal reported. All larval stages present in most areas and pupation noted in Cotton County. Terminals ranged 48-64 percent infested in Caddo County and larvae ranged 2-6 per square foot in Garfield County. Moderate in Craig County. Ranged 1-3 per terminal in 84 percent of terminals in field of vetch in Carter County. (Okla. Coop. Sur.). MISSOURI - Early instar larvae noted north to Bates County, in western area of State. (Munson). ILLINOIS - Tip feeding ranged 0-32 percent; larvae ranged 0-44 per 100 stems of 2-inch tall alfalfa in 5 Johnson County fields. Current rate of development early and may indicate heavy damage late in season. (Ill. Ins. Sur.). KENTUCKY - Egg averages per square foot of alfalfa: 138 in Oldham County field; 172 in Barren County field; and 230 in Warren County. Larvae averaged 1.9 per square foot in Fayette County. Eggs deposited averaged 10 per square foot. (Barnett). VIRGINIA - First hatch in Charlotte County on March 2, and in Powhatan County on March 3 about 75 percent of tips infested with 1-2 first and second instar larvae per tip. Infestations 21 days earlier than usual. (Allen). TENNESSEE - First and second instar larvae light on alfalfa in Tipton County. Current counts below control levels. (Gordon). FLORIDA - Collected 87 larvae in 100 sweeps of alfalfa at Gainesville, Alachua County. (Mead).

CLOVER LEAF WEEVIL (Hypera punctata) - MISSOURI - Larvae ranged 0-13 per square foot in west-central area. (Munson).

PEA APHID (Acyrthosiphon pisum) - FLORIDA - Light on alfalfa at Gainesville, Alachua County. (Mead). OKLAHOMA - Scattered, moderate to heavy counts (400-550 per square foot) in southwest counties and in Grady, Canadian, Caddo, and Woodward Counties. Ranged 10-20 per square yard in Muskogee, Wagoner, and McIntosh Counties and light in Garvin and Johnston Counties. (Okla. Coop. Sur.). ARIZONA - Heavy on alfalfa in Graham County and 140 per 100 sweeps in Maricopa County. (Ariz. Coop. Sur.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Counts of 800 per 100 sweeps of alfalfa in Graham County and 26 in Maricopa County. (Ariz. Coop. Sur.).

BEANS AND PEAS

PEA LEAF WEEVIL (Sitona lineatus) - IDAHO - Adults observed on volunteer pea leaves near Moscow, Latah County. (Futter, Mar. 9).

COLE CROPS

DIAMONDBACK MOTH (Plutella xylostella) - NEW MEXICO - Light to moderate on cabbage in southern Dona Ana County. (Clayshulte).

DECIDUOUS FRUITS AND NUTS

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - Controls applied in lower and upper Yakima Valley, Yakima County. Trap collections in this area indicate much movement. Controls underway in Chelan, Douglas, and Okanogan Counties. Egg laying increased in north-central areas due to warmer weather. (Ballard et al.).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - OKLAHOMA - Larvae on peach trees as far north as Major and Mayes Counties on March 11. Larvae heavy on wild plum in scattered south-central areas and in Cotton County. (Okla. Coop. Sur.). ALABAMA - First of season. Second instar larvae feeding on plum in Lee County. (Barwood).

FOREST AND SHADE TREES

A GALL MIDGE (Taxodiomyia cupressiananassa) - INDIANA - Specimens collected from bald cypress in Vanderburgh County during October 1971 by V.R. Knapp. Determined by J. Appleby. This is a new State record. (Knapp). Specimens collected in Posey County during November by J.L. Van Camp for a new county record. (Meyer).

ELM LEAF BEETLE (Pyrrhalta luteola) - SOUTH DAKOTA - Collected on elm, June 6, 1971, in Jerauld County. This is a new county record. (Carson).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 14 cases reported in U.S. March 5-18 as follows: TEXAS - Hidalgo 3, Jim Hogg 1, Kenedy 2, Starr 1, Webb 1, Zapata 4, Kleberg 1. ARIZONA - Cochise 1. Total of 263 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 108, Chihuahua 17, Coahuila 8, Nuevo Leon 28, Tamaulipas 102. Total of 78 cases reported in Mexico south of Barrier Zone. Barrier Zone is where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 48,950,000 and Mexico 157,134,000. (Anim. Health).

COMMON CATTLE GRUB (Hypoderma lineatum) - TEXAS - Adults noted in north-central area. (Turney). OKLAHOMA - Ranged 10-12 per head on cattle in Johnston County. Moderate in Craig and Muskogee Counties, and light in Tulsa and Woodward Counties. (Okla. Coop. Sur.). KENTUCKY - Averaged 4.7 (ranged 0-21) on backs of dairy cows of various ages in Fayette County. (Barnett).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Eight adults noted on single cow in Oktibbeha County. First of season. (Combs). OKLAHOMA - First adults of season ranged 30-50 per head on cattle in Payne, Noble, and Lincoln Counties. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - OREGON - Adult males appearing in Salem, Marion County. (Goedon).

