

551.5 : 633.51

SECTION II.—GENERAL METEOROLOGY.

RELATION OF WEATHER TO THE AMOUNT OF COTTON GINNED DURING CERTAIN PERIODS.

By JOSEPH BURTON KINGER, Assistant.

[Dated: Weather Bureau, Washington, Jan. 25, 1917.]

The progress of the cotton harvest is probably watched more closely than that of any other crop grown in the country, owing to the fact that the Bureau of the Census, Department of Commerce, issues from time to time during the harvest season reports of cotton ginned during certain periods, which are supposed to indicate, from comparison with those of previous years, the probable final yield. The first of these reports shows for each State of the cotton belt the amount ginned to September 1, and subsequent reports give like information to the dates September 25, October 18, November 1, November 14, December 1, December 13, January 1, and January 16. These reports are considered of much value to those concerned in the selling and buying of cotton, as affording indications of the size of the crop, the value of cotton depending largely on the amount grown.

The object of this paper is to point out briefly the influence of the weather as affecting the amount of cotton ginned during the different periods indicated above, as an aid to a correct interpretation of the significance of the successive reports issued by the Bureau of the Census, especially as to those issued early in the harvest season.

The successful growth of cotton has strictly geographic limitations, established largely by temperature conditions, and little can be grown outside what is known as the cotton belt proper. It can not be successfully grown unless the mean summer temperature is at least about 78° F. and the average frostless season about 200 days in length. The thermal requirements of the plant make temperature conditions during the early growing season an important factor of its advancement and final development, as pointed out by the writer in a previous article on the subject of weather and cotton production in Texas.¹ Incidentally, though, it might be stated that in Texas, owing to its normally higher temperature, cotton is less affected by relatively cool weather than it is in most other States of the belt, especially those bordering on the line of limiting temperatures.

There are two weather factors, operating separately and independently of each other, which largely control the relative amount of cotton ginned from year to year during a given ginning period, and also that ginned during the several periods of any single year. These are the temperature conditions during certain early months of the active growing season, principally May and June, and the amount of fair or rainy weather during the ginning period itself.

The amount of cotton ginned to September 25, a knowledge of which is assumed to afford the most important early indications of the size of the crop, may be near the average amount of a series of years, but this does not necessarily mean that the crop is an average one, as the amount harvested to this date depends largely, and almost wholly, on the relative earliness or lateness

of the crop, and this, in turn, depends mostly on the temperature during certain critical periods of growth. It is true that the amount of fair weather during the period covered by the report has its influence, but the temperature factor early in the season is the dominating one for the first reports.

The relations between temperature conditions and the early maturity of the cotton crop, as indicated by the first ginning reports, for the 11-year period 1905 to 1915, are shown in Table 1 and graphically presented in figure 1. Table 1 shows the amount of cotton ginned, to the nearest thousand bales, to September 25 and also to October 18, for the eight principal cotton States, that for Oklahoma, Arkansas, and North Carolina, however, being omitted for September 25, as active ginning does not begin in those States until a later date. This table also shows the average daily departure of temperature from the normal for each month from May to August, inclusive, and finally the average daily departure of temperature for each State for the period that appears to affect most vitally the advancement and final early maturity of the crop.

The amounts of cotton ginned were taken from reports of the Bureau of the Census, and represent running bales, except that round bales are counted as half bales; linters are not included. All data are for the 11-year period 1905 to 1915, inclusive, which covers the time for which reports have been made on the present division of ginning periods.

For the States of Oklahoma, Arkansas, and North Carolina temperatures are of much importance during practically the entire growing season, owing to their comparatively low values. In South Carolina, Georgia, and Alabama, May and June appear to be the critical temperature months, while for Mississippi and Texas, the relations are not so marked as for the other States, owing, as previously indicated, to their more southern situation and normally higher temperatures; hence for these States the months of May to July, inclusive, appear to be the most important. Figure 1 shows these relations graphically; it clearly indicates that the temperature factor is the dominating one in determining whether the early ginning reports are to be relatively small or large. For example, it shows that at the end of June for any year, with a knowledge of the temperature conditions for that and the preceding month, a forecast as to the approximate amount of cotton that would be ginned to September 25 in the States of South Carolina, Georgia, and Alabama could be made with a fair chance of success. These temperature indications are, of course, subject to modification by abnormally rainy weather or fair during the ginning period itself, but on the whole the lines of the graphs show a marked relation between the temperatures during May and June and the amount of cotton ginned.

