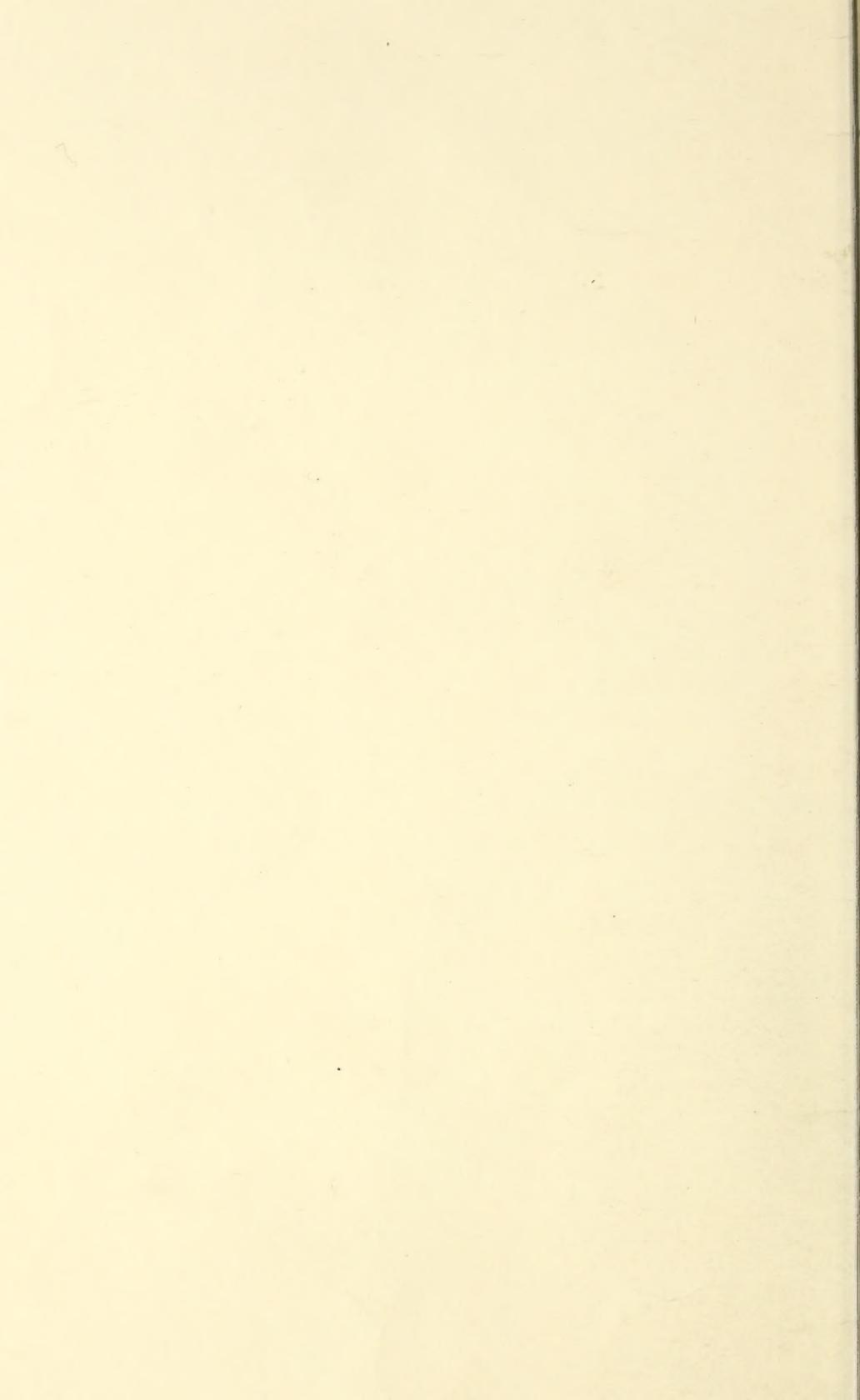


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UNITED STATES
DEPARTMENT OF AGRICULTURE
DEPARTMENT CIRCULAR 266

Washington, D. C.

1923

DISPERSION OF THE BOLL
WEEVIL IN 1922.

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The boll weevil has now spread to the point where determination of its annual dispersion in many districts is largely a question of finding the last cotton fields. The principal features of the weevil movement in 1922 were the loss of territory in the western portion of the line through Texas and western Oklahoma, and the gain in the eastern territory, particularly in North Carolina. The loss in the west was due to a combination of factors, but very largely to climatic conditions, which were exceedingly unfavorable for the multiplication of the weevil. In much of this territory it was exceedingly dry throughout the summer of 1922, and weevils thus became rather scarce, and in some districts were apparently practically eradicated. It is probable that for some years to come at least there will be more or less of this shifting back and forth in these particular districts, with a westward movement of the weevil following wet summers and a recession following drought.

