

# **RICHMOND MONTHLY AVE. TEMPERATURES COMPARISON**

| Year        | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | annual |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| <b>1890</b> | 48.5 | 49.9 | 47.5 | 57.6 | 67.1 | 78.1 | 74.3 | 75.8 | 70.3 | 62.2 | 54.0 | 44.2 | 60.8   |

White Data from Wakefield Weather Records

|              |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>1891</b>  | 44.9 | 49.3 | 44.2 | 63.3 | 66.5 | 77.7 | 76.1 | 78.5 | 75.0 | 64.7 | 49.5 | 47.2 | 61.4 |
| VA NCDC      |      |      |      |      |      |      | 75.6 | 78.5 | 75.3 | 59.8 | 49.2 | 47.2 |      |
| Wm Pleasants |      |      |      |      |      |      | 75.6 | 78.5 | 75.3 | 59.8 | 49.2 | 47.2 |      |

First Issue Jul. 1891 -- Virginia data from NCDC

**Observers NOT Listed**

PURCHASED XEROX Papers from NCDC --William H. Pleasants Obs.

|              |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>1892</b>  | 39.2 | 43.9 | 44.9 | 57.7 | 69.9 | 78.4 | 78.4 | 80.0 | 69.7 | 59.0 | 47.1 | 38.9 | 58.9 |
| VA NCDC      | 39.2 | 43.9 | 44.9 | 57.7 | 69.9 | 78.4 | 78.4 | 80.0 | 69.7 | 59.0 | 47.1 | 38.9 | 58.9 |
| Wm Pleasants | 39.2 | 43.9 | 44.9 | 57.7 | 69.9 | 78.4 | 78.4 | 80.0 | 69.7 | 59.0 | 47.1 | 38.9 | 58.9 |

**Observers first listed Sep 1892**

*Italics - William H. Pleasants -Virginia data from NCDC*

|                |      |             |             |             |             |             |             |             |             |      |      |      |      |
|----------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|------|------|------|
| <b>1893</b>    | 28.8 | 40.4        | 46.9        | 61.4        | 65.6        | 74.3        | 79.5        | 76.0        | 68.2        | 58.7 | 47.6 | 40.6 | 57.3 |
| VA NCDC        | 28.8 | <u>40.8</u> | <u>46.8</u> | <u>59.5</u> | <u>65.2</u> | <u>74.0</u> | <u>79.2</u> | <u>75.8</u> | <u>68.4</u> | 58.6 | 47.3 | 41.2 | 57.1 |
| Source unknown | 28.8 | 45.0        | 44.7        | 59.2        | 64.7        | 75.2        | 79.0        | 75.0        | 67.7        | 58.7 | 46.0 | 42.0 | 57.2 |

Temperature Data from Lyle at Wakefield

White Data from Wakefield Weather Records

January 16, 1893 the min. temp. obs. Was -13 °F

|                |      |      |      |      |      |      |      |      |             |             |             |             |      |
|----------------|------|------|------|------|------|------|------|------|-------------|-------------|-------------|-------------|------|
| <b>1894</b>    | 36.4 | 35.9 | 53.7 | 57.1 | 70.1 | 76.8 | 81.6 | 74.7 | 73.0        | 61.6        | 48.8        | 44.7        | 59.5 |
| VA NCDC        | 40.0 | 40.8 | 53.6 | 57.1 | 69.9 | 76.6 | 80.1 | 74.6 | <u>73.1</u> | <u>61.6</u> | <u>48.9</u> | <u>43.6</u> | 60.0 |
| Source unknown | 40.6 | 45.0 | 51.5 | 56.8 | 69.7 | 77.8 | 79.9 | 74.1 | 72.4        | 61.7        | 47.6        | 44.4        | 60.1 |

Temperature Data from Lyle at Wakefield

July 23rd 1894 the maximum obs. Temperature was 106 °F & Petersburg was only 97 °F

*Italics - William H. Pleasants -Virginia data from NCDC*

Feb to Sep. Bon Air data indicated by a symbol but William H. Pleasant is listed as the Obs. all year