Likewise, when the harvest becomes further advanced, the relation of the amount ginned during given periods to the total productions is controlled also, on the whole, by temperature conditions as above indicated, but only indirectly and in an opposite way from the earlier gin-

¹ See MONTHLY WEATHER REVIEW, February, 1915, 43; 61-65.

ning. That is to say, if the temperatures for a given year are favorable for an early maturity of the crop, obviously a greater proportion than the average would be ginned to a specified date, say September 25, and this would leave a smaller proportion to be ginned after

In compiling the data showing the amount of fair weather during the respective ginning periods, three days' leeway was allowed in each case; that is, the second ginning period was considered, so far as fair weather was concerned, to extend from August 29 to

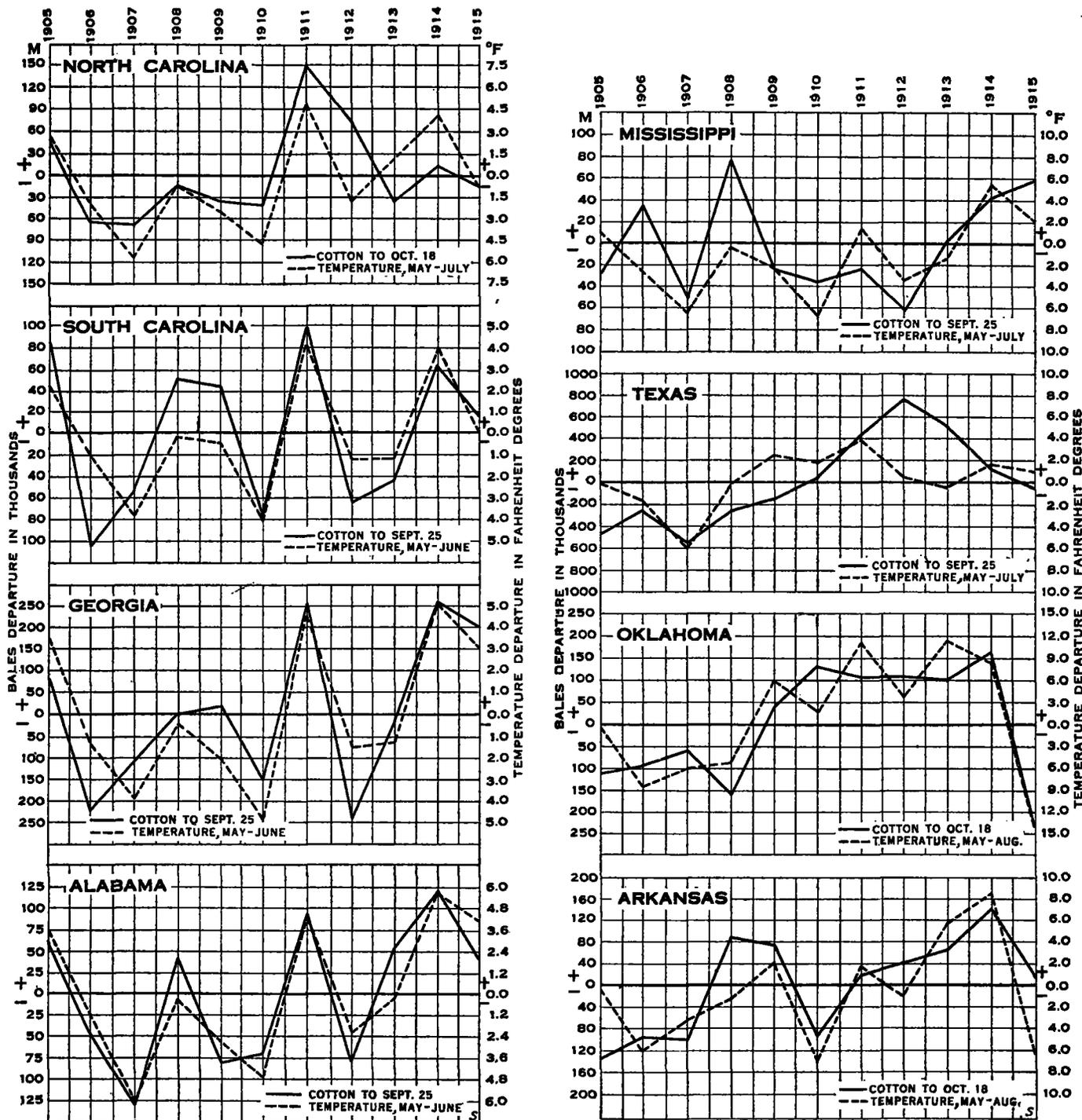


FIG. 1.—Comparison between departures in amount of cotton ginned (thousand bales) to a given date and mean daily departures from the normal temperatures during the given months of the growing season. (Cf. Table 1.)

that date. Table 2 shows for Georgia and Alabama the percentages of the total crop that were ginned during the several periods to December 1; the average daily temperature departures from the normal during May and June and also the percentages of fair days during the respective ginning periods.

September 21, instead of September 1 to September 25. This more nearly represents the actual harvest period, as the cotton picked during the last three days of the ginning period, or at least most of it, would not be ginned until after the rendition of the report, and consequently would appear in that of subsequent date.

