

LOCATION OF OFFICE DECEMBER 31, 1898.

U. S. DEPARTMENT OF AGRICULTURE,  
WEATHER BUREAU.Street, *East Main*Number, *823*Rooms *34 - 36 - 40.*

## ANNUAL METEOROLOGICAL SUMMARY

FOR

1898.

STATION:

*RICHMOND, VIRGINIA.*CORRECTION FOR INSTRUMENTAL ERROR  
OF BAROMETER USED.

## INSTRUCTIONS.

- Seventy-fifth meridian time must be used throughout this report. Be careful to use the 1898 edition.
- If the elevation of the barometer, thermometer, or rain gauge has been changed, that on December 31 must be given. The dates and changes in elevation must be carefully recorded on the margin.
- If the elevation of the barometer has been changed more than 6 feet during the year, the actual barometer readings for the months preceding the change will be reduced to the last elevation by applying the reduction constant, and entered in the proper space. If the elevation has been increased, subtract the correction; if decreased, add it. The original reading (unreduced) will be entered in red above the other. In making up the annual means use lower (black) figures.
- The correction for instrumental error, and all changes in the same, must be carefully noted, with the authority for the new correction; also the date and observation upon which it was first used.
- When one or more observations are taken late, state the fact on the margin of page 2 in this way: One (or more) 8 a. m. (or 8 p. m.) observations taken late. Connect the note to the name of the month by a reference mark. When one or more observations are missed connect all data for less than a full month with a foot-note, stating the length of time of the record.
- The monthly mean pressure, dew-point, relative humidity, absolute range of pressure, and all other data, except as hereinafter provided for, will be taken from the summary of Form 1001—Met'l. The last decimal in the case of the four elements above named will be disposed of in accordance with the usual rule.
- In the space for date of highest and lowest pressure and temperature for the year enter the month and day thereof, as "July 6." The mean daily range and mean daily change of temperature will be taken from the columns similarly headed on page 6, Form 1001.
- The data to be entered in the columns headed "Total" and "Possible" will be taken from the sum of the columns similarly headed on Form 1070. The "Percentage" will be taken from the

percentage of "Total." Stations not supplied with a sunshine recorder will leave these columns blank.

9. The prevailing wind direction for the year (at foot of column headed "Prevailing Direction") will be determined from the sums of "Number of times observed blowing from the N., NE., etc.," except at stations preparing page 5, Form 1001, for the whole year. In the latter case it will be determined from the sums of the time columns page 8.

10. The mean hourly pressure (recorded to thousandths), temperature, and wind velocity will be taken from the mean values at the foot of Forms 1026 and 1022, respectively, and the data for entry in columns headed "For the month," from the average hourly pressure, temperature, and wind velocity, respectively. The base number will be entered once only, in the space provided for it on page 5. The data for entry on page 5 will be taken from the sums as recorded at the foot of page 5, Form 1001. The percentage for the year will be obtained by dividing the sum (multiplied by 100) of the miles and hours from each direction by the total number of miles and hours for the year, respectively. Stations not preparing page 5, Form 1001, will leave the columns on this page blank. Data for less than one-half of a month will not be recorded, and in case the data for one or more months are missing, the sums and means for the year will be omitted. All means will be obtained by dividing the sums of the respective columns by 12, except the average sunshine, which will be obtained by dividing the total sunshine for the year by the possible, and each mean will be recorded to the same number of decimal places as the data from which it is obtained or recorded, except the average sunshine, which will be recorded to whole numbers.

11. A copy of this form will be forwarded to the office of the Chief of Bureau not later than the 15th day of January succeeding the year for which it is the record, in an envelope marked "Records."

WILLIS L. MOORE,  
Chief of Bureau.

## REMARKS.

From *8 Am Jan 1* to *8 pm Dec 31*, inc., *-.004* in.

From \_\_\_\_\_ m. \_\_\_\_\_ to \_\_\_\_\_ m. \_\_\_\_\_ inc., \_\_\_\_\_ in.

From \_\_\_\_\_ m. \_\_\_\_\_ to \_\_\_\_\_ m. \_\_\_\_\_ inc., \_\_\_\_\_ in.



ANNUAL METEOROLOGICAL SUMMARY FOR 1898. — STATION Richmond, Virginia

Latitude N. 37° 32', Longitude W. 77° 26', Local time 0 h. 10 min. (l) Slower than 75th meridian time.