HOUSE FLY (Musca domestica) - OKLAHOMA - Adults up to 5 per Scudder grid in barns in Payne County. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Mainly Haematopinus eurysternus (short-nosed cattle louse) still moderate to heavy on cattle in most areas. (Okla. Coop. Sur.).

STORED PRODUCTS

TOBACCO MOTH (Ephestia elutella) - NORTH CAROLINA - Surveys in 28 major tobacco storing counties made to determine locations of heaviest infestations and losses. Heaviest infestations reported in Wilson, Wayne, Greene, Pitt, and Craven Counties. About 13.6 million pounds of flue-cured tobacco stored in State during 1971. Total value in counties surveyed estimated at $8.4 million and total loss of about $1.1 million or 13 percent. Cost of control not included. (Hunt).

INDIAN MEAL MOTH (Plodia interpunctella) - SOUTH DAKOTA - Economic in seed corn stored at Brookings, Brookings County. Treatments applied. (Walstrom).

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - TENNESSEE - Heavy in corn storage area in Fayette County. (Smith, Rezba).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - OKLAHOMA - Larvae ranged 2-3 per linear foot in many greenbug infested wheatfields in southwest and south-central areas. Adults and pupae present. (Okla. Coop. Sur.).

A BRACONID (Lysiphlebus testaceipes) - OKLAHOMA - Present in most greenbug infested wheatfields in southwest quarter of State. Parasitism averaged 1 or 2 percent in most areas but ranged 5-10 percent in few scattered areas. Parasitism averaged 20 percent in one field in Garvin County. (Okla. Coop. Sur.).

HONEY BEE (Apis mellifera) - MINNESOTA - Surveys indicate over-wintering losses heavy due to starvation in Ramsey and Hennepin County area. (Minn. Pest Rpt.).

A LAND SNAIL (Vertigo rugosula) - SOUTH CAROLINA - Specimens collected at Charleston, Charleston County, by B.S. Lawrimore on March 6, 1972. Determined by W.J. Byas. This is a new State record. (Nettles). No economic importance, feeds on fungus and bacteria. Generally distributed throughout southeast U.S. (PP).

General Vegetables - SOUTHERN GREEN STINK BUG (Nezara viridula) trace, less than 1 nymph or adult per 20 plants, in 3,000 square feet of soybeans at Pearl City, Oahu. Three of 7 adults (41 percent) bore eggs of a tachina fly (Trichopoda pennipes var. pilipes). (Miyahira).

Fruits and Nuts - HAWAIIAN THRIPS (Taeniothrips hawaiiensis) light to moderate in flowers of 4 macadamia nut orchards (total 5.5 acres) at Kohala, Hawaii. Adults of FULLER ROSE WEEVIL (Pantomorus cervinus) trace on young terminal growth at every orchard; less than 5 percent of terminals affected. (Kobayasihi). Collected 23 larvae and 11 eggs of a SWALLOWTAIL BUTTERFLY (Papilio xuthus) from 5 citrus plants at Salt Lake, Oahu; one egg parasitized. Collections of Podotachina sorbillans negative to date; this tachina fly purposely introduced from Thailand to aid in control of P. xuthus. COCONUT LEAFROLLER (Hedylepta blackburni) larvae moderate to heavy at Kahyku, Oahu. (Davis, Mitchell).

Forest and Shade Trees - PACIFIC BEETLE COCKROACH (Diplotera punctata heavy, as many as 128 nymphs and adult per 12-inch long branch, on 25-30 percent of terminals of 75+ Casuarina sp. trees at Tantalus, Oahu. Damage negligible (Kashiwai).

DETECTION

New State Records - A GALL MIDGE (Taxodiomyia cupressiananassa) - INDIANA - Vanderburgh County. (p. 147). A LAND SNAIL (Vertigo rugosula) - SOUTH CAROLINA - Charleston County. (p. 148).

New County Records - ALFALFA WEEVIL (Hypera postica) TEXAS - Baylor, Coleman, Eastland, Foard, Haskell, Johnson, Jones, Knox, Runnels, Schleicher, Stephens, Taylor, Throckmorton, Wise (p. 146). ELM LEAF BEETLE (Pyrrhalta luteola) SOUTH DAKOTA - Jerauld (p. 147). A GALL MIDGE (Taxodiomyia cupressiananassa) INDIANA - Posey (p. 147).

(Continued from page 141)

DECIDUOUS FRUITS AND NUTS

Highlights:

PEAR PSYLLA was difficult to control in some areas of Oregon and Washington late in the season. Populations were heavy in Michigan orchards. CODLING MOTH was serious on walnuts in California. WALNUT CATERPILLAR caused complete defoliation of walnut in many areas of northwest Arkansas and southern Missouri. A new North American record was reported for an ERIOPHYID MITE in Oregon.