To bring out clearly the variations in the proportion of the total crop ginned during the different periods (early or late) as related to May and June temperatures, there is included in Table 2 a graphic section in which the years are arranged in order of temperature departures, the plus values of cotton percentages ginned being set in boldface type. This table shows that in years when the May and June temperatures were high the ratios of the amount ginned to the total crop were as a rule high during the first two ginning periods and low thereafter, while for years with minus temperature departures these ratios were reversed.

The data included in this table show, also, the combined influence of temperature during the early growing season and weather conditions during the respective ginning periods. While they indicate that temperature is, broadly speaking, the controlling factor which determines whether the ginning will be relatively heavier during early or later periods throughout the entire harvest season to December 1, acting directly during the earlier ginning periods and indirectly during the later, the modifying influence of weather during the respective periods may also be seen by comparing that portion of the table showing percentages of clear days with apparent abnormalities in the other portion, showing percentages of cotton ginned.

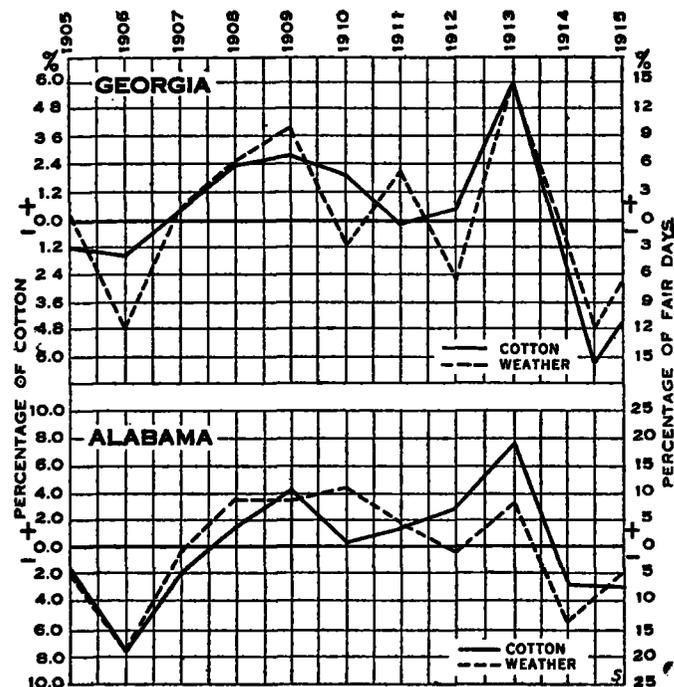


FIG. 2.—Comparison between departures in percentage of cotton ginned from September 25 to October 18, and the departures of the number of fair days from the average for the same period. (Cf. Table 3.)

