

Air Moistening in Textile Mills

In continuation of the series of charts showing the fluctuations in moisture regain for silk in process of manufacture, the accompanying chart shows the regain for the fall months September, October and November. As explained in connection with the spring and summer charts, this record of moisture regain is based on Schloesing's tables and the U. S. Weather Bureau observations at New York for the year ending February, 1918.

The moisture regain is given for the two observations each day. The dot at the left of the space between the perpendicular lines indicates the regain based on the weather ob-

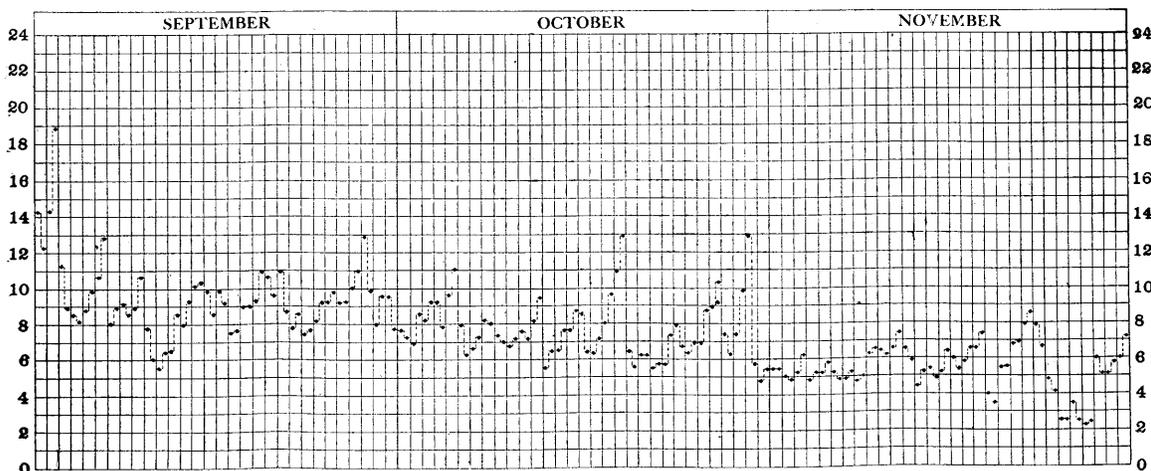
the fall period and mark an overlapping of dog-day weather into September. Excluding these two days the highest regain during the three fall months was 12.8, which was reached on four days, Sept. 6 and 12, Oct. 19 and 30. The lowest point was reached on Nov. 27 with a regain of 2.3. The widest fluctuation in any one day occurred on Oct. 30, the difference being 7.1 between the forenoon regain of 12.8 and the afternoon record of 5.7. In the next issue we will give the record of moisture regain for silk for the three winter months, November, December and January.

In the June and July issues we gave the tabulation of

Moisture Regain for Wool.

At 54°, 75° and 95° F. and Relative Humidity from 1 to 95%.