CODLING MOTH (Laspeyresia pomonella) first appeared in sexlure trap in Yakima County, WASHINGTON, April 27. First-generation exit holes were first observed about July 1. Second generation entry holes were found August 3 at Grandview. In CALIFORNIA, infestations were widespread in apples and pears. Populations increased in NEW MEXICO in untreated and improperly treated orchards. Many orchards in the northern areas were not treated due to poor crop following frost damage. Codling moths appeared in COLORADO in Western Slope orchards about April 25. Moths continued to increase, up to 30 per trap were recorded the week of May 8-14. By the first week of June, moths were collected from all fruit areas of Mesa, Delta, Montrose, and Garfield Counties. Second-generation moths appeared during the period July 10-16. In many areas of Colorado, 4 cover sprays were applied for control on apples and pears. In MICHIGAN, emergence was first observed in southern orchards May 28 and about 10 days later in the northern areas. Larval entries into fruit was noted 14 days after emergence. Second-generation moths appeared July 13 and peaked July 27. A few moths were observed until September, due to the warm and humid weather.

ORIENTAL FRUIT MOTH (Grapholitha molesta) flights were light in May and early June in Mesa County, COLORADO. Moth collections increased by June 19, with up to 47 per trap. Parasites were released in orchards at this time. Moth recoveries were up to 60 per trap by July 16 and controls were recommended. In MICHIGAN, first-generation moth emergence peaked June 27. Populations remained light until late August.

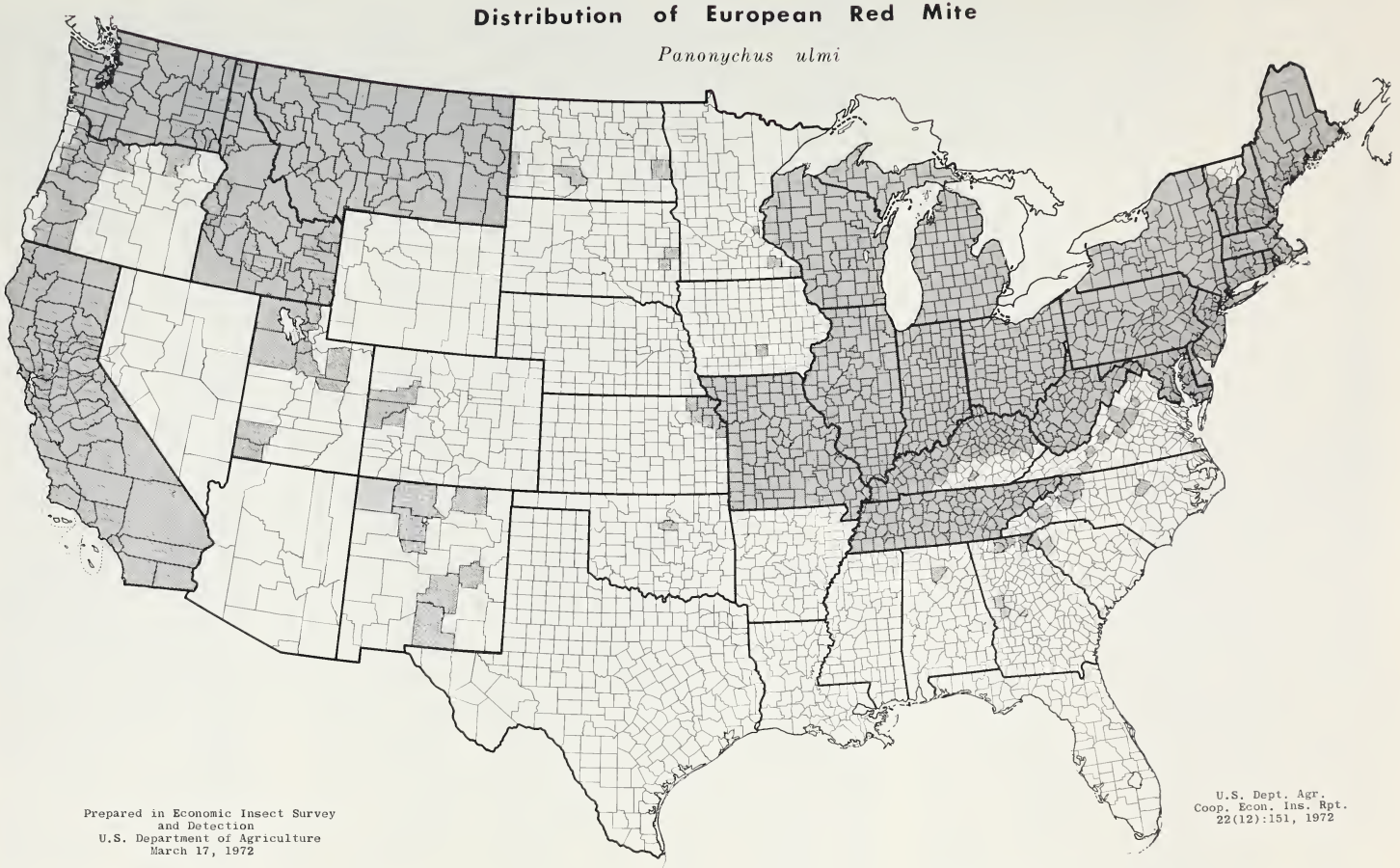
Larvae of a TORTRICID MOTH (Platynota flavedana) in VIRGINIA damaged 30-70 percent of the apples in 250 acres. In the Winchester area, 2-15 percent of the apples showed feeding damage in July and August.