The amount of cotton ginned from September 25 to October 18 is, on the average, larger than for any other period, and during this time rainy or fair weather has perhaps a greater direct influence on the amount ginned than it has for any other period, owing to the fact that the time covered lies more or less in the transition zone, so to speak, between the larger and smaller ginning percentages, as shown in Table 2, graphic section, which more or less neutralizes for this period the temperature influence. These relations are shown by the data in Table 3 and the indications of figure 2. Table 3 shows for Georgia and Alabama the departures from the average percentage of the total crop ginned from September 25 to October 18,

and the departures from the average percentage of fair days during the same period, the data being graphically shown in figure 2.

As the relative amounts of cotton ginned, from year to year, during a specified ginning period depend largely on the amount of fair weather, which makes picking possible, the number of fair days during such period for a particular year, when considered in conjunction with the average number during a series of years, can be applied to advantage, by several different methods, directly to the actual number of bales ginned during the period for the purpose of computing approximately the total crop.

One method that can thus be employed is to compute the average number of bales ginned each fair day during a specified period of any year, and by comparing this with the average number ginned for each such day for a series of years, the indications, or percentages of the actual ginning above or below the average, give valuable suggestions as to whether the crop will be actually above or below the average, and to what extent. Another, and perhaps preferable, method may be illustrated by the following simple equation:

$$X = a/bc \quad (1)$$

where X is the approximate total crop; a , the number of bales ginned during the period; b , the percentage of the total crop ginned on the average (for a series of years) for each fair day of the period; and c , the number of fair days during the particular period. As an example of the practical application of this latter method the values for a , b , and c are given for the State of Georgia for the combined ginning periods from September 1 to November 14 for each of the 11 years from 1905 to 1915 and the results indicated.

It will be noted in this case that the amount of cotton ginned from September 1 to November 14, when considered in conjunction with the number of fair days, indicate for each year, to a very close approximation, the actual crop, the error in none of the 11 years being as great as 5 per cent and averaging about 2.5 per cent. The values for the amount of cotton ginned are given in running bales, as before stated.

CONCLUSION.

A careful study of the tables and graphic illustrations presented with this paper will clearly indicate that a forecast of the size of the cotton crop, based on the ginning reports, has a much greater value when consideration is given to the influencing weather factors, as pointed out, than when the reports alone are considered. For example, if temperatures during the critical months of growth be high and thus conduce to a rapid advancement and early maturity of the crop, and in addition the weather be favorable for picking during the period covered by a given early ginning report, say September 1 to September 25, it may be safely considered that the percentage of the total crop ginned during the period will be much in excess of the average, and the final yield less than that apparently indicated by the actual amount ginned to that date. Incidentally, it may be noted that such conditions obtained during the season just closed, the early ginning reports of which showed relatively large values.

If, however, these modifying weather influences work in opposition and thus largely neutralize each other then the amount ginned, whether above or below the average, gives a better direct indication as to whether the final yield will also show values above or below the average

than in the other case. Furthermore, if the temperature conditions were unfavorable for early maturity and the percentage of fair days during the ginning period small, it may be safely assumed that the final yield will be larger than apparently indicated by the actual amount ginned.

In studying early ginning reports in connection with the two modifying weather factors under discussion, it must be borne in mind that temperature has the dominating influence and should be given greater weight, but later, say for the period from September 25 to October 18, the amount of fair weather during the period itself takes precedence. This latter condition is shown in Table 3 and figure 2, while the former is indicated by the data in Table 1 and figure 1.

The fact that favorable temperatures during the early growing season are also conducive to comparatively large yields as well as to early maturity of the crop should likewise be considered, and it might also be noted that early maturity, in effect, postpones the date of first killing frost in Fall by an equal number of days represented by the earliness of the crop, and thus reduces the chance of damage from this source.