See Feb 1895 Statement

Underlined Bon Air in Virginia data from NCDC

| Year                                        | Jan   | Feb   | Mar   | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | annual |
|---------------------------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|--------|
| <b>1895</b>                                 | 35.1  | 31.3  | 46.9  | 58.0 | 63.9 | 78.8 | 75.5 | 79.3 | 76.4 | 56.4 | 51.9 | 40.4 | 57.8   |
| VA NCDC - Obs. Listed as Wm. Pleasants      |       |       |       |      |      |      |      |      |      |      |      |      |        |
| Bon Air                                     | blank | 31.4  | 46.6  | 57.8 | 65.1 | 77.0 | 75.3 | 79.2 | 76.7 | 56.4 | 49.8 | 41.2 | 59.7   |
| VA NCDC - Obs. Listed as Capt. J. C. Shafer |       |       |       |      |      |      |      |      |      |      |      |      |        |
| Richmond                                    | 36.6  | blank | blank | 55.4 | 63.2 | 75.8 | 74.7 | 77.8 | 78.8 | 53.6 | 48.4 | 40.0 |        |
| Source unknown                              | 37.2  | 35.6  | 44.5  | 57.5 | 64.6 | 78.2 | 75.1 | 78.7 | 76.0 | 56.5 | 48.5 | 42.0 | 57.9   |

Temperature Data from Lyle at Wakefield

Sep. 19th 1895 the maximum temperature observation at Bon Air was 107 °F & Petersburg was only 103 °F

IMPORTANT -- Found in the Feb. 1895 VA NCDC REPORT

The reports hitherto given for Richmond, by Mr. William Pleasants are made from Bon Air , and have been since September of 1894: In this report, and hereafter they will be credited to Bon Air.

Major Lewis Ginter has had instruments provided and has arranged to have records made and reported from his place outside of Richmond.

Note Richmond is not listed in the Feb. issue but Bon Air is and after this statement Wm H. Pleasants is listed as the Observer at Bon Air. This gives the time period when William Pleasants moved to Bon Air, VA. From April on Richmond is again in the list of stations and Captain J. C. Shafer is the Observer at Westbrook Farm which was located 4 miles NW of Richmond, VA -

It is also interesting that the mean monthly temperature for the same location varied by as much as 0.4 °F from the station's chart to the individual stations temperature table. See April 1895

Captain J. C. Shafer is the Observer 4 miles NW of Richmond

William H. Pleasants - listed as the observer

|                |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>1896</b>    | 41.2 | 41.7 | 45.4 | 59.1 | 74.6 | 73.1 | 72.8 | 80.9 | 70.0 | 58.2 | 54.5 | 39.5 | 59.3 |
| VA NCDC        |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Richmond       | 35.8 | 39.0 | 43.4 | 59.4 | 71.8 | 73.6 | 78.9 | 77.4 | 69.5 | 55.0 | 52.4 | 38.0 | 57.9 |
| J. C. Shafer   |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Bon Air        | 38.2 | 41.4 | 45.2 | 61.6 | 72.8 | 73.1 | 78.8 | 79.9 | 70.6 | 58.3 | 60.2 | 40.0 | 59.6 |
| Obs. Pleasants |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Source unknown | 38.8 | 45.6 | 48.1 | 61.3 | 72.3 | 74.3 | 78.6 | 79.3 | 69.9 | 58.4 | 54.5 | 40.8 | 60.2 |

Temperature Data from Lyle at Wakefield

William H. Pleasants - listed as the observer

Elevation of William H. Pleasants site 96 feet

Captain J. C. Shafer is the Observer 4 miles NW of Richmond

Elevation of J.C.Shafer's site 130 feet

|                |      |      |      |      |      |      |      |      |       |      |       |       |      |
|----------------|------|------|------|------|------|------|------|------|-------|------|-------|-------|------|
| <b>1897</b>    | 36.6 | 44.5 | 51.4 | 58.8 | 66.5 | 78.8 | 79.3 | 78.0 | 72.2  | 60.2 | 49.1  | 42.1  | 59.8 |
| VA NCDC        |      |      |      |      |      |      |      |      |       |      |       |       |      |
| Richmond       | 33.4 | 41.2 | 48.6 | 55.0 | 64.0 | 72.5 | 77.2 | 76.4 | blank | 60.4 | blank | blank |      |
| J. C. Shafer   |      |      |      |      |      |      |      |      |       |      |       |       |      |
| Bon Air        | 36.8 | 42.6 | 51.5 | 58.1 | 65.0 | 73.9 | 79.1 | 78.0 | 72.2  | 61.6 | 49.4  | 40.2  | 59.0 |
| Obs. Pleasants |      |      |      |      |      |      |      |      |       |      |       |       |      |
| Wx. Bureau     |      |      |      |      |      |      |      |      |       | 61.0 | 49.2  | 41.6  |      |
| Source unknown | 37.4 | 46.8 | 49.4 | 57.8 | 64.5 | 75.1 | 78.9 | 77.5 | 70.5  | 60.3 |       |       |      |
| Temperatures   | 33.4 | 41.4 | 48.6 | 54.4 | 64.0 | 72.6 | 78.7 | 76.3 | 71.6  | 61.3 | 49.4  | 42.1  | 57.8 |

Used by Wakefield Div. of NWS

Wx. Bureau started obs. on Oct 5th 1897 so Oct wasn't complete but why wasn't the Bureau data used for Nov., and Dec. ??