PEACHTREE BORER (Sanninoidea exitiosa) and LESSER PEACHTREE BORER (Synanthedon pictipes) were the most destructive pests to peach, plum, and cherry trees in ALABAMA. Lesser peachtree borer damage in FLORIDA was the heaviest in orchards that had been poorly pruned.

EUROPEAN RED MITE (Panonychus ulmi) overwintering eggs began to hatch in central MAINE on May 17, about 7 days later than usual. First summer eggs were laid on June 3 and began to hatch on June 15. Damaging populations began to appear by mid-July and early August. Overwintering eggs in MASSACHUSETTS began hatching about May 14 in Hampshire and Hampden Counties. By May 25, an estimated 75-80 percent were hatched. By June 3, second-generation eggs were being deposited on apple foliage. By July 27, eggs averaged over

Distribution of European Red Mite

Panonychus ulmi



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4 per leaf in some poorly treated orchards. By September 28, heavy counts of overwintering eggs had been deposited on the spurs and calyx ends of some apples.

European red mite infestations were heavy on apple in Adams County, PENNSYLVANIA, by July 7. Lady beetles were feeding on mites in southern orchards. Eggs hatched in MARYLAND during the last week of May. Populations and damage remained light until August and increased to moderate levels. About a third of the apple growers experienced problems with light to moderate bronzing in their orchards. In VIRGINIA, European red mite caused severe injury on susceptible apple varieties; other varieties had significantly less damage. Adults began laying eggs in August and the egg carryover is heavy. Started slow in MICHIGAN following an unusually heavy mortality of overwintering eggs. In most instances, early season oil sprays and prebloom miticides kept them in check until mid-late July. Unseasonal temperature-humidity relationships encouraged population buildup versus normal decline through August, a chronic, if not acute, problem for many growers into early September.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) appeared in orchards on Western Slope of COLORADO about March 16. Eggs were noted by April 24 on apple and pear trees in Mesa County. Heavy buildup was noted by July 10. Overwintering forms were noted by late July. Damage was evident in those orchards where controls were not satisfactory.

PEAR PSYLLA (Psylla pyricola) eggs were found February 20 in OREGON. Prespray counts were as high as 8 per tap. Early season controls were effective. During mid-summer, populations reappeared but were generally suppressed by hot weather. Damage was about normal. Heavy buildup was noted in Douglas County in late July, and repeated controls were needed to regain control. In WASHINGTON, the first dormant oil sprays were applied March 12. The first egg hatch was noted in Yakima County the first of April. Adults were recovered April 29, when pears were at 90 percent bloom. There were some reports of poor control in some areas of Washington. There were heavy summer infestations with much damage and honeydew. The second generation egg hatch was reported June 24. Pear psylla was widespread on pears throughout northern CALIFORNIA, and controls were needed throughout the year. Populations in most pear orchards were very heavy in MICHIGAN. Adults emerged about April 9 and eggs were abundant about April 16. Nymphs were noted during the bloom period and sprays were not effective for this stage. Overlapping generations caused some problems by early summer.

GREEN PEACH APHID (Myzus persicae) eggs hatched on the Western Slope of COLORADO about March 16. Some leaf curl and colonies from stem mothers were reported in late April. Populations were abundant in unsprayed peach and plum orchards in Mesa County during early May. Migration was noted the first week in June.

SAN JOSE SCALE (Quadraspidiotus perniciosus) continued to be the most important scale affecting peach, apple, plum, and pear in central and north ALABAMA. In UTAH, this scale caused severe damage to trees and fruits in Box Elder County, and damage was less in Utah, Salt Lake, Weber, and Washington Counties.

TARNISHED PLANT BUG (Lygus lineolaris) adults in MASSACHUSETTS were feeding on pear buds in Worcester and Middlesex Counties, by April 22. Many commercial growers were reporting damage to peaches by July 14. In VIRGINIA, damage was light in 1971 because of earlier emergence than usual; consequently, most had died before the pink stage. This is the second year that damage declined.

