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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

**PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE**

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

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.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

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Plant Protection Division
Agricultural Research Service
United States Department of Agriculture
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Hyattsville, Maryland 20782**

COOPERATIVE ECONOMIC INSECT REPORT**HIGHLIGHTS**Current Conditions

PEAR PSYLLA active in Jackson County, Oregon. (p. 47).

A POWDER-POST BEETLE heavy in dead pecan limbs in Lee County, Alabama. Buildup could threaten healthy trees. (p. 47).

COMMON CATTLE GRUB heavy in cattle in Lee County, Alabama. (p. 48).

Detection

Two LONCHAEID FLIES reported for first time in Hawaii. (p. 50).

For new county and island records see page 49.

Special Reports

EUROPEAN CORN BORER increased in 7 of 11 North Central States reporting in 1969. Decreases occurred in Illinois, Indiana, Iowa, and Ohio. Although lower than in 1968, populations in Illinois were the second highest since 1955. The 1969 populations in Indiana and Maryland were about half those of 1968. Overwintering populations in southwestern and west-central Missouri were again the highest on record for these districts. Counts were extremely high in southwestern Iowa, and increased in the Dakotas. (p. 51).

Distribution of Pea Leaf Weevil. Map. (p. 58).

Reports in this issue are for week ending January 23 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JANUARY 26

HIGHLIGHTS: Temperatures were above normal in the West and much colder than normal in the East. Heavy rains fell along and near the northern Pacific coast but precipitation was mostly light elsewhere.

PRECIPITATION: Moderate to heavy rain fell along the northern Pacific coast with snow in the nearby hills and mountains. Freezing rain near the Columbia River Gorge damaged powerlines and orchards. The northern Rocky Mountains received frequent moderate to heavy snow. Light to moderate rain fell intermittently in the Great Basin. No rain or only light sprinkles fell from central Utah and southern Colorado and southward to Mexico. Mostly light precipitation occurred over the Great Plains. This included frequent light flurries in the North and sprinkles in the South. Intermittent flurries occurred in the Great Lakes region and the Northeast, also in the central and southern Appalachians. Light sprinkles fell elsewhere in the Southeast. Weekly precipitation totals over the central and eastern part of the country were mostly less than 0.25 inch, in many areas less than 0.1 inch. The warm temperatures late in the week melted the snow in the western Great Plains. Local blowing dust occurred in western Nebraska on Sunday afternoon.

TEMPERATURE: Warm weather continued over the western half of the United States. Temperatures averaged above normal from the Pacific Ocean to the western edge of the Great Plains. A large area from southwestern Montana to northern Arizona and from Oregon to Colorado averaged 10° to 20° warmer than normal. In sharp contrast, bitter cold continued over the eastern half of the Nation. In general, it was the fifth consecutive cold week over the northern Great Plains, the fourth cold week in Louisiana, and the sixth week with below normal temperatures in the Northeast. The cold in the Central and East intensified early in the week. By Wednesday morning, Minnesota, Iowa, and nearby parts of adjoining States registered 20° to 40° below zero. Ottumwa, Iowa, registered 20° below zero Wednesday morning and by noon had warmed only to 10° below zero. At midnight Wednesday, Fargo, North Dakota, had warmed to 0° after 145 consecutive hours with below-zero temperatures. Minneapolis and St. Paul, Minnesota, suffered through 140 consecutive hours of subzero weather. On Thursday evening the temperature at Rockford, Illinois, climbed to 0° after remaining below zero for more than 120 hours. Fast warming occurred over the central and southern Great Plains in the latter half of the week. By Saturday afternoon, temperatures in eastern Colorado and western Kansas had climbed into the 70's. Last week was the coldest week of the winter in the Northeast in spite of the weekend warming. A large area from southern Wisconsin and Illinois to the northern and middle Atlantic coast averaged 15° to 20° colder than normal. (Summary supplied by Environmental Data Service, ESSA.)

SMALL GRAINS

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Heavy on some early planted wheat fields needing moisture in Grady County. (Okla. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

PEAR PSYLLA (Psylla pyricola) - OREGON - Active in blacklight trap January 7 at Medford, Jackson County. (Gentner).

A FALSE POWDER-POST BEETLE (Xylobiops basilaris) - ALABAMA - Adults and larvae heavy in 75 percent or more of dead pecan limbs under all pecan trees examined in Lee County. Very large acreage of trees in southwestern area damaged in late 1969 by Hurricane Camille needs close watch. Population explosion in dead trees and limbs could threaten weak or damaged trees expected to recover. A properly timed buildup could infest healthy trees. (McQueen).

CITRUS

Quarterly Citrus Insect and Mite Outlook in Florida - January through March - This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau 30-day Outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect and Disease Summary" usually released twice each month by this station.

CITRUS RUST MITE (Phyllocoptruta oleivora) expected to continue at moderate to high level through February, then decrease briefly in March. Will be heavy in about 25 percent of groves. TEXAS CITRUS MITE (Eutetranychus banksi) expected to increase slightly but will remain low. Will be heavy in about 5 percent of groves. CITRUS RED MITE (Panonychus citri) expected to gradually increase but not beyond normal low level for period. Will be heavy in about 8 percent of groves. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) will be light on inside leaves in about 3 percent of groves in February. Heavy infestations causing leaf drop may be expected in 1 percent of groves. GLOVER SCALE (Lepidosaphes gloverii) will be light to moderate in nearly all groves. Little change in population expected. PURPLE SCALE (L. beckii) and CHAFF SCALE (Parlatoria pergandii) will be light in majority of groves. Slight increase likely, but neither scale expected to become important through March. YELLOW SCALE (Aonidiella citrina) will remain at moderate level. May become important in scattered groves, especially young trees in March. An ARMORED SCALE (Unaspis citri) expected to be heavier than year ago. Will expand and intensify in March. APHIDS expected to appear on new growth in late February and increase rapidly through March to peak about mid-April. (W.A. Simanton).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Medium in commercial groves of Valencia oranges at Santa Paula, Ventura County. (Cal. Coop. Rpt.).