In examining the line marking the limit of weevil dispersion in 1922 (Fig. 1), we find that from the point where it turns eastward in Major County, Okla., it follows the limit of cotton cultivation across northern Oklahoma, Arkansas, Missouri, and Kentucky. In Tennessee the limit of cultivation is reached in every instance, except for some little territory around Rutherford County. All fields in Georgia and South Carolina were infested, even outlying small patches planted at a considerable distance up in the mountains. In North Carolina the limit of cotton cultivation is reached except for Currituck County, which is the extreme northeastern county of the State. In addition the line bulges across the North Carolina boundary at one point to include a small amount of territory in Virginia. In other words, the weevil has now reached practically the

limit of its regular movement forward and the only important changes which can be expected in the future will be movements such as have been mentioned in the western territory, and also shifts northward and southward along the northern line brought about by extremes of temperature from year to year.

In Texas the line extends from western Valverde County to Mertzon in Irion County. It then runs northwest through the western part of Sterling County, passing through the northeast corner of Glasscock County east of Konohassett. From here it proceeds northeast, just touching the southeast corner of Howard County, across Mitchell and Nolan Counties, passing through the northwest corner of Taylor County just west of Merkel. It then passes northeastward through the middle of Jones County just east of Stamford. From here the line continues northeast, passing through the eastern part of Haskell County, just touching the southeast corner of Knox County, then into Baylor County, passing just west of Seymour. From this place the line runs north, passing just west of Vernon in Wilbarger County, and leaves the State north of this place.

In Oklahoma the line enters the State in Tillman County at the extreme southeastern corner of Jackson County and runs slightly northeastward through Tillman County, passes into Kiowa County, just touching the eastern boundary line of Jackson County. It then passes 2 miles southwest of Vickers and continues to a point 10 miles east of Hobart in Kiowa County. Turning northward it passes 1 mile southeast of Bessie in Washita County and onward to a point 12 miles north of Clinton in Custer County. From here it proceeds northeastward across southeast Dewey County to Longdale in Blaine County and continues to a point 7 miles north of Isabella in Major County. From here the line runs southeastward, passing through the southwest corner of Garfield County to Hennessey in Kingfisher County, then turns northeastward, passing across southeast Garfield County to a point 5 miles north of Perry in Noble County, and continues across Noble County, passing through northern Pawnee County to Nelagoney in Osage County. Bending eastward, the line passes through Washington and Nowata Counties to Vinita in Craig County and continues to Cleora in Delaware County. From Cleora the line turns southeastward to a point 6 miles west of Flint in Delaware County and continues southeastward into Arkansas.

In Arkansas the line enters the State at Cincinnati in Washington County and goes east to Fayetteville, continuing due northeast through the north end of Madison County and the southeast corner of Carroll County, through Boone County and through Oakland in Marion County and Prestonia in Baxter County.

In Missouri the line enters the State at Bakersfield in the southeast corner of Ozark County and continues northeast through Howell County to a point 4 miles south of Woodside in Oregon County. The line then turns eastward, running through the northern part of Ripley County to Poplar Bluff in Butler County. From Poplar Bluff the line again turns northeast, running to a point 4 miles north of Leora in Stoddard County. Here the line turns southeast, entering Mississippi County at the extreme northeast corner of New Madrid County, and then runs to East Prairie in Mississippi County, at which point it joins the 1921 line and continues to the Mississippi River at Belmont.

In Kentucky the line enters the State at Columbus in Hickman County and then runs southeast, crossing the extreme southeast corner of Graves County into Tennessee.

In Tennessee the line enters the State at Dukedon in northern Weakley County, continuing due east along the border and entering Henry County in the extreme northwest corner. From there it goes southeastward, passing