Migrants of APPLE APHID (Aphis pomi) appeared in central MAINE on new terminal growth on June 14. Moderate populations had developed by July, and controls were applied. In some apple orchards several applications were needed. Populations were near the severe infestations of 1970.

PLUM CURCULIO (Conotrachelus nenuphar) adults made their first contribution to the late June drop of apples, plums and peaches on May 17, in MICHIGAN. Migration from woodlots and brush continued for nearly 6 weeks after bloom. Fruit of all host crops showed egg laying scars the week of May 24. Cool temperatures, supplemented with insufficient moisture, slowed and prolonged egg deposit through first cover. Plum curculio was the most serious pest to fruit of peaches, plums, and apples in ALABAMA.

APPLE MAGGOT (Rhagoletis pomonella) adults emerged June 22 in Van Buren County and June 26-29 in the vicinity of Grand Rapids, MICHIGAN. In the northern area, adults appeared July 3-5. Weather conditions produced a sporadic emergence until populations peaked August 6 to September 3 from south to north, respectively. Adults in MINNESOTA were first reported in mid-July. Emergence was general in the southern half of the State by the last of July. Populations appeared moderate, and there were no heavy infestations reported. In RHODE ISLAND, apple maggot adults were reported by July 15 and adult activity was very heavy in an unsprayed orchard on July 22. Adults were present throughout August and into September.

CHERRY FRUIT FLY (Rhagoletis cingulata) emergence in MICHIGAN began June 4 in Berrien County and June 18-20 for the Hart and Shelby area northward. Protective sprays at 10-day intervals were necessary to the end of harvest on cherries. Peak emergence was June 17 for the south and about July 5 farther north.

WESTERN CHERRY FRUIT FLY (Rhagoletis indifferens) first adults were trapped on June 6 in WASHINGTON, 30 days later than normal in Yakima Valley. Peak adult emergence was July 15, as indicated by sticky traps.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) larvae caused heavy damage to peaches in the Homestead area of FLORIDA.

PEARSLUG (Caliroa cerasi) damage in UTAH was unusually heavy in some Box Elder, Davis, and Salt Lake County cherry orchards. Damage to apples, pears, and susceptible ornamental shrubs varied from light to moderate locally, sometimes severe.

PECAN NUT CASEBEARER (Acrobasis caryae) moth emergence in TEXAS began on April 30 in Guadalupe and Maverick Counties. Nutlet injury was noted in Maverick, Gonzales, Guadalupe, Travis, and Bastrop Counties by May 7. Insecticide applications began on May 10-14 in southern areas. Control was completed in the Rolling Plains during late May. A survey west of the Pecos River detected the pecan nut casebearer in Terrell and Pecos Counties. Eggs were

first found on May 21 in south-central OKLAHOMA and on June 1 in the northeast area. Infestations were generally heavy in the northern areas and ranged light to heavy in the south. Pupation was noted late June. A second generation occurred in July with damage ranging up to 10 percent in some areas.

CODLING MOTH (Laspeyresia pomonella) was particularly serious in walnuts in CALIFORNIA due to error in scheduling proper controls. Bio-control eliminated the need for treatment of Chromaphis juglandicola (walnut aphid), and codling moth populations increased. NAVEL ORANGEWORM (Paramyelois transitella) was general in almonds in California and there was much buildup in walnuts due to the late harvest.

WALNUT CATERPILLAR (Datana integerrima) was heavier during 1971 than usual and caused complete defoliation of walnut in northwest ARKANSAS. Populations were heavy in southwest and south-central MISSOURI. Complete defoliation of walnuts was noted in about 10 counties in these areas.

PECAN WEEVIL (Curculio caryae) adults were taken in traps or on pecan nutlets in the eradication zone in Otero County, NEW MEXICO. Control measures were immediately applied. In OKLAHOMA, adults began to emerge in early August and continued through mid-September. Scattered moderate to heavy infestations were reported, but some areas were only lightly infested this year. Larvae were emerging from early maturing nuts in the north-central area by mid-September. Pecan weevil emergence began in early August in Lowndes, Newton, and Panola Counties, MISSISSIPPI. Emergence peaked in late August and early September. Heavy infestations were observed at this time in Lowndes, Newton, and Hinds Counties. Infestations were heavy in many orchards in north FLORIDA; damage was severe in parts of orchards.

WALNUT HUSK FLY (Rhagoletis completa) adults were trapped in most of the principal walnut-growing areas of western OREGON. First adults were trapped early in August and peaked during mid-August. Controls were applied to orchards in Douglas, Josephine, and Jackson Counties. A specimen was noted in a home planting of walnut at Thompson, Winnebago County, IOWA, for a new county record. Populations in UTAH were heavy in some Box Elder, Weber, Salt Lake, and Tooele County English and black walnuts.