TABLE 1.—Cotton ginned to specified dates, to nearest thousand bales, and temperature departures from the normal during certain months of growing season, 11-year period, 1905-1915.

Year.	Ginned to Sept. 25.		Departure from average.		Temperature departures from the normal.				Average daily departure, May to July, inclusive.
	Bales.	Bales.	Bales.	Bales.	°F.	°F.	°F.	°F.	
1905	335	+ 47	+2.1	+0.3	+0.5	-1.3	+2.9		
1906	223	- 65	-1.1	+0.7	-1.6	+2.1	-2.0		
1907	216	- 72	-2.3	-4.0	+0.6	-0.4	-5.7		
1908	276	- 12	+0.1	-1.1	-0.1	-1.3	-1.1		
1909	255	- 33	-1.8	+1.6	-2.4	-1.5	-2.6		
1910	250	- 38	-2.4	-2.6	+0.2	-0.8	-4.8		
1911	438	+150	+1.8	+2.7	+0.1	+1.1	+4.6		
1912	356	+ 68	+0.6	-1.7	-0.6	-0.8	-1.7		
1913	252	- 36	+0.5	-0.6	+1.3	-0.6	+1.4		
1914	301	+ 13	+0.6	+3.6	-0.2	+1.0	+4.0		
1915	265	- 23	+0.8	-1.9	+0.2	+0.0	-0.9		
Means	288								

South Carolina.

1905	324	+ 84	643	+ 43	+1.5	+0.9	+0.5	-1.5	+2.4
1906	131	-109	397	-203	-1.5	-0.3	-1.3	+1.2	-1.0
1907	186	- 84	537	- 63	-1.4	-2.5	+1.6	-0.1	-3.9
1908	290	+ 50	661	+ 61	+0.9	-1.1	-0.3	-0.5	-0.2
1909	285	+ 45	624	+ 24	-1.7	+1.2	-1.4	-0.3	-0.5
1910	161	- 79	516	- 84	-1.7	-2.4	-0.5	-0.2	-4.1
1911	338	+ 98	789	+189	+1.0	+3.1	-0.1	+1.2	+4.1
1912	174	- 66	540	- 60	+1.0	-2.1	-0.3	+0.4	-1.1
1913	193	+ 47	620	+ 20	+0.3	-1.4	+2.0	+0.1	-1.1
1914	304	+ 64	693	+ 93	+0.6	+3.4	+0.1	+0.2	+4.0
1915	269	+ 19	582	- 18	+1.5	-1.6	+0.9	-0.1	-0.1
Means	240		600						

Georgia.

1905	597	+ 83	1,067	- 24	+2.7	+0.8	+0.2	-0.5	+3.5
1906	282	-232	720	-371	-2.0	+0.7	-2.0	+0.9	-1.3
1907	343	-171	879	-212	-1.9	-2.0	+0.9	+0.4	-3.9
1908	515	+ 1	1,119	+ 28	+0.1	-0.5	-0.3	-0.2	-0.4
1909	536	+ 23	1,113	+ 22	-2.4	+0.5	-1.3	+0.3	-1.9
1910	365	-149	913	-178	-2.1	-2.7	-1.3	-0.4	-4.8
1911	796	+252	1,553	+462	+1.2	+3.1	-1.8	+0.1	+4.3
1912	272	-242	798	-298	+0.8	-2.4	-0.6	-0.2	-1.6
1913	492	- 23	1,297	+206	+0.1	-1.4	+1.2	+0.0	-1.3
1914	768	+254	1,368	+277	+0.9	+4.4	+0.7	-0.2	+5.3
1915	716	+202	1,178	+ 87	+2.9	+0.0	+0.7	+0.4	+2.9
Means	514		1,091						

Interval is May and June.

TABLE 1.—Cotton ginned to specified dates, to nearest thousand bales, and temperature departures from the normal during certain months of growing season, 11-year period, 1905-1915—Continued.