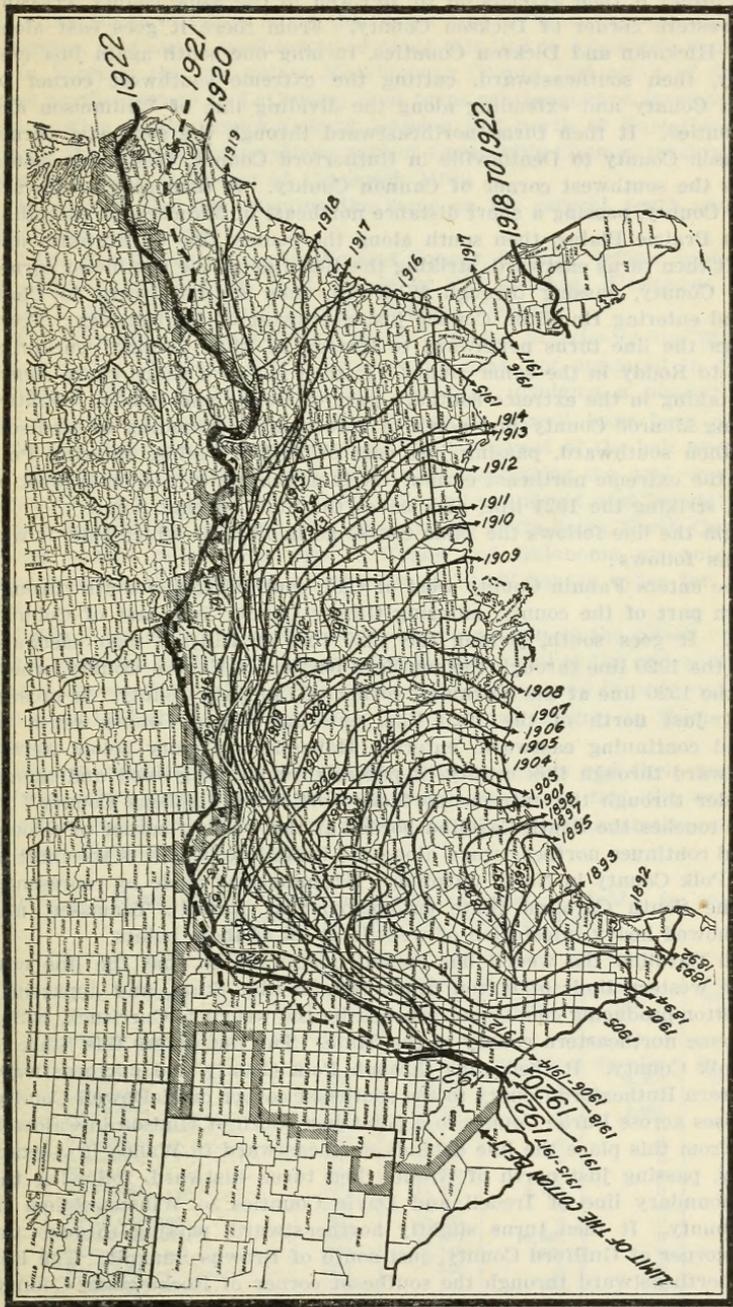


FIG. 1.—Map showing dispersion of the cotton boll weevil in the United States from 1892 to 1922.

NOTE.—The outer limit of the Cotton Belt advances or recedes slightly from year to year, and in the map is not absolutely accurate for 1922, as shown by the fact that in a few places the boll-weevil line is a little in advance of the indicated limit of cotton culture.

through McClain in Henry County and Big Sandy in Benton County; continuing southeastward to the Tennessee River and entering Humphreys County just north of Phifer; it then extends on to McEwen in the same county, crossing the southwestern corner of Dickson County. From there it goes east along the line of Hickman and Dickson Counties, turning due south again just east of Overbey, then southeastward, cutting the extreme southwest corner of Williamson County and extending along the dividing line of Williamson and Maury Counties. It then turns northeastward through the southeast corner of Williamson County to Dentonville in Rutherford County, then turns southeast across the southwest corner of Cannon County. It then goes southward into Coffee County, passing a short distance northeast of Manchester, extending on through Prairie Plains, then south along the county line of Franklin and Grundy. It then turns eastward, striking the 1921 line in the northwest corner of Marion County, passing through Whitwell, then southeastward to Chattanooga and entering Hamilton County just northwest of Chattanooga. From Chattanooga the line turns northward to Dayton in Rhea County, continuing northward to Roddy in the same county. It then makes a sharp curve southeastward, taking in the extreme southern part of Roane and Loudon Counties and entering Monroe County just north of Sweetwater, extending to Madisonville and then southward, passing just east of Tellico Plains, entering Polk County in the extreme northeast corner. It then continues to 4 miles west of Copperhill, striking the 1921 line, and leaves the State at that point.

In Georgia the line follows the same course as in 1921, at which time it was described as follows:

"The line enters Fannin County west of Cad, continuing due south through the western part of the county, entering Gilmer County just east of Cohutta Mountains. It goes south, joining the 1920 line at Ellijay, then eastward just above the 1920 line through the southern portion of Fannin County, where it rejoins the 1920 line at the northwest corner of Lumpkin County. It crosses the county just north of the 1920 line, entering White County south of Church and continuing eastward, entering Habersham County below Aerial. Going eastward through this county, it passes through Hollywood and thence to the border through the extreme northern portion of Stephens County."

The line touches the South Carolina border at the western corner of Oconee County and continues northeastward along the State line, which is the limit of cotton, to Polk County in North Carolina. Examinations made by representatives of the South Carolina State entomologist at Russell, Tamasee, and Jocassee showed heavy infestation of weevils at all of these points.