MONTHS.	PRESSURE. (Corrected for temperature and instrumental error only.)								TEMPERATURE.													
	ELEVATION OF BAROMETER CISTERN ABOVE MEAN SEA-LEVEL, ON DEC. 31, <u>144</u> FEET. (All barometer readings have been reduced to above elevation.)								ELEVATION OF DRY THERMOMETER BULB ABOVE GROUND ON DEC. 31, <u>98</u> FEET.													
	MEAN.			Highest observed. (s.)	Date.	Lowest observed. (s.)	Date.	Absolute range. (s.)	MEAN.		FROM SELF-REGISTERING INSTRUMENTS.										NO. OF DAYS.	
	S a. m. (s.) (e.)	8 p. m. (s.) (e.)	Monthly. (s.) (e.)						S a. m. (d.)	8 p. m. (d.)	MEAN.			Highest-est. (e.)	Date.	Lowest-est. (e.)	Date.	RANGE.		Mean daily change (d.)	Max. below 32°.	Max. Above 90°.
			Max. (d.)	Min. (d.)	Monthly-ly. (d.)	Absolute. (e.)	Mean daily. (d.)															
Jan	<u>29.94</u>			<u>30.32</u>	<u>19</u>	<u>29.40</u>	<u>23</u>	<u>0.92</u>	<u>36.5</u>	<u>496</u>	<u>33.2</u>	<u>41.4</u>	<u>70</u>	<u>12</u>	<u>17</u>	<u>2</u>	<u>53</u>	<u>16.4</u>	<u>5.7</u>	<u>0</u>	<u>0</u>	<u>13</u>
Feb	<u>30.01</u>			<u>30.47</u>	<u>4</u>	<u>29.58</u>	<u>21</u>	<u>0.90</u>	<u>30.6</u>	<u>479</u>	<u>29.0</u>	<u>38.4</u>	<u>71</u>	<u>12</u>	<u>11</u>	<u>2</u>	<u>60</u>	<u>18.9</u>	<u>4.5</u>	<u>3</u>	<u>0</u>	<u>17</u>
Mar	<u>30.09</u>			<u>30.46</u>	<u>26</u>	<u>29.72</u>	<u>23</u>	<u>0.74</u>	<u>46.3</u>	<u>60.8</u>	<u>43.3</u>	<u>52.0</u>	<u>82</u>	<u>19</u>	<u>28</u>	<u>1</u>	<u>54</u>	<u>17.5</u>	<u>6.0</u>	<u>0</u>	<u>0</u>	<u>2</u>
Apr	<u>29.86</u>			<u>30.15</u>	<u>8</u>	<u>29.32</u>	<u>15</u>	<u>0.83</u>	<u>48.9</u>	<u>63.4</u>	<u>44.3</u>	<u>53.8</u>	<u>86</u>	<u>18</u>	<u>28</u>	<u>6</u>	<u>58</u>	<u>19.1</u>	<u>5.9</u>	<u>0</u>	<u>0</u>	<u>2</u>
May	<u>29.82</u>			<u>30.09</u>	<u>22</u>	<u>29.29</u>	<u>8</u>	<u>0.80</u>	<u>63.1</u>	<u>76.6</u>	<u>57.7</u>	<u>67.2</u>	<u>92</u>	<u>20</u>	<u>40</u>	<u>9</u>	<u>52</u>	<u>18.9</u>	<u>4.8</u>	<u>0</u>	<u>3</u>	<u>0</u>
June	<u>29.90</u>			<u>30.08</u>	<u>16</u>	<u>29.66</u>	<u>19</u>	<u>0.43</u>	<u>70.9</u>	<u>85.0</u>	<u>64.5</u>	<u>74.8</u>	<u>97</u>	<u>26</u>	<u>56</u>	<u>22</u>	<u>41</u>	<u>20.5</u>	<u>3.4</u>	<u>0</u>	<u>10</u>	<u>0</u>
July	<u>29.92</u>			<u>30.16</u>	<u>14</u>	<u>29.62</u>	<u>9</u>	<u>0.54</u>	<u>75.5</u>	<u>87.4</u>	<u>70.4</u>	<u>78.9</u>	<u>99</u>	<u>2</u>	<u>58</u>	<u>11</u>	<u>41</u>	<u>17.0</u>	<u>3.4</u>	<u>0</u>	<u>13</u>	<u>0</u>
Aug	<u>29.91</u>			<u>30.07</u>	<u>15</u>	<u>29.76</u>	<u>25</u>	<u>0.31</u>	<u>75.0</u>	<u>87.6</u>	<u>70.1</u>	<u>78.8</u>	<u>95</u>	<u>25</u>	<u>65</u>	<u>22</u>	<u>30</u>	<u>17.5</u>	<u>2.4</u>	<u>0</u>	<u>11</u>	<u>0</u>
Sept	<u>29.97</u>			<u>30.20</u>	<u>21</u>	<u>29.69</u>	<u>23</u>	<u>0.51</u>	<u>67.9</u>	<u>82.8</u>	<u>63.4</u>	<u>73.1</u>	<u>94</u>	<u>18</u>	<u>50</u>	<u>12</u>	<u>44</u>	<u>17.4</u>	<u>3.0</u>	<u>0</u>	<u>7</u>	<u>0</u>
Oct	<u>29.99</u>			<u>30.33</u>	<u>24</u>	<u>29.36</u>	<u>22</u>	<u>0.97</u>	<u>56.6</u>	<u>68.9</u>	<u>52.4</u>	<u>60.6</u>	<u>84</u>	<u>3</u>	<u>34</u>	<u>28</u>	<u>50</u>	<u>16.5</u>	<u>3.1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Nov	<u>30.02</u>			<u>30.38</u>	<u>3</u>	<u>29.43</u>	<u>19</u>	<u>0.95</u>	<u>41.2</u>	<u>55.1</u>	<u>38.9</u>	<u>47.0</u>	<u>71</u>	<u>9</u>	<u>26</u>	<u>27</u>	<u>45</u>	<u>16.2</u>	<u>3.9</u>	<u>0</u>	<u>0</u>	<u>6</u>
Dec	<u>29.99</u>			<u>30.50</u>	<u>14</u>	<u>29.47</u>	<u>5</u>	<u>1.04</u>	<u>35.4</u>	<u>49.8</u>	<u>31.3</u>	<u>40.6</u>	<u>69</u>	<u>30</u>	<u>16</u>	<u>15</u>	<u>53</u>	<u>18.5</u>	<u>5.8</u>	<u>0</u>	<u>0</u>	<u>17</u>
Sum	<u>359.42</u>				Highest. Date. <u>Dec</u>		Lowest. Date. <u>May</u>	<u>8.94</u>	<u>647.9</u>	<u>814.9</u>	<u>578.5</u>	<u>706.6</u>		Max. Date. <u>July</u>	Min. Date. <u>Feb</u>		<u>581</u>	<u>216.4</u>	<u>52.0</u>	<u>3</u>	<u>44</u>	<u>57</u>
Mean	<u>29.95</u>			<u>30.50</u>	<u>14</u>	<u>29.29</u>	<u>8</u>	<u>0.74</u>	<u>54.0</u>	<u>67.9</u>	<u>49.9</u>	<u>58.9</u>	<u>99</u>	<u>2</u>	<u>11</u>	<u>2</u>	<u>48</u>	<u>18.0</u>	<u>4.3</u>			