PECAN PHYLLOXERA (Phylloxera devastatrix) was an important pest in southwest MISSISSIPPI, and control measures were used in some areas.

Aphids were heavy on pecans in south and central ALABAMA. The major species were Tinocallis caryaefoliae (black pecan aphid), Monellia costalis (blackmargined aphid), and Monelliopsis nigropunctata.

AN ERIOPHYID MITE (Aculus comatus) found on filberts in Benton County, OREGON . This was reported as a new North American record.

CITRUS

Highlights:

TEXAS CITRUS MITE populations came close to the record high established in Florida in 1965.

Populations of CALIFORNIA RED SCALE (Aonidiella aurantii) increased in many areas of CALIFORNIA.

BLACK SCALE (Saissetia oleae) remained very light in FLORIDA from January through May, and then increased rapidly and remained heavy for most of the summer; however, only scattered groves had important infestations. In November this scale peaked, producing the heaviest November populations in 20 years of record. At this time, 32 percent of the groves had economic infestations.

WHITEFLY (Dialeurodes spp.) infestations were generally below normal in FLORIDA the first third of the year but were heavy from June through summer. Further increases resulted in the highest October level in 20 years of record. At that time, 87 percent of the groves checked were infested, and 34 percent had economic infestations. November populations dropped out of the high range but still were high enough to result in the highest level for November in 20 years of record; 18 percent of the groves had economic infestations.

CITRUS THRIPS (Scirtothrips citri) controls were needed at prebloom and petalfall in Yuma County, ARIZONA, in mid-March and late April. In Maricopa County, growers generally treated in May. This species was a major pest in southern CALIFORNIA.

TEXAS CITRUS MITE (Eutetranychus banksi) population in FLORIDA was at normal low during the winter and spring but, by the end of June, approached the record high set in 1965. This mite reached the summer peak early in July and remained at a high level above normal until mid-July, 42 percent of the check groves had heavy infestations. By September, population rapidly decreased to a low level and remained so the rest of the year.

CITRUS RUST MITE (Phyllocoptruta oleivora) was the major pest problem throughout the citrus belt of FLORIDA. The population was above normal all season. At the end of July, 48 percent of the groves that had not been sprayed during the month harbored heavy infestations.

SMALL FRUITS

Infestations of GRAPE BERRY MOTH (Paralobesia viteana) and WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) were above normal in vineyards of Washington County, Utah. Western grapeleaf skeletonizer caused the heaviest damage in 20 years.

A LEAFHOPPER (Erythroneura comes) was abundant on wild grapes in PENNSYLVANIA. Population peaks occurred in early September with 240 adults per 25 sweeps. Some foliar damage was evident on Concord vineyards.

GRAPE PHYLLOXERA (Phylloxera vitifoliae) infestations were light (6-20 galls per leaf with 8-24 percent of the shoots infested on 4 cultivars). In Lancaster County, PENNSYLVANIA, a heavy infestation was noted with 80 percent of the shoots of one cultivar infested.

BLUEBERRY MAGGOT (Rhagoletis mendax) adult emergence in NORTH CAROLINA began the week of June 7 and peaked about June 21. Larvae appeared the week of June 14 and peaked on July 19. Three hundred larvae were collected from 50 quarts of randomly picked berries between June 14 and July 19.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) caused heavy damage to strawberries early in the season at Homestead, Dade County, FLORIDA. Fruit production stopped early in the season. Although light during fall in Manatee and Hillsborough Counties, populations during spring were heavy in these areas. This mite continues to be the major pest of strawberries in CALIFORNIA.

Adults of BLUEBERRY BUD MITE (Acalitus vaccinii) ranged up to 200+ per terminal bud with great variation among blueberry varieties in early April in NORTH CAROLINA. A survey in Pender, Bladen, and Duplin Counties of the most susceptible variety (Wolcott) revealed 43-75 percent of the fruit buds from the top shoots showing heavy infestations. This was the heaviest infestation in 6 years on the Wolcott variety.

ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) hatch began the last week of March in OKLAHOMA. Infestations were moderate to heavy in July and August. Pupation occurred the first week of September. In KENTUCKY, hatch occurred June 1-6. Damage was general statewide but heavier in the eastern counties, especially in Bell, Knott, Letcher, Perry, Knox, and Washington. Bagworm was the most destructive pest of junipers in the State. In TENNESSEE, larvae were feeding in the eastern area during early June and were in all areas by mid-June. The population was not so large as in 1970. Timely controls were effective; the absence of controls in many cases resulted in severe damage. Bagworm was the most destructive pest of coniferous shrubs throughout ALABAMA. Continuing to increase in VIRGINIA, populations were heavy in Pittsylvania, Orange, Culpeper, Nansemond, Richmond, Essex, and Tazewell Counties. Populations in MARYLAND were heavy in all counties by early June. Bagworm infested several varieties of evergreen trees and shrubs, as well as many roadside stands of black locust, sweet gum, and sycamore. This pest was the most common insect problem encountered in ornamental pest surveys this season.