%	54°	75°	95°	%	54°	75°	95°	%	54°	75°	95°	%	54°	75°	95°	%	54°	75°	95°
1	.58	.52	.45	20	7.79	7.20	6.85	39	11.78	11.07	10.53	58	14.90	14.08	13.40	77	19.	17.88	16.85
2	1.09	1.	.92	21	8.14	7.52	7.15	40	11.93	11.23	10.68	59	15.08	14.25	13.55	78	19.28	18.10	17.08
3	1.32	1.40	1.30	22	8.43	7.78	7.40	41	12.08	11.40	10.85	60	15.25	14.40	13.70	79	19.58	18.40	17.35
4	1.95	1.80	1.69	23	8.68	8.	7.60	42	12.23	11.58	11.	61	15.45	14.60	13.87	80	19.92	18.70	17.60
5	2.37	2.20	2.07	24	8.93	8.22	7.81	43	12.38	11.72	11.15	62	15.65	14.78	14.	81	20.25	19.02	17.95
6	2.75	2.55	2.41	25	9.20	8.47	8.04	44	12.55	11.88	11.30	63	15.82	14.95	14.18	82	20.60	19.40	18.28
7	3.18	2.95	2.79	26	9.40	8.70	8.26	45	12.73	12.05	11.45	64	16.	15.12	14.33	83	21.	19.78	18.65
8	3.56	3.30	3.13	27	9.65	8.90	8.44	46	12.88	12.20	11.60	65	16.20	15.32	14.50	84	21.40	20.20	19.05
9	3.94	3.65	3.46	28	9.85	9.10	8.63	47	13.05	12.32	11.73	66	16.40	15.50	14.67	85	21.85	20.65	19.48
10	4.31	4.00	3.80	29	10.05	9.32	8.83	48	13.20	12.50	11.88	67	16.60	15.68	14.87	86	22.30	21.20	20.
11	4.69	4.35	4.13	30	10.25	9.50	9.	49	13.35	12.68	12.02	68	16.80	15.88	15.	87	22.80	21.75	20.42
12	4.07	4.70	4.47	31	10.45	9.70	9.20	50	13.52	12.80	12.18	69	17.	16.08	15.20	88	23.35	22.30	21.
13	5.42	5.02	4.77	32	10.64	9.88	9.40	51	13.68	12.98	12.32	70	17.22	16.28	15.40	89	23.90	22.95	21.60
14	5.78	5.35	5.09	33	10.80	10.07	9.58	52	13.85	13.12	12.48	71	17.48	16.50	15.60	90	24.50	23.60	22.30
15	6.15	5.70	5.42	34	10.97	10.22	9.75	53	14.00	13.30	12.60	72	17.72	16.70	15.80	91	25.30	24.30	23.07
16	6.48	6.	5.71	35	11.15	10.40	9.92	54	14.18	13.45	12.78	73	17.95	16.92	16.	92	26.08	25.10	23.95
17	6.83	6.32	6.01	36	11.32	10.58	10.08	55	14.35	13.60	12.92	74	18.18	17.18	16.20	93	26.85	26.	24.80
18	7.16	6.62	6.30	37	11.48	10.73	10.20	56	14.55	13.78	13.08	75	18.42	17.40	16.40	94	27.60	26.90	25.80
19	7.49	6.92	6.68	38	11.62	10.90	10.38	57	14.63	13.92	13.23	76	18.70	17.60	16.62	95	28.40	27.72	26.90



DAILY FLUCTUATIONS OF MOISTURE IN SILK IN PROCESS OF MANUFACTURE.

ervation at 8 A. M.; that at the right showing the regain at 8 P. M. The two are connected by a broken line which shows the difference of moisture between the regain at 8 A. M. and at 8 P. M. The horizontal lines and figures at right and left of the chart indicate the regain or number of parts of moisture in 100 parts of bone-dry material by weight.

By comparing this fall chart with the spring record in the June issue it will be seen that the average regain and the extent of the daily and monthly fluctuations are about the same, the only noteworthy difference being that, while the spring record shows a slightly rising tendency from March 1 to May 31, the tendency during the fall period from Sept. 1 to Nov. 30 is slightly downward, the first indicating the approach of the high humidity of summer; and the second the coming of the dry atmosphere of the winter months.

On Sept. 1 and 2 the regain rose to 14.2 and 18.8 parts per 100 parts of dry silk, but these two days are exceptional for

moisture regain for cotton and silk at different degrees of temperature and humidity, as determined by Schloesing. The table which follows gives the tabulation of the Schloesing data for wool, the figures being given for each degree of humidity from 1 to 95 per cent. at three temperatures, 54°, 75°, 95°. As in the case of cotton and silk, relative humidity is the chief factor is affecting the moisture regain for wool, the change of temperature having a comparatively slight effect. With a relative humidity kept at 60 per cent., for example, the moisture regain for wool is 13.87 at a temperature of 95° and 15.45 at 54°, an increase of only 11 per cent. On the other hand at a constant temperature of 75° the moisture regain for wool is 23.6 at a relative humidity of 90 per cent., and only 4 at a relative humidity of 10 per cent., an increase of 490 per cent. as a result of this change in atmospheric humidity.

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AIR MOISTENING IN TEXTILE MILLS.

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These three tables in the June, July and August issues of TEXTILES are the first complete tabulation of moisture regain for cotton, silk and wool at different degrees of temperatures and relative humidity that has ever been published. Based on the most complete and scientific investigation of the subject of which there is any record, these tables and the series of charts showing the moisture regain for cotton, silk and wool in process of manufacture are an important addition to the technical literature of the textile industry and will be found of great value for reference by mill men and all interested in this important subject.