a.—Omit data from this space. c.—To hundredths. d.—To tenths. e.—To whole numbers. s.—Not to be filled out till end of year. l.—Write faster, or slower, as the case may be.



MONTHS.	TEMPERATURE.								DEW-POINT.			RELATIVE HUMIDITY. (Percentage.)			VAPOR PRESSURE.			PRECIPITATION. (Amount in inches and hundredths.) ELEVATION OF TOP OF GAUGE ABOVE GROUND DEC. 31. <u>89</u> FEET.										SNOWFALL (total depth)		
	No. OF DAYS.																													
	MEAN.								MEAN.			MEAN.			MEAN.			TOTAL AMOUNT.	GREATEST AMOUNT IN ANY 24 CONSECUTIVE HOURS.					EXCESSIVE.						
	BELOW—		ABOVE—						8 a. m. (e.)	8 p. m. (e.)	Month-ly. (e.)	8 a. m. (e.)	8 p. m. (e.)	Month-ly. (e.)	8 a. m. (x.)	8 p. m. (x.)	Month-ly. (x.)		2.50 inches in 24 hours. (g.)			1 inch per hour. (g.)								
	14°.	32°.	41°.	50°.	59°.	68°.	77°.	90°.											o	o	o	%	%	%	In.	In.	In.		Am't.	Date.
Jan	0	3	15	3	0	0	0	0	31			80			.179			1.05	0.34	25	0	0	0	0	0	0	0	0	0	3.0
Feb	0	4	11	2	0	0	0	0	25			78			.142			1.05	0.52	18-19	0	0	0	0	0	0	0	0	0	7
Mar	0	0	27	16	8	1	0	0	41			83			.276			3.78	1.12	24-30	0	0	0	0	0	0	0	0	7	
Apr	0	0	27	19	9	3	0	0	42			78			.280			4.83	1.17	4-5	0	0	0	0	0	0	0	0	2.0	
May	0	0	31	29	27	12	3	0	56			79			.459			5.28	1.58	5-6	0	0	0	0	0	0	0	0	0	
June	0	0	30	30	30	24	12	0	62			74			.560			2.98	1.00	12	0	0	0	0	0	0	0	0	0	
July	0	0	31	31	31	29	22	0	69			80			.714			4.15	1.90	17-18	0	0	0	1.18	0.39	17	0	0	0	
Aug	0	0	31	31	31	31	22	0	70			84			.733			6.31	2.95	10-11	2.95	7	45	10-11	1.18	1.00	14	0	0	
Sept	0	0	30	30	30	20	9	0	61			79			.554			2.33	1.88	22-23	0	0	0	1.16	0.55	23	0	0	0	
Oct	0	0	31	26	15	7	2	0	53			88			.441			4.59	1.04	26	0	0	0	0	0	0	0	0	0	
Nov	0	1	24	9	2	0	0	0	37			84			.230			2.22	0.65	29-30	0	0	0	0	0	0	0	0	0	.8
Dec	0	4	15	4	0	0	0	0	29			76			.169			3.08	0.85	19-20	0	0	0	0	0	0	0	0	7	
Sum	0	11	303	230	183	127	70	0	576			960			4.737			41.65	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	5.8	
Mean	a.	a.	a.	a.	a.	a.	a.	a.	48			80			.395			a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	