Larvae of a PIERID BUTTERFLY (Phoebis sennae) were collected at Faunsdale in Marengo County, ALABAMA, October 11, feeding on Cassia alata. This was a new State record.

BRONZE BIRCH BORER (Agrilus anxius) damage was severe to natural stands, residential plantings, and nursery birch throughout lower MICHIGAN for the second successive year. Adult emergence in WISCONSIN started in late May in Dane County. Many limbs were dead in a few southeastern sites by July 16.

An ARMORED SCALE (Phenacaspis cockerelli) was found on magnolia trees in Charleston County, SOUTH CAROLINA, March 10, 1971. This is a new State record. Since then, it has been found on magnolia in Horry County.

OBSCURE SCALE (Melanaspis obscura) the most serious pest of ornamental oaks in MARYLAND, continued to cause economic damage to street plantings of oaks statewide.

A LECANODIASPIDID SCALE (Lecanodiaspis pruinosa) damaged honeylocust trees in NEBRASKA in several Lincoln, Lancaster County, parks in late July and August. This insect was reported as a new State record.

TULIP BULB APHID (Dysaphis tulipae) was found heavily infesting a shipment of tulip bulbs from Holland on December 14, 1970, in Davidson County. This was the first recorded find of D. tulipae in TENNESSEE. Continuing investigations revealed that this aphid was infesting bulb shipments from Holland in Shelby and Sullivan Counties.

A PIT SCALE (Cerococcus kalmiae) infested a rhododendron in Lancaster County on August 6 for a new county record for PENNSYLVANIA.

IVY APHID (Aphis hederae) was collected from English ivy at Salem, Marion County, OREGON, for a new State record.

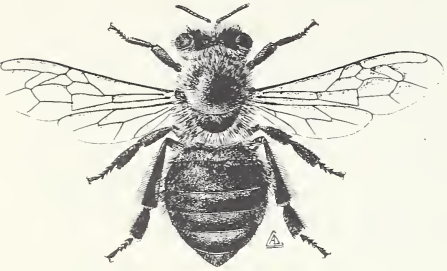
BOXWOOD LEAFMINER (Monarthropalpus buxi) damage in VIRGINIA was severe due to the heaviest overwintered populations in four years. Larval counts of 3-4 per leaf were common on American boxwood in Albemarle, Amelia, and Henrico Counties. Adults were emerging in Henrico County on May 5.

Weather of the week continued from page 144.

the Pacific Northwest, light snow in the northern Rocky Mountains, a few flurries in the lee of the Great Lakes and in the Northeast, and showers in the Deep South. No rain fell in Arizona and New Mexico and only widely scattered sprinkles fell in nearby States.

TEMPERATURE: Warm weather continued over the western half of the Nation. Temperatures reached the 50's and 60's, 20 degrees to 30 degrees above normal, over the northern Great Plains. The warm temperatures melted the snow rapidly in western North Dakota. The rapid snow melt, combined with ice jams on some streams, caused severe flooding of lowland fields, highways, and some urban areas. Rising waters on the Cannonball River forced the evacuation of 30 families from their homes in the western part of Mott, North Dakota, Monday afternoon. Severe flooding occurred Wednesday at Beulah, Hazen, and Zap, North Dakota, on the Knife River. At Beulah, the water was in 200 houses and some families moved out. Most of the Rocky Mountains and the northern and central Great Plains averaged 10 degrees to 25 degrees warmer than normal. The eastern half of the Nation averaged near or slightly above normal with only small day-to-day temperature changes. The East was a few degrees warmer than the previous week.

AN AFRICAN HONEY BEE (Apis mellifera adansonii) Latreille



Economic Importance: Apis m. adansonii can produce more honey in South America than the European honey bee, and is a more aggressive and productive worker during nectar flows than the other bees found in South America. Wherever this subspecies has been introducted in South America, it has progressively replaced the other honey bees present. This honey bee was introduced in 1956 for experimental purposes at Rio Claro, Brazil. Less than 2 dozen swarms escaped and from these swarms it has spread over an area in South America equal to the continental United States. Some authorities state that due to this species' aggressive behavior toward man and animals, (as reported from South America), bee keeping as we know it today in the United States could become obsolete soon after its introduction. They estimate that it could spread into the United States within 7-13 years.

Distribution: In Africa; south of the Sahara Desert, but is absent in the Cape Region. In South America; Argentina, Brazil, Bolivia, Paraguay, Uruguay, and Venezuela.