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | annual |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|

# RICHMOND MONTHLY TOTAL PRECIPITATION COMPARISON

| Year                                      | Jan         | Feb          | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep          | Oct         | Nov         | Dec          | annual |
|-------------------------------------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|--------------|--------|
| <b>1890</b>                               | 1.53        | 3.35         | 3.34        | 2.79        | 4.69        | 2.21        | 4.58        | 5.51        | 5.50         | 8.51        | 0.11        | 4.48         | 46.60  |
| White Data from Wakefield Weather Records |             |              |             |             |             |             |             |             |              |             |             |              |        |
| <i>Wm Pleasants</i>                       | <i>1.81</i> | <i>3.12?</i> | <i>3.47</i> | <i>2.85</i> | <i>4.50</i> | <i>4.52</i> | <i>4.19</i> | <i>3.26</i> | <i>blank</i> | <i>7.94</i> | <i>0.11</i> | <i>blank</i> |        |

*Italics - William H. Pleasants -Virginia data from NCDC*

|                                                             |      |      |      |      |      |      |                       |      |      |      |      |      |       |
|-------------------------------------------------------------|------|------|------|------|------|------|-----------------------|------|------|------|------|------|-------|
| <b>1891</b>                                                 | 4.79 | 5.68 | 8.78 | 1.96 | 5.18 | 4.12 | 4.69                  | 4.80 | 1.24 | 2.12 | 1.88 | 2.13 | 47.37 |
|                                                             |      |      |      |      |      |      | Same totals Jul & Aug |      |      |      |      |      |       |
| First Publication was July 1891 and No Observers are listed |      |      |      |      |      |      | 5.86                  | 5.86 | 2.32 | 2.04 | 2.02 | 1.67 |       |
| Wm Pleasants                                                |      |      |      |      |      |      | 5.86                  |      |      | 2.04 | 2.02 | 1.67 |       |

PURCHASED XEROX Papers from NCDC --William H. Pleasants Obs.

|                                                                  |      |      |      |      |      |      |      |      |      |      |      |      |       |
|------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| <b>1892</b>                                                      | 3.96 | 3.36 | 3.19 | 6.77 | 2.32 | 3.47 | 5.11 | 3.32 | 3.15 | 0.83 | 4.58 | 1.64 | 41.70 |
| VA NCDC                                                          | 4.13 | 2.71 | 3.63 | 7.07 | 2.22 | 3.12 | 4.18 | 1.24 | 3.09 | 0.46 | 4.36 | 1.42 | 37.63 |
| Observer is Pleasants Listed in the VA NCDC Report starting Sep. |      |      |      |      |      |      |      |      | 3.09 | 0.46 | 4.36 | 1.42 |       |
| Wm Pleasants                                                     | 4.13 | 2.71 | 3.63 | 7.07 | 2.22 | 3.12 | 4.18 | 1.24 | 3.09 | 0.46 | 4.36 | 1.42 | 37.63 |

PURCHASED XEROX Papers from NCDC --William H. Pleasants Obs.

|                 |             |             |             |             |             |             |             |             |             |      |      |      |       |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|------|------|-------|
| <b>1893</b>     | 3.37        | 4.98        | 2.44        | 3.82        | 5.15        | 2.62        | 3.24        | 3.43        | 6.86        | 5.72 | 3.22 | 2.39 | 47.24 |
| Bon Air         | <u>4.42</u> | <u>4.93</u> | <u>3.46</u> | <u>3.60</u> | <u>5.08</u> | <u>2.41</u> | <u>3.58</u> | <u>5.37</u> | <u>7.45</u> | 6.14 | 3.56 | 2.13 | 52.13 |
| A. J. Duesberry | 2.32        | 4.48        | 2.64        | 2.94        | 4.68        | 2.49        | 3.84        | 5.53        | 6.55        | 5.44 | 3.14 | 1.99 | 46.04 |