BEAN THRIPS (Caliothrips fasciatus) - CALIFORNIA - Adults medium on navel orange fruit at Rialton, San Bernardino County. (Cal. Coop. Rpt.).

ORNAMENTALS

A PTEROPHORID MOTH (Platyptilia pica crataea) - CALIFORNIA - Medium; damaged geranium nursery stock at Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

A SOFT SCALE (Ceroplastes ceriferus) - FLORIDA - Adults infested stems of 10 percent of 11,300 plants of Podocarpus sp. in nursery at Lake Monroe, Seminole County. (Van Pelt, Jan. 14).

FOREST AND SHADE TREES

A CLEARWING MOTH (Paranthrene robiniae) - CALIFORNIA - Larvae medium on cottonwoods at Solvang, Santa Barbara County. (Cal. Coop. Rpt.).

OBSCURE SCALE (Melanaspis obscura) - ALABAMA - Medium to heavy on many oaks along streets and walks at Auburn, Lee County. Many small to larger lower limbs dead; others weakened. (McQueen).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - No cases reported in U.S. January 18-24. Total of 30 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico January 11-17 as follows: Sonora 14, Chihuahua 5, Nuevo Leon 1, Tamaulipas 10. Total of 18 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 6,168,000; Mexico 79,712,000. (Anim. Health Div.).

COMMON CATTLE GRUB (Hypoderma lineatum) - ALABAMA - Grubs in backs of beef cattle in Lee County by December 15, 1969. First emergence December 29, 15-30 days early. Grubs, 1-25 per head, in 75+ percent of several hundred cattle in area. Probably higher than last 2 seasons. Will emerge for pupation until March and April. Preventive treatment for grub control ended; treatments to destroy emerging grubs underway. (Newman). OKLAHOMA - Moderate to heavy on Cherokee County cattle. Light in Mayes County. (Okla. Coop. Sur.).

CATTLE LICE - ALABAMA - Light on several thousand head in Lee and adjoining counties. Infestations lighter than usual. Anemic conditions expected to increase in February and March. (Newman). OKLAHOMA - Mainly Haematopinus euryesternus (short-nosed cattle louse) moderate to heavy on Cherokee County cattle. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - TENNESSEE - Collected from Carroll County January 10 for a new county record. (Mullett).

HOUSEHOLDS AND STRUCTURES

ORIENTAL COCKROACH (Blatta orientalis) - UTAH - Infested fourplex apartments at Salt Lake City, Salt Lake County. (Knowlton, Jan. 21).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - FLORIDA - Flights of reproductives in heated buildings on university campus at Gainesville, Alachua County. (Hetrick).

OLD-HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - Larvae damaged house in Appomattox County. (Allen, Jan. 15). This is a new county record. (PPD).

A WEEVIL (Sciaphilus asperatus) - WISCONSIN - Entered houses at Hayward, Sawyer County. Collected November 20, 1969. Determined by R.E. Warner. This is a new county record. (Wis. Ins. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - WISCONSIN - Adults medium in house at Oshkosh, Winnebago County, for a new county record. Collected by V. Peroutky July 22, 1969. Confirmed by A.B. Gurney. (Wis. Ins. Sur.).

STORED PRODUCTS

CONFUSED FLOUR BEETLE (Tribolium confusum) - CALIFORNIA - Heavy in wheat in warehouse at Willows, Glenn County. (Cal. Coop. Rpt.).

INDIAN-MEAL MOTH (Plodia interpunctella) - ALABAMA - Larvae and adults medium in shipment of small packets of sweet corn seed at Mobile, Mobile County. (Deakle).

POTATO TUBERWORM (Phthorimaea operculella) - MARYLAND - Heavy in several bushels of seed potatoes near Arnold, Anne Arundel County. (U. Md., Ent. Dept.).

MICHIGAN - Light in potatoes in Monroe County. (Janes, Jan. 26).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - Survey in Hidalgo, Dimmit, Maverick and Zavala Counties negative. (PPD South. Reg., Dec.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - NORTH CAROLINA - Mounds found outside of treated areas in Columbus County. SOUTH CAROLINA - Small extensions in Colleton and Georgetown Counties. GEORGIA - Extensions in Camden and McIntosh Counties. FLORIDA - Extensions for several miles along roadways in Flagler and Madison Counties. Second infested area found in Marion County. (PPD South. Reg., Dec.). Inspection on 100 of 12,000 acres of pasture at Geneva, Seminole County. Adults abundant but not heavy over area. (Van Pelt). LOUISIANA - One mound each found at 2 locations in appraisal survey of treated area in Caddo Parish. (PPD South. Reg., Dec.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - FLORIDA - Male caught in Steiner trap December 3 at Golden Beach, Dade County. Total of 1,557 Steiner traps set in 5-mile radius of find by December 17. (PPD South. Reg.). No additional specimens reported as of January 23. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Find of 1 larva in wild cotton boll in Dade County. (PPD South. Reg., Dec.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - GEORGIA - Infested new property in Decatur County. ALABAMA - Infested 4-acre property in Mobile County. MISSISSIPPI - Two new finds in Lawrence County. LOUISIANA - Most significant finds: 2 in Avoyelles Parish and 1 in Natchitoches Parish. (PPD South. Reg., Dec.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - LOUISIANA - Find of 5 adults at Minden, Webster County. NORTH CAROLINA - Small extensions in Bladen, Robeson, and Wake Counties. (PPD South. Reg., Dec.).

DETECTION

New State Records - LONCHAEID FLIES (Lonchaea spp.) HAWAII - L. polita on Hawaii and Oahu Islands; L. striatifrons on Lanai Island (p. 50).