General Distribution of A. m. adansonii in South America

Behavior and Habits: The following are some of the behavioral characteristics of A. m. adansonii as reported from South America. The bee is more aggressive during foraging and works from very early in the morning until late in the afternoon. It is adaptable to working at high temperatures and at very low temperatures. Larger colonies are more aggressive than weaker colonies. It never starves in the hive; when stores are depleted, it moves on until food is found or it starves. Swarms in flight are more aggressive, and when united with another swarm they are reported to be dangerous. A. m. adansonii when attacking will follow the "victim" up to approximately 100 meters; whereas the Italian honey bee will only follow up to about 10 meters.

Some workers suggest the "aggressiveness" may be eliminated or reduced by breeding and selection, without losing the desirable characteristics.

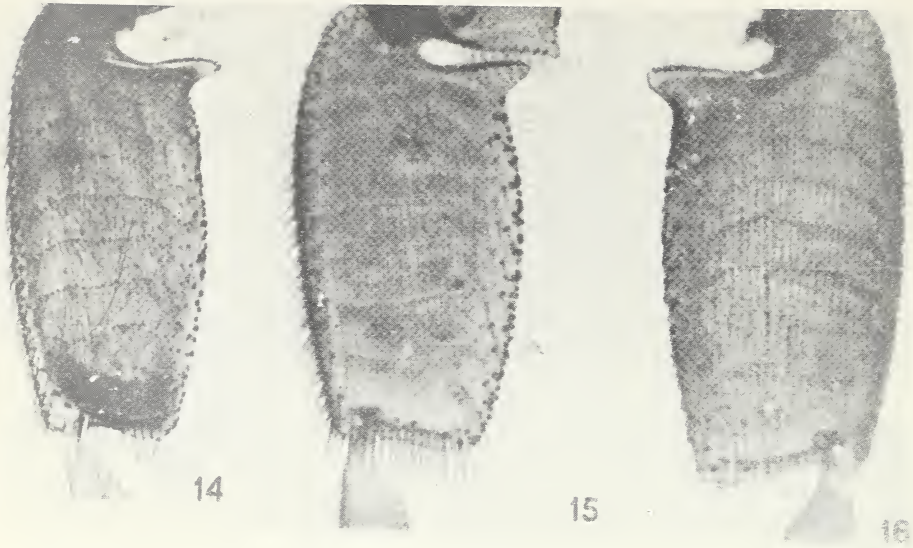
Distinguishing Characteristics: The African honey bee by casual observation is indistinguishable from the honey bee of the United States. Apis mellifera is found worldwide, and is represented in the Old World by numerous subspecies, several of which have been introduced into North America with the result that much interbreeding has occurred among them. The escaped bees of the woodlands in North America are largely A. mellifera mellifera (dark bee), while the beekeepers' bees are largely A. mellifera ligustica (Italian bee). A. mellifera caucasica (Caucasian bee) is also utilized by some beekeepers and crosses between the three are common.

The African honey bee found in Brazil is Apis mellifera adansonii. The following key gives the characteristics according to Tsing-Chao Maa, which differentiates the 3 subspecies of mellifera introduced into South America.

1. Antecosta and gradulus parallel or almost parallel; the former not enlarged in its middle part.....2
Antecosta and gradulus very convergent in their middle parts; the former particularly enlarged in this region, with the ensuing narrowing of the pregladular area.....remipes

2. Antecosta and gradulus of urosternite II slightly divergent. Wax plates of urosternites III to VI, large. Plate guiding the sting (urosternite VI) cut very low. Transverse series of tiny spines on the inner surface of the posterior basitarsi in a curved line. Interocellar and ocellorbital distances in the ratio 13.5:14.....mellifera

3. Antecosta and gradulus of urosternite II particularly parallel. Wax plates of urosternites III to VI, small. Plate guiding stinger (urosternite VI) not cut very low. Transverse series of tiny spines on the inner surface of the posterior basitarsi in a straight line. Interocellar and ocellorbital distances in the ratio of 13.5:11.....adansonii



Figures: 14, 15, 16 - Basitarsus posterior, female; Apis m. mellifera, A. m. adansonii, A. m. remipes.

Selected References: De Santis, L. and Cornejo, L. G. 1968 La Abeja Africana "Apis (Apis) adansonii" en America Del Sur. Rev. de la Facul. de Agron. 44:17-35. McGregor, S. E. 1970. Report on travel to the first Brazilian Apicultural Congress and visits to bee research laboratories and beekeeper operations in Brazil, Peru, and Mexico, with a special report appended on the African bee. 18 pp., June 1, mimeograph. Araujo, V. De P. 1971, The Central African Bee in South America, Bee World 52, No. 3 pp. 116-121. Muesebeck, C.F.W., Krombein, K., Townes, H.K., and others. 1951 Hymenoptera of America North of Mexico. USDA Monog. 2, pp. 1255.

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