Year.	Ginned to Sept. 25.		Departure from average.		Temperature departures from the normal.				Average daily departure, May to July, inclusive.
	Bales.	Bales.	Bales.	Bales.	°F.	°F.	°F.	°F.	
1905	332	+ 61	644	+ 17	+2.7	+1.0	-0.7	-0.4	+2.7
1906	222	- 49	470	-157	-2.1	+1.0	-1.2	+0.9	-1.1
1907	138	-133	417	-210	-3.7	-2.4	+0.8	+1.2	-5.1
1908	316	+ 45	694	+ 67	+0.0	-0.5	-0.2	+0.0	-0.5
1909	188	- 83	512	-115	-2.8	+0.0	-0.3	+1.3	-2.8
1910	201	- 70	525	-102	-2.4	-2.4	-1.5	+0.0	-4.3
1911	360	+ 89	839	+212	+1.7	+2.7	-2.0	+0.6	+4.3
1912	192	- 79	592	- 35	+0.6	-2.8	-0.4	+0.0	-2.3
1913	326	+ 55	840	+213	+0.1	-0.4	+1.0	+0.3	+2.3
1914	392	+121	810	+183	+0.4	+5.1	+1.5	-0.8	+5.5
1915	311	+ 40	556	- 71	+3.2	+0.8	+0.3	-0.7	+4.0
Means	271		627						

Mississippi.

1905	97	- 23	319	- 93	+2.4	+0.7	-2.0	+0.6	+1.1
1906	157	+ 37	365	- 47	-2.1	+0.4	-1.7	+0.4	-2.4
1907	71	- 49	410	- 2	-4.6	-2.4	+0.5	+1.6	-6.5
1908	199	+ 79	621	+209	+0.0	-0.3	-0.6	-0.5	-0.9
1909	97	- 23	390	- 22	-3.0	-0.2	+1.1	+1.6	-2.1
1910	84	- 36	359	- 53	-2.9	-2.8	-1.3	+0.5	-7.0
1911	97	- 23	386	- 26	+1.1	+2.8	-2.2	-0.8	+1.7
1912	57	- 63	347	- 65	+0.2	-3.6	-0.2	-0.4	-3.6
1913	121	+ 1	436	+ 34	-1.3	-0.7	+0.5	+0.8	-1.5
1914	163	+ 43	475	+ 63	-0.4	+4.7	+1.5	-0.6	+5.8
1915	180	+ 60	422	+ 10	+1.5	+0.3	+0.1	-1.3	+1.9
Means	120		412						

Texas.

1905	786	-453	1,431	-715	+1.5	+0.4	-2.0	+1.2	-0.1
1906	1,009	-230	1,999	-147	-0.2	+0.7	-2.0	+1.3	-1.5
1907	657	-582	1,289	-857	-5.4	-0.4	-0.6	+1.5	-6.4
1908	967	-272	1,048	-98	+0.2	+1.2	-1.5	-0.8	-0.1
1909	1,062	-177	1,675	-471	-1.1	+1.2	+2.6	+2.0	+2.7
1910	1,263	+ 24	2,070	- 76	-0.9	+0.4	+2.3	+2.8	+1.8
1911	1,068	+429	2,700	+554	+0.1	+3.6	+0.0	+1.6	+3.7
1912	2,003	+784	3,230	+1,084	+1.4	-2.7	+1.7	+1.2	+0.4
1913	1,728	+489	3,245	+305	+0.4	-2.1	+1.2	+1.4	-0.5
1914	1,324	+ 95	2,716	+570	-1.5	+1.3	+2.1	-1.7	+1.9
1915	1,147	- 92	2,001	-145	-0.3	+1.4	+0.0	-2.9	+1.1
Means									

Oklahoma.