New County and Island Records - BROWN RECLUSE SPIDER (Loxosceles reclusa) TENNESSEE - Carroll (p. 48). EUROPEAN EARWIG (Forficula auricularia) WISCONSIN - Winnebago (p. 48). LONCHAEID FLIES (Lonchaea spp.) HAWAII - L. polita on Maui; L. striatifrons on Maui, Molokai, Hawaii (p. 50). OLD-HOUSE BORER (Hylotrupes bajulus) VIRGINIA - Appomattox (p. 48). VAGRANT GRASSHOPPER (Schistocerca vaga) HAWAII - Maui (p. 50). A WEEVIL (Sciophilus asperatus) WISCONSIN - Sawyer (p. 48).

LIGHT TRAP COLLECTIONS

FLORIDA - 1/16-22, BL - Armyworm (Pseudaletia unipuncta) 4, black cutworm (Agrotis ipsilon) 2, granulate cutworm (Feltia subterranea) 4.

HAWAII INSECT REPORT

New State Records - Specimens of a LONCHAEID FLY (Lonchaea polita) were collected on Hawaii and Oahu by D.E. Hardy February 1953. Also collected on Maui. L. striatifrons was collected on Lanai by D.E. Hardy January 1953. Also collected on Maui, Molokai, and Hawaii. Both determined by D.E. Hardy; confirmed by G. Morge. Unknown whether they breed as predators or scavengers. (Hardy).

Corn - All stages of CORN PLANTHOPPER (Peregrinus maidis) heavy in whorls of young sweet corn and under leaf sheaths of mature corn in community garden at Mana, Kauai; light in 4 acres of seed corn seedlings in same area. (Sugawa).

General Vegetables - LEEK MOTH (Acrolepia assectella) damage heavy in small planting of green onions at Lihue, Kauai. (Sugawa). DIAMONDBACK MOTH (Plutella xylostella) larvae and adults heavy in 2 acres of cabbage at Kaaawa, Oahu. Damage light to heavy in about 75 percent of heads. Up to 16 larvae on some leaves. (Kawamura).

Fruits - COCONUT SCALE (Aspidiotus destructor) generally light in 21 stools of banana plants; moderate on older leaves of some plants at Pearl City, Oahu. Nymphs and adults of Lindorus lophanthae and Telsimia nitida (lady beetles) preying on scales. (Kawamura).

Beneficial Insects - SOUTH AFRICAN EMEX WEEVIL (Apion antiquum) adults moderate on foliage of emex seedlings in pasture at Pukalani, Maui. (Ah Sam, Miyahira).

Miscellaneous Insects and Pests - VAGRANT GRASSHOPPER (Schistocerca vaga) female caught in pasture at Makena, Maui, for a new island record. Previously found on Oahu, Kauai, Molokai, and Lanai. (Ah Sam, Miyahira). An ASSASSIN BUG (Oncocephalus pacificus) adult in light trap at Waipahu, Oahu, week of January 9. Few specimens found since discovery in September 1968. (Au). Adults of BLOW FLIES (Chrysomya megacephala and Phaenicia cuprina) numerous on flowers of 2 large gular trees (Sterculia urens) on hospital grounds at Honolulu, Oahu: Flying into hospital proper. (Masaki). GIANT AFRICAN SNAIL (Achatina fulica) adults medium in 5 acres of wild vegetation at Pukalani, Maui, elevation 1,200 feet, highest area of establishment on Maui. Activity still moderate at Wailuku and Kahului, Maui. (Ah Sam, Miyahira).

Status of the European Corn Borer in 1969^{1/}

Introduction: Surveys to determine the abundance of European corn borer (*Ostrinia nubilalis* (Hübner)) in the fall of 1969 were conducted by cooperating agencies in 15 States. All survey data, summaries, or records of field observations were processed by the Economic Insect Survey and Detection Staff in Hyattsville, Maryland. Personnel of Entomology Research Division, Agricultural Research Service, kindly reviewed the material after completion.

The 1969 European corn borer survey was conducted during late summer and early fall. The survey is designed to measure the fall populations of European corn borer larvae and is conducted during a favorable time to include a high percentage of late instars, wherever possible. Except for some minor differences in compiling data, the accepted survey methods were followed in all cases. The survey was continued on a district basis whenever possible in 1969. A district is usually a group of counties within a State, in most cases based on Crop Reporting Districts.

New Distribution: European corn borer was reported for the first time from two counties during 1969; however, these counties were in States already known to be infested. This was 8 fewer counties than reported the previous year. In 1968 one county each was reported from Alabama and Georgia, and 8 counties from South Carolina; 2 counties were reported in 1967 from North Dakota; 18 in 1966 from North Dakota and South Carolina; 11 in 1965 from South Carolina; 5 from 3 States in 1964; and 25 new counties in 1963 from 4 States.

The new distribution in 1969 was Dale County, Alabama, and Grundy County, Tennessee. In South Carolina, Beaufort County remains the only county not known to be infested.

Abundance: European corn borer fall populations increased in 7 of the 11 North Central States included in the survey. Decreases were recorded in Illinois, Indiana, Iowa, and Ohio. Although populations in Illinois were lower than in 1968, they were the second highest since 1955. The 1969 populations in Indiana were approximately half those of 1968. The 3 southernmost districts of that State had the largest number of borers per 100 plants each year, and showed the smallest decrease in population. The lowest number of larvae occurred in the 3 districts immediately to the north both years, and decreased in 1969 to one-fifth the 1968 level. The 1969 fall survey in Iowa showed the same trend as in 1968. Weather was unfavorable for the first brood, but conditions favored survival of the second brood. Populations were highest in western and southern portions of the State. Counts were extremely high, 607 per 100 plants, in southwest (District VII) Iowa. Overwintering populations in southwest (District VII) and west-central (District IV) Missouri were again the highest on record for these districts. The State average of 245 borers per 100 stalks was the highest since 1966. Overwintering populations increased over those of last year in North Dakota, and were double those of 1968 in South Dakota.