In North Carolina the weevil has spread northward so that the line now follows the western limit of cotton production in that State, and apparently the only cotton-producing county not reached by the weevil is Currituck, which is the extreme northeastern county of the State. The line enters this State in western Polk County. It then runs through Polk County and northeastward across western Rutherford County to the southeast corner of McDowell County. It then passes across Burke County to a point just south of Hudson in Caldwell County. From this place the line extends northeastward to Wahoo in Alexander County, passing just north of Grade, then turns eastward, following the northern boundary line of Iredell and Davie Counties to Winston-Salem in Forsyth County. It then turns slightly northeastward, passing through the northwest corner of Guilford County, just south of Browns Summit. The line continues northeastward through the southeast corner of Rockingham County, curving northward through Caswell County, passing just north of Eastland, and striking the State line north of Blanch. The line then turns eastward and

follows the Virginia-North Carolina boundary until it passes into Virginia just south of Soudan, Va. It again returns to the North Carolina State line just southeast of Hitchcock Mills, Va., and continues eastward along this line, again entering North Carolina along the border line between Camden and Currituck Counties, continuing southeastward along this line to Albemarle Sound.

In Virginia the line enters Mecklenburg County just south of Soudan, and goes northeastward to LaCrosse; then turns southeastward through the southern portion of Brunswick County, passing just north of Valentines, and continues through the southwestern part of Greensville County, reaching the State line at a point southeast of Hitchcock Mills.

In Florida the line remains the same as for several years and has been described as follows:

"The line passes Ozona in Pinellas County, Tampa, Seffner, and Plant City in Hillsborough County, Fort Meade in Polk County, Kissimmee in Osceola County, and Indian River City in Brevard County."

The situation in the Western States remains practically the same as was reported for the year 1921. The weevils have not appeared in the various irrigated plantings, and the control measures involving a noncotton zone in Arizona for the prevention of the *Thurberia* weevil have been continued.

Table 1 has been prepared to show the movement of the boll weevil in 1922 by States, expressed in square miles, and eliminating the arid western areas. From this it will be noted that 22,386 square miles of new territory were invaded in 1922, the greatest gain for a single State being North Carolina with 16,363 square miles. The loss in Texas and Oklahoma amounted to 8,944 square miles, thus leaving a net gain of 13,442 square miles for the Cotton Belt.

Table 2 has been prepared to show the proportion of the cotton crop of each State produced in the area not infested by the weevil at the end of 1922. From this it is seen that only 4.01 per cent of the cotton crop is produced outside of the weevil-infested territory. This is, of course, largely in Texas and Oklahoma.

We are indebted to the various State entomologists and their assistants for help in determining the line in the different States; in fact, the work in South Carolina and North Carolina was done entirely by representatives of the State entomologists of those States.

TABLE 1.—Total area, outside of irrigated western fields, in square miles, infested by the boll weevil in 1922.

State.	Year first infested.	Area infested in 1921.	Gain in 1922.	Loss in 1922.	Area infested in 1922.
		<i>Sq. miles.</i>	<i>Sq. miles.</i>	<i>Sq. miles.</i>	<i>Sq. miles.</i>
Texas.....	1892	192,385	0	5,850	186,535
Louisiana.....	1903	40,800	0	0	40,800
Oklahoma.....	1906	50,681	0	3,094	47,587
Arkansas.....	1906	52,173	0	0	52,173
Mississippi.....	1907	46,340	0	0	46,340
Alabama.....	1910	51,300	0	0	51,300
Florida.....	1911	35,000	0	0	35,000
Tennessee.....	1914	17,498	4,725	0	22,223
Georgia.....	1915	58,633	0	0	58,633
South Carolina.....	1917	30,495	0	0	30,495
North Carolina.....	1919	21,920	16,363	0	38,283
Missouri.....	1921	3,188	906	0	4,094
Kentucky.....	1921	358	0	0	358
Virginia.....	1922	0	392	0	392
Total.....		600,771	22,386	8,944	614,213

TABLE 2.—Proportion of cotton crop produced by States in area of the Cotton Belt now free from the boll weevil.

State.	Average cotton production for 10-year period 1909-1918, inclusive.		
	Average annual bales per State.	Crop produced in area now uninfested (1922).	
		Average annual bales.	Percentage of total crop of State.
Texas.....	3,602,105	302,573	8.40
Louisiana.....	416,372	0	0
Florida.....	54,561	0	0
Arkansas.....	926,618	0	0
Oklahoma.....	861,304	168,462	19.56
Tennessee.....	332,391	5,607	1.69
Mississippi.....	1,104,950	0	0
Alabama.....	1,139,702	0	0
Georgia.....	2,088,695	0	0
South Carolina.....	1,287,845	0	0
North Carolina.....	784,125	959	.12
Missouri.....	63,982	0	0
Virginia.....	21,450	19,946	92.99
All others.....	12,018	12,018	100.00
Total.....	12,696,118	509,565
Weighted average for country.....	4.01

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