Year.	Ginned to Sept. 25.		Departure from average.		Temperature departures from the normal.				Average daily departure, May to August, inclusive.
	Bales.	Bales.	Bales.	Bales.	°F.	°F.	°F.	°F.	
1905	179	-112	+0.2	+1.8	-2.8	-0.1	-	-	-0.9
1906	199	- 92	-0.1	-1.4	-4.2	-3.1	-	-	-3.0
1907	240	- 51	-6.8	-1.4	+0.2	+2.0	-	-	-5.0
1908	133	-158	-0.6	-1.0	-2.5	-0.9	-	-	-5.0
1909	329	+ 38	-1.5	+0.9	+3.3	+3.3	-	-	-5.0
1910	422	+131	-2.2	+0.5	+2.7	+0.1	-	-	+1.1
1911	397	+106	+4.0	+8.3	+0.3	-1.2	-	-	+11.4
1912	398	+107	+3.6	-2.2	+2.9	-0.6	-	-	-5.7
1913	391	+100	+2.8	+0.2	+3.7	+4.8	-	-	+11.5
1914	451	+160	-0.6	+5.4	+4.6	-1.0	-	-	+5.4
1915	66	-225	-1.7	-2.0	-2.1	-7.0	-	-	-12.8
Means	291								

Arkansas.

1905	120	-140	+1.1	+1.6	-3.3	+0.0	-0.6
1906	163	- 97	-0.8	-0.4	-3.4	-1.4	-6.0
1907	163	- 97	-6.0	-1.2	+1.2	+2.7	-3.3
1908	347	+ 87	+0.3	-0.4	-0.9	-0.4	-1.4
1909	331	+ 71	-2.8	+0.2	+1.7	+3.0	+2.1
1910	161	- 99	-3.7	-2.5	-0.7	-0.4	-7.8
1911	278	+ 18	+1.0	+4.2	-1.8	-1.6	+1.8
1912	300	+ 40	+0.6	-3.3	+1.4	-0.4	-1.7
1913	322	+ 62	+0.1	+1.0	+1.6	+3.0	+5.7
1914	397	+137	+0.3	+6.1	+2.8	-0.8	+8.4
1915	283	+ 23	+0.3	-0.4	-1.8	-4.9	-6.8
Means	280						

Interval is May and June.

TABLE 2.—Percentages of total cotton crop that was ginned during specified ginning periods and departures from the average; average daily temperature departures from the normal during May and June, and percentages of fair days during ginning periods. (11-year period, 1905-1915.)

Year.	Per-centage ginned to Sept. 1.	Per-centage ginned from Sept. 1 to Sept. 25.	Per-centage ginned from Sept. 25 to Oct. 18.	Per-centage ginned from Oct. 18 to Nov. 1.	Per-centage ginned from Nov. 1 to Nov. 14.	Per-centage ginned from Nov. 14 to Dec. 1.	Average daily departure from the normal temperature during May and June.
Georgia.							
1905.....	6.7	27.9	27.2	13.8	7.8	7.0	+3.5
1906.....	1.5	15.7	26.9	17.4	11.6	12.1	-1.3
1907.....	1.9	16.5	28.8	17.4	10.0	7.0	-3.9
1908.....	3.3	22.7	30.6	13.6	8.9	8.9	-0.4
1909.....	5.7	23.3	31.2	14.7	9.4	6.1	-1.9
1910.....	1.1	19.1	30.2	18.1	10.8	10.4	-4.8
1911.....	4.8	22.6	28.2	12.7	7.1	8.3	+4.3
1912.....	1.9	13.1	28.8	17.6	12.1	12.8	-1.6
1913.....	3.1	17.8	34.4	13.2	9.2	10.4	-1.3
1914.....	5.0	23.2	22.0	14.6	11.0	8.1	+5.3
1915.....	6.9	30.0	23.9	12.9	10.8	6.8	+2.9
Mean.....	3.8	21.1	28.4	15.1	9.9	8.9	.....
<i>Percentage departures from the averages arranged in order of temperature departures.</i>							
1914.....	+1.2	+2.1	-6.4	-0.5	+1.1	-0.8	+5.3
1911.....	+1.0	+1.5	-0.2	-2.4	-2.8	-0.6	+4.3
1905.....	+2.9	+6.8	-1.2	-1.3	-2.1	-1.9	+3.5
1915.....	+3.1	+8.9	-4.5	-2.2	+0.9	-2.1	+2.9
1908.....	-0.5	+1.6	+2.2	-1.5	-1.0	±0	-0.4
1906.....	-2.3	-5.4	-2.5	+2.3	+1.7	+3.2	-1.3
1913.....	-0.7	-3.3	+6.0	-1.9	-0.7	+1.5	-1.3
1912.....	-1.9	-8.0	+0.4	+2.5	+2.2	+3.9	-1.6
1909.....	+1.9	+2.2	+2.8	-0.4	-0.5	-2.8	-1.9
1907.....	-1.9	-4.6	+0.4	+2.3	+0.1	-1.9	-3.9
1910.....	-2.7	-2.0	+1.8	+3.0	+0.9	+1.5	-4.8
<i>Percentage of fair days.</i>							
1905.....	83	78	86	92	88	88	.....
1906.....	67	65	86	100	82	82	.....
1907.....	71	78	93	85	65	65	.....
1908.....	83	83	86	85	88	88	.....
1909.....	71	87	86	92	88	88	.....
1910.....	79	74	86	92	88	88	.....
1911.....	71	82	71	69	82	82	.....
1912.....	71	70	79	77	94	94	.....
1913.....	58	91	71	92	94	94	.....
1914.....	79	65	86	92	82	82	.....
1915.....	79	70	71	100	76	76	.....
Mean.....	74	77	82	89	84	84	.....