Although the State average for 1969 in Delaware decreased from a record high of 444 borers per 100 plants in 1968, it does reflect the very high borer density that occurred in several crops this season. The 1969 overwintering population in Maryland was approximately half that of 1968. European corn borer infestations in Arkansas increased over those of the previous year again in 1969, and were heavier in the northeast area of the State than in other areas surveyed in 1968 and 1969.

^{1/} Survey data provided by State agricultural agencies. Data compiled and summarized by Economic Insect Survey and Detection Staff, Plant Protection Division, Agricultural Research Service, United States Department of Agriculture.

Table 1. Summary by States of European Corn Borer Abundance in Corn, Fall of 1969, Compared with Data for 1968

States	1968				1969				Comparable Districts or Counties			
	No. of Districts : Surveyed	Average No. of Borer Per 100 Plants	No. of Counties : Surveyed	No. of Districts : Surveyed	Average No. of Borer Per 100 Plants	No. of Counties : Surveyed	No. of Districts : Surveyed	No. of Counties : Surveyed	Average No. of Borer Per 100 Plants	No. of Counties : Surveyed	No. of Districts : Surveyed	No. of Counties : Surveyed
<u>Eastern</u>												
Delaware	1	444	3	1	357	3	1	444	357	3	1	444
Maryland	3	296	13	3	154	16	3	296	154	16	3	296
Total	4		16	4		19						
Average <u>1/</u>								370				252
<u>North Central</u>												
Illinois	7	199	39	7	142	39	7	199	142	39	7	199
Indiana	12	82	92	12	38	92	12	82	38	92	12	82
Iowa	12	171	99	12	163	99	12	171	163	99	12	171
Kansas	3	98	28	3	265	26	3	98	265	26	3	98
Minnesota	7	42	34	7	69	28	7	42	69	28	7	42
Missouri	7	154	39	7	245	38	7	154	245	38	7	154
Nebraska	5	76	26	5	147	26	5	76	147	26	5	76
North Dakota	1	112	5	1	177	5	1	112	177	5	1	112
Ohio <u>2/</u>	5	153	33	5	111	33	5	153	111	33	5	153
South Dakota	6	71	35	6	137	35	6	71	137	35	6	71
Wisconsin	9	40	52	9	46	52	9	40	46	52	9	40
Total	74		482	74		473						
Average <u>1/</u>								108				141
<u>Southern</u>												
Arkansas	3	26	11	3	48	11	3	26	48	11	3	26
<u>Other</u>												
Michigan	1	50	40	1	62	41	1	50	62	41	1	50

1/ Weighted average based on districts surveyed.
 2/ Based on districts surveyed.

Table 2 - European Corn Borer Abundance in Corn,
Fall of 1969, Compared with Data for 1968

State (Districts or Counties)	Average Number: of Borers Per 100 Plants		State (Districts or Counties)	Average Number :of Borers Per : 100 Plants	
	1968	1969:		:1968	1969
<u>Arkansas</u> (Ark. Ins. Sur.)			<u>Iowa</u> (State Dept. Agr.; Ext. Ser.; Ent. Dept., Iowa State Univ; ENT, ARS, USDA)		
Northwest	15	14	District I	59	180
North Central	6	13	District II	63	36
Northeast	<u>37</u>	<u>69</u>	District III	83	25
Average	26 <u>1/</u>	48 <u>1/</u>	District IV	163	290
<u>Delaware</u> (Agr. Expt. Sta.)			District V	100	100
New Castle	292	276	District VI	144	32
Kent	512	329	District VII	249	607
Sussex	<u>528</u>	<u>467</u>	District VIII	236	48
Average	444	357	District IX	241	63
<u>Illinois</u> (Natural History Survey, Ext. Ser.)			District X	335	290
Northwest	192	139	District XI	232	114
Northeast	148	75	District XII	<u>148</u>	<u>176</u>
West	233	235	Average	171	163
Central	187	84	<u>Kansas</u> (Ins. Sur.)		
East	246	76	Northeast	152	323
West-southwest	216	230	North Central	43	143
East-southeast	<u>170</u>	<u>153</u>	East Central	<u>101</u>	<u>329</u>
Average	199	142	Average	98	265
(198) <u>2/</u>	(143) <u>2/</u>	<u>Maryland</u> (Agr. Ext. Ser.; Ins. Sur.)			
<u>Indiana</u> (Ext. Ser., Expt. Sta.)			Eastern Shore	339	183
North-northwest	121	33	Southern area	205	99
North-northcentral	92	44	Western and Central areas	<u>344</u>	<u>180</u>
North-northeast	84	35	Average	296	154
Northwest	82	49	(166) <u>3/</u>		
North Central	71	59	<u>Michigan</u> (Ins. Sur.)		
Northeast	127	39	Surveyed counties	50	62
Southwest	24	5			
South Central	26	5			
Southeast	59	5			
South-southwest	93	74			
South-southcentral	176	88			
South-southeast	<u>31</u>	<u>24</u>			
Average	82	38			
			2/ Average based on 39 comparable counties surveyed in 1968 and 1969, rather than districts.		
			3/ Average based on averages for 16 counties surveyed in 1969, rather than district averages.		

1/ Average based on field averages rather than district averages. Indiana field averages not available for 1968.