x.—To thousandths. g.—No entry unless the precipitation actually equaled or exceeded 2.50 inches in 24 consecutive hours, or 1 inch per hour, as the case may be.



check on this for 1899  
annual

MONTHS.	MEAN CLOUDINESS. (0 to 10.)		HOURS OF SUNSHINE.			WIND. ELEVATION OF ANEMOMETER CUPS ABOVE GROUND DEC. 31, 105 FEET.														NUMBER OF DAYS.									
	8 a. m.	8 p. m.	(d.)	TOTAL MOVEMENT IN MILES.	PREVAILING DIRECTION.	MAXIMUM HOURLY VELOCITY DURING MONTH.			NO. OF DAYS WITH GALES.	DIRECTION.								NO. OF CALMS.	CLEAR.	PARTLY CLOUDY.	CLOUDY.	PRECIPITATION.				THUNDERSTORMS.	AURORAS.		
	(d.)	(d.)				Miles.	From.	Date.		(h.)	NUMBER OF TIMES OBSERVED BLOWING FROM THE—											.01 inch and over.	.04 inch and over.	SNOW.	HAIL.			FOG.	
	Monthly.	Monthly.				N.	NE.	E.		SE.	S.	SW.	W.	NW.	.01	.04	SNOW.					HAIL.	FOG.						
Jan.	6.6	5.2	6.6	4144	SW	30	SW	23	1	6	2	2	3	3	6	8	1	0	8	7	16	11	5	1	0	3	0	0	
Feb.	4.7	3.2	4.1	3697	N	31	W	15	2	7	1	0	6	2	4	4	3	1	15	7	6	6	4	0	0	2	0	0	
Mar.	6.6	6.3	6.6	5595	N	25	S	13	1	26	15	1	10	5	0	2	3	0	8	9	14	15	12	0	0	2	0	0	
Apr.	5.3	4.9	5.3	5869	W	35	N	27	4	13	5	3	3	7	10	10	9	0	11	9	10	12	10	1	0	0	1	0	
May.	5.6	6.0	5.6	5047	N	26	N	8	1	13	7	2	12	8	5	5	10	0	10	11	10	20	14	0	0	0	8	0	
June.	5.0	4.5	5.0	4364	N	28	W	26	1	13	6	3	11	7	12	3	5	0	9	14	7	12	9	0	0	0	5	0	
July.	5.6	6.2	5.6	4426	N	25	SE	17	1	16	6	5	13	12	4	3	3	0	6	17	8	17	13	0	0	0	7	0	
Aug.	5.8	5.0	5.8	4405	S	34	SW	4	1	8	7	4	9	22	9	2	1	0	4	21	6	12	9	0	0	0	5	0	
Sept.	4.6	3.6	4.6	4116	N	24	W	5	1	0	16	11	3	6	7	12	3	1	14	9	7	6	4	0	0	0	3	0	
Oct.	5.0	4.9	5.0	4779	SE	28	SE	18	1	13	9	6	12	2	6	7	7	0	12	7	12	15	12	0	0	2	0	0	
Nov.	5.2	4.2	5.2	4186	SE	26	S	10	1	9	2	0	13	10	6	13	6	1	10	10	10	13	12	1	0	3	0	0	
Dec.	5.2	4.7	5.2	4487	SW	36	SW	4	2	13	2	1	9	8	16	5	4	4	11	8	12	10	9	1	0	3	0	0	
Sum.	6.4	5.88		55115	a.	a.	a.	a.	7	153	70	30	107	93	90	65	53	7	118	129	118	149	113	4	0	15	29	0	
Mean	5.4	4.9	5.4		N	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	

h.—Days with 40 miles per hour and over.