TABLE 3.—Departures from average percentage of cotton crop ginned from Sept. 25 to Oct. 18; and departures from the average percentage of fair days for the same period, 1905-1915, inclusive.

Years.	Georgia		Alabama	
	Departure percentage per centage.	Departure percentage of fair days.	Departure percentage per centage.	Departure percentage of fair days.
1905.....	-1.2	+ 1	-1.6	- 5
1906.....	-1.5	-12	-7.2	-18
1907.....	+0.4	+ 1	-2.0	- 1
1908.....	+2.2	+ 6	+1.3	+ 8
1909.....	+2.8	+10	+4.1	+ 8
1910.....	+1.8	- 3	+0.1	+12
1911.....	-0.2	+ 5	+1.2	+ 4
1912.....	+0.4	- 7	+3.0	- 1
1913.....	+6.0	+14	+7.5	+ 8
1914.....	-6.4	-12	-2.9	-14
1915.....	-4.5	- 7	-3.2	- 5

TABLE 4.—Amount of cotton ginned, and the number of fair days for the period from Sept. 1 to Nov. 14, as indicating the approximate total crop; cotton given to the nearest thousand bales. Values for the State of Georgia for the 11-year period 1905-1915.

[See Equation 1 in text, p. 8.]

Year.	Percentage of total crop ginned during the period.	(c) Number of fair days during period.	(bc) Product of column 2 by 1.281. ¹	(a) Number of bales ginned during period.	(z) Computed approximate crop (a+bc).	Actual crop.	Percentages of computed error.
	1	2	3	4	5	6	7
	Per cent.	Days.		Bales.	Bales.	Bales.	Per cent.
1905.....	76.7	61	78.1	1,323	1,694	1,725	1.8
1906.....	71.6	56	71.7	1,168	1,629	1,633	0.2
1907.....	72.7	58	74.3	1,354	1,822	1,860	2.0
1908.....	75.8	62	79.4	1,499	1,888	1,977	4.5
1909.....	78.6	61	78.1	1,454	1,862	1,850	0.6
1910.....	78.2	60	76.9	1,417	1,843	1,812	1.7
1911.....	70.6	54	69.2	1,971	2,343	2,794	1.9
1912.....	71.6	54	69.2	1,297	1,874	1,813	3.4
1913.....	74.6	57	73.0	1,751	2,399	2,346	2.3
1914.....	70.8	58	74.3	1,927	2,594	2,723	4.7
1915.....	77.6	58	74.3	1,504	2,024	1,938	4.4
Mean.....	74.4	58.1	.....	.....	.....	.....	2.5

¹ Average percentage of crop ginned each fair day during the period 1905-1915. (b=1.281=Mean of column 1 divided by mean of column 2).