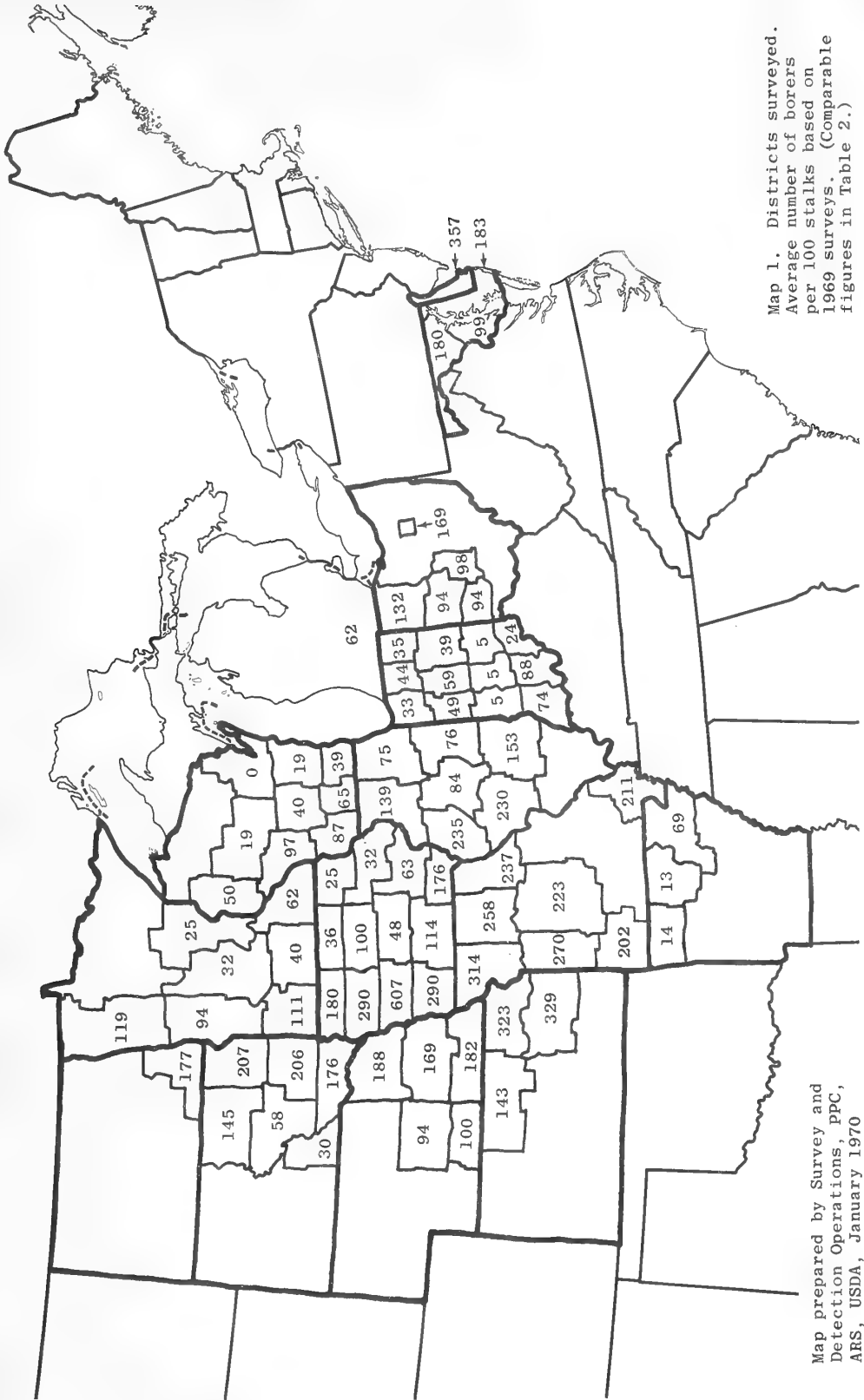
2/ Average based on 39 comparable counties surveyed in 1968 and 1969, rather than districts.
3/ Average based on averages for 16 counties surveyed in 1969, rather than district averages.

Table 2 - (Continued)

State (Districts or Counties)	Average Number: of Borers Per :		State (Districts or Counties)	Average Number of Borers Per	
	100 Plants :			100 Plants	
	1968	1969:		1968	1969
<u>Minnesota</u> (State Dept. Agr.)			<u>South Dakota</u> (Agr. Expt. Sta., Ext. Ser.)		
Southwest	35	111	North Central	64	145
South Central	38	40	Northeast	134	207
Southeast	32	62	Central	28	58
West Central	58	94	East Central	134	206
Central	22	32	Southeast	62	176
East Central	11	25	South Central	<u>1</u>	<u>30</u>
Northwest	<u>99</u>	<u>119</u>	Average	71	137
Average	42	69	<u>Wisconsin</u> (State Dept. Agr.)		
<u>Missouri</u> (Ext. Ser., Ins. Sur.)			Northwest	17	50
District I	180	314	North Central	19	19
District II	131	258	West Central	18	97
District III	107	237	Central	61	40
District IV	237	270	Southwest	47	87
District V	118	223	South Central	73	65
District VII	113	202	Southeast	49	39
District IX	<u>192</u>	<u>211</u>	East Central	25	19
Average	154	245	Northeast	<u>48</u>	<u>0</u>
<u>Nebraska</u> (Agr. Expt. Sta.; Ext. Ser., Ins. Sur.)			Average	40	46
Northeast	65	188			
East	59	169			
Southeast	148	182			
Central	46	94			
South	<u>64</u>	<u>100</u>			
Average	76	147			
<u>North Dakota</u> (State Dept. Agr.)					
Southeast	112	177			
<u>Ohio</u> (Ext. Ser.; ARS, USDA)					
Northwest	201	132			
West Central	142	94			
Central	82	98			
Southwest	137	94			
Northeast	<u>124</u>	<u>169</u>			
Average	137	117			
	(153) <u>4/</u>	(111) <u>4/</u>			

4/ Averages calculated from county averages, not district averages.

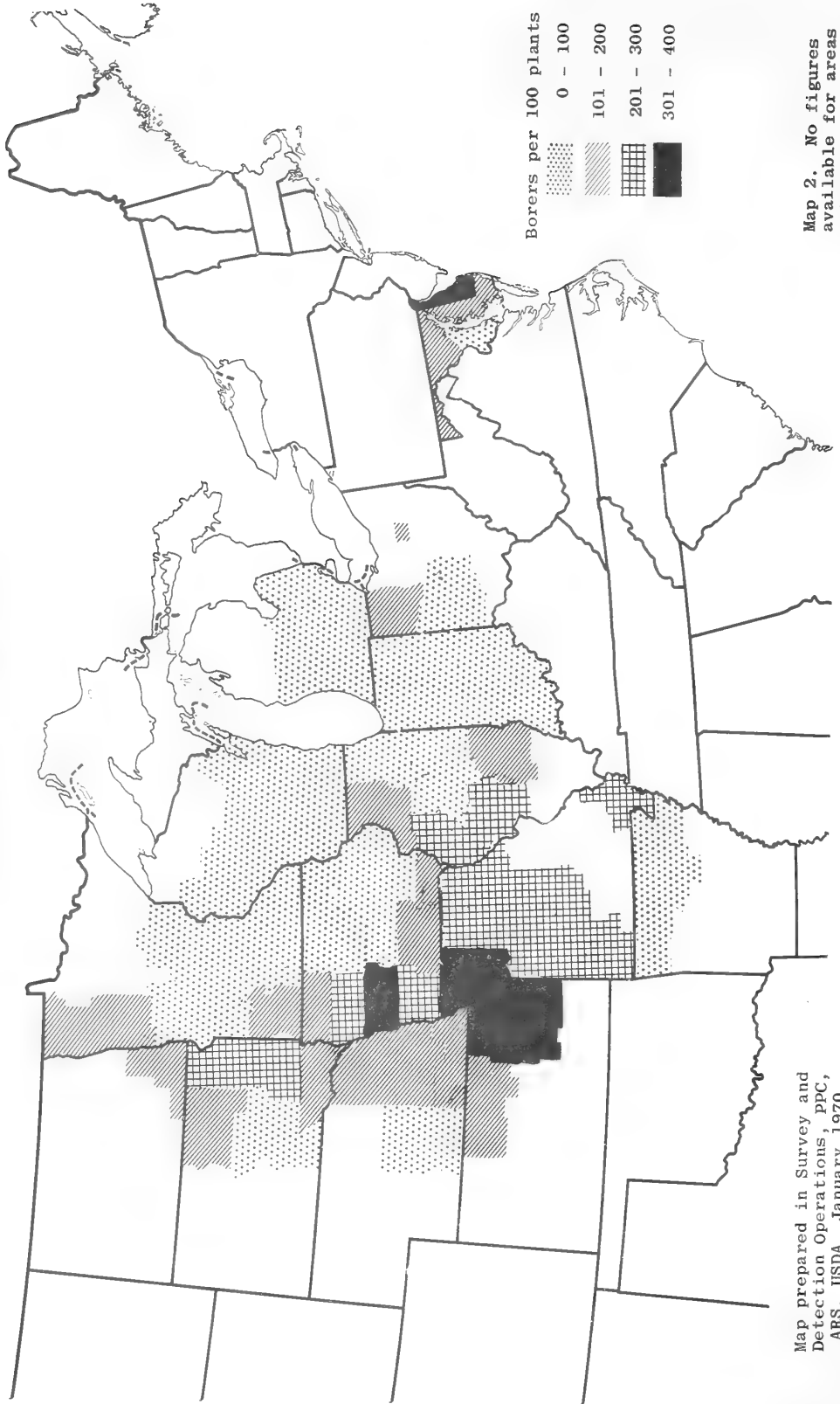
EUROPEAN CORN BORER ABUNDANCE FALL 1969



Map prepared by Survey and
Detection Operations, PPC,
ARS, USDA, January 1970

EUROPEAN CORN BORER ABUNDANCE

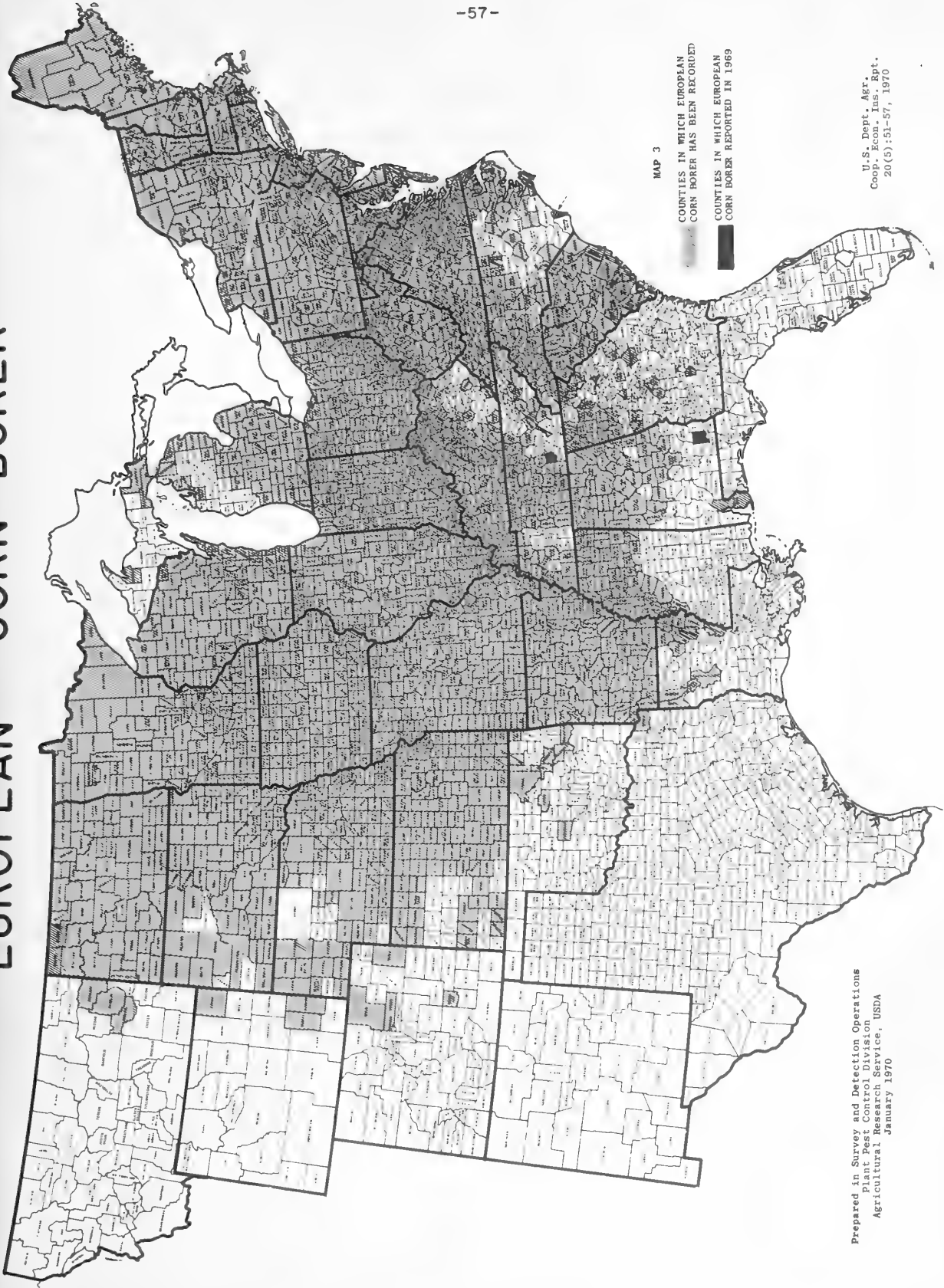
FALL 1969



Map prepared in Survey and Detection Operations, ppC, ARS, USDA, January 1970

Map 2. No figures available for areas not shaded.

EUROPEAN CORN BORER



MAP 3

COUNTIES IN WHICH EUROPEAN
CORN BORER HAS BEEN RECORDED

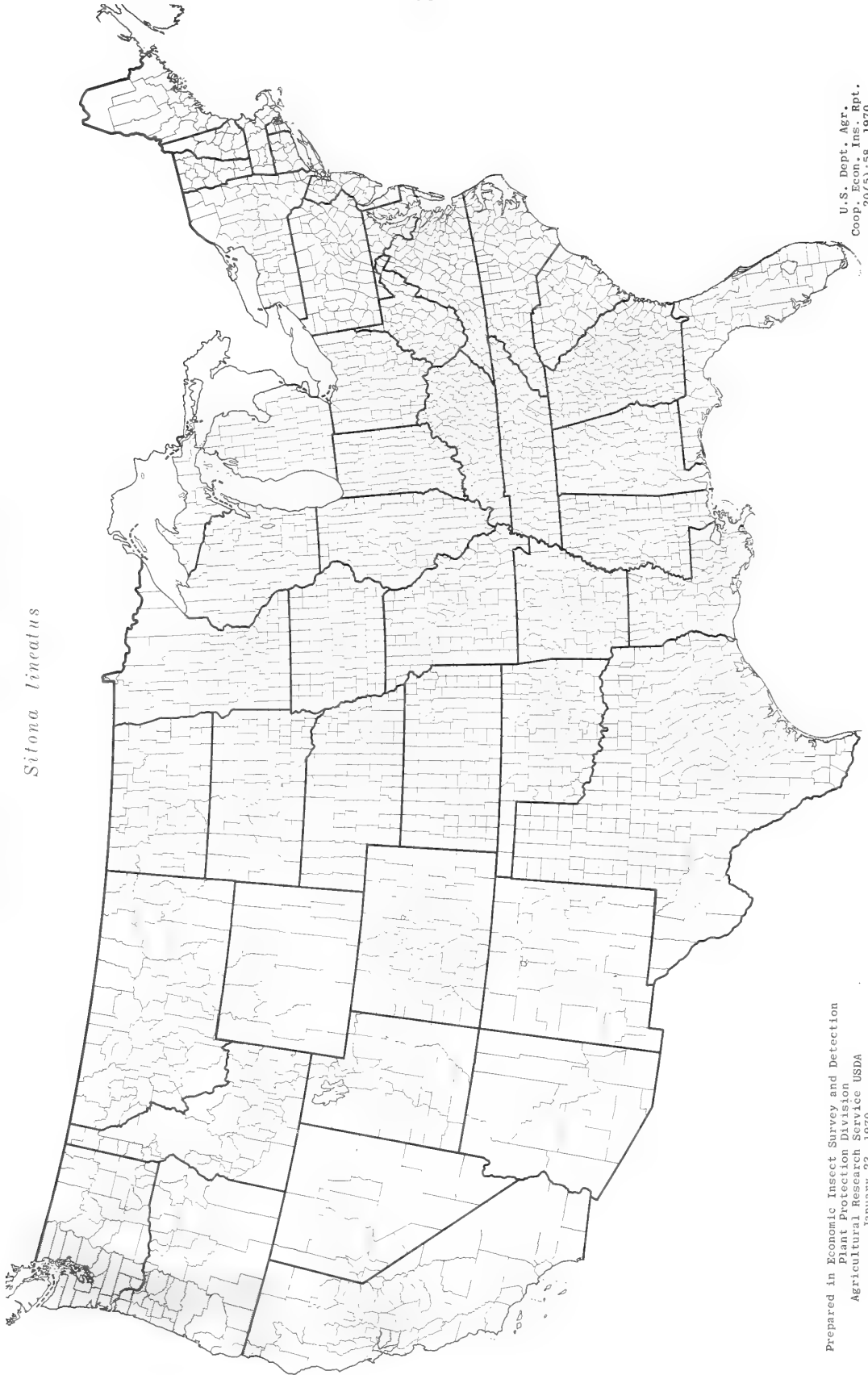
COUNTIES IN WHICH EUROPEAN
CORN BORER REPORTED IN 1969

Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
January 1970

U. S. Dept. Agr.
Coop. Econ. Ins. Rpt.
20(5):51-57, 1970

Distribution of Pea Leaf Weevil

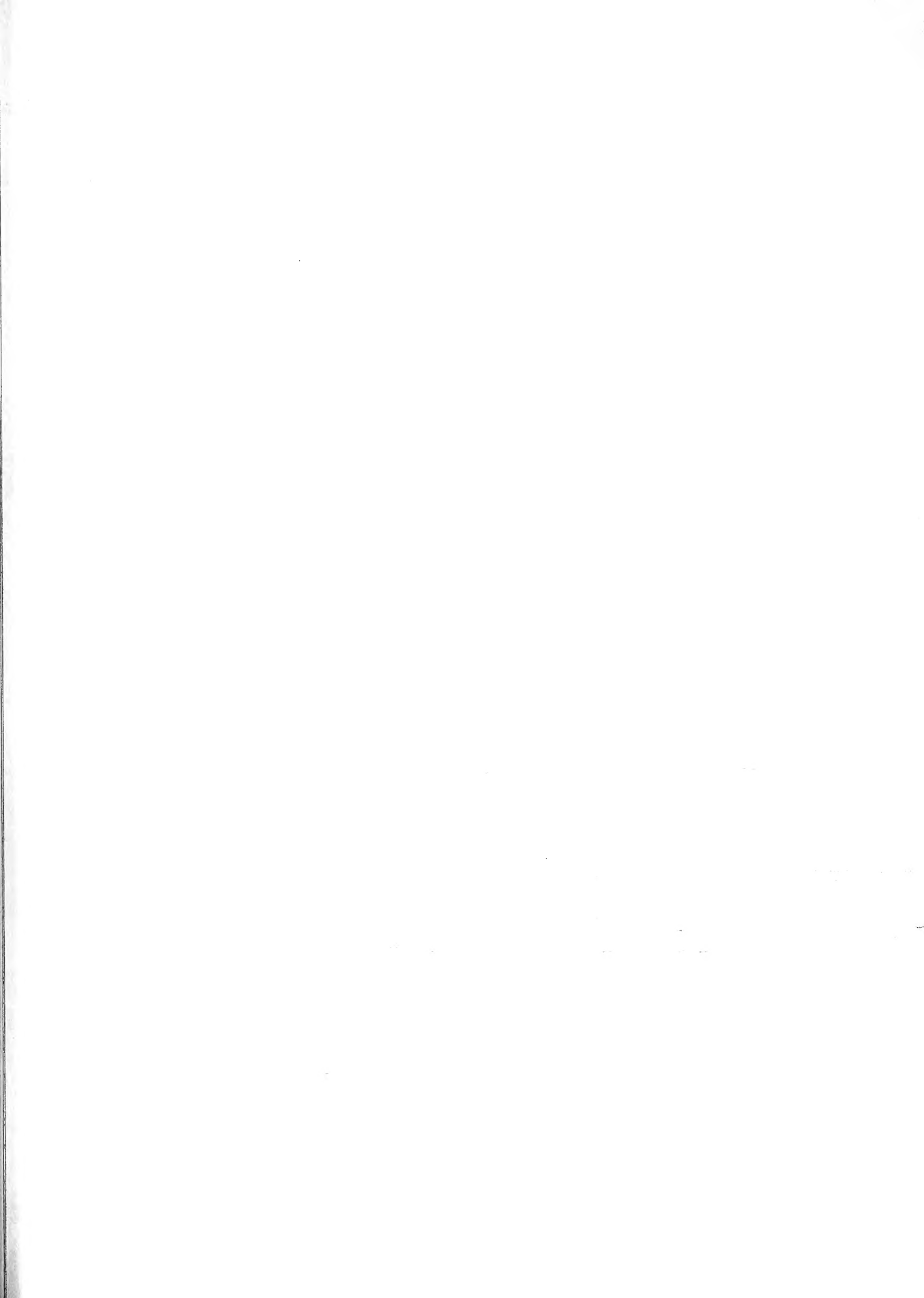
Sitona lineatus



Prepared in Economic Insect Survey and Detection
Plant Protection Division
Agricultural Research Service USDA
January 23, 1970

U. S. Dept. Agr.
Coop. Econ. Ins. Rpt.
20(5):58, 1970



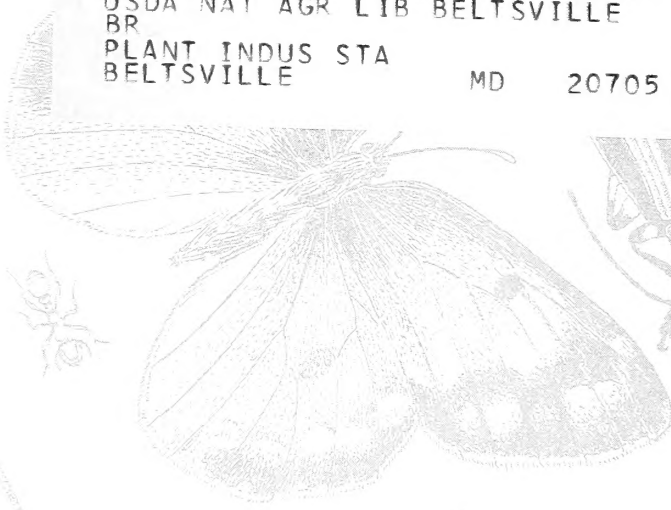


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