White Data from Wakefield Weather Records

Underlined Bon Air in Virginia data from NCDC

**A. J. Duesberry in Virginia data from NCDC in Feb. 1894 we find this is a special River Station ONLY PRECIP.**

|                 |      |      |      |      |       |      |      |      |      |      |      |      |       |
|-----------------|------|------|------|------|-------|------|------|------|------|------|------|------|-------|
| <b>1894</b>     | 3.35 | 4.51 | 1.21 | 3.29 | 6.74  | 2.77 | 4.59 | 5.12 | 6.48 | 4.06 | 1.68 | 2.66 | 46.46 |
| VA NCDC         | 3.42 | 4.12 | 1.39 | 3.19 | 6.65  | 5.40 | 2.85 | 4.93 | 7.22 | 4.69 | 1.58 | 2.80 | 48.24 |
| A. J. Duesberry | 3.30 | 4.68 | 1.32 | 3.20 | blank | 2.26 | 5.59 | 4.23 | 7.27 | 4.19 | 1.97 | 2.81 | 40.82 |

**A. J. Duesberry in Virginia data from NCDC**

*Italics - William H. Pleasants -Virginia data from NCDC*

Feb 1894 they list the A.J. Duesberry as a Special River Station and only Rainfall is given

Feb to Sep. Bon Air data indicated by a symbol but William H. Pleasant is listed as the Obs. all year

See Feb 1895 Statement

Underlined Bon Air in Virginia data from NCDC

| Year            | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep    | Oct   | Nov   | Dec   | annual |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|
| <b>1895</b>     | 5.25  | 1.47  | 4.23  | 8.31  | 4.24  | 2.39  | 5.01  | 2.68  | 0.42   | 1.69  | 3.05  | 2.40  | 41.14  |
| VA NCDC         | 5.14  | 1.78  | 4.60  | 7.91  | 5.05  | 2.07  | 5.28  | 2.06  | 0.43   | 2.32  | 3.77  | 2.09  | 42.50  |
| J.C. Shafer     | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Trace? | Blank | Blank | Blank |        |
| A. J. Duesberry | 5.09  | 1.83  | 4.84  | 7.10  | 5.11  | 1.88  | 4.29  | 2.93  | blank  | blank | blank | blank |        |

Feb 1894 they list the A.J. Duesberry as a Special River Station and only Rainfall is given - - - Ends in Sep.

## VA NCDC uses Bon Air for Richmond

Precipitation reports for 1895 are from Bon Air

Captain J. C. Shafer is the Observer at

Westbrook Farm which was located 4 miles NW of Richmond, VA

Shafer had a trace of rain for Sep. that was in question and didn't give reports for the rest of 1895.

Captain J. C. Shafer is the Observer 4 miles NW of Richmond

William H. Pleasants - listed as the observer

|                |       |       |       |       |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>1896</b>    | 2.40  | 4.35  | 3.70  | 1.69  | 3.03  | 5.58  | 8.02  | 0.45  | 6.20  | 0.62  | 3.16  | 0.89  | 40.09 |
| VA NCDC        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Bon Air        | 2.98  | 4.21  | 3.98  | 2.22  | 4.21  | 6.11  | 7.13  | 1.26  | 4.61  | 0.89  | 3.27  | 1.27  | 42.14 |
| Obs. Pleasants |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Richmond       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| J. C. Shafer   | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank |

Elevation of J.C.Shafer's site 130 feet

Elevation of William H. Pleasants' site 96 feet

|                |      |      |      |      |      |      |      |      |      |      |      |      |       |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| <b>1897</b>    | 1.86 | 6.40 | 5.11 | 2.76 | 2.48 | 2.31 | 4.18 | 1.83 | 1.03 | 6.54 | 3.07 | 2.63 | 40.20 |
| VA NCDC        |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Bon Air        | 1.90 | 6.27 | 5.00 | 2.62 | 2.46 | 2.11 | 3.74 | 1.73 | 0.86 | 1.40 | 4.37 | 4.01 | 36.47 |
| Obs. Pleasants |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Richmond       |      |      |      |      |      |      |      |      |      |      |      |      |       |
| J. C. Shafer   |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Wx. Bureau     |      |      |      |      |      |      |      |      |      | 6.54 | 3.07 | 2.63 |       |

Wx. Bureau started obs. on Oct 5th 1897

The Weather Bureau has a precipitation total of 2.63 inches in the station observations but in the precipitation chart only has 2.38 inches of precipitation recorded.

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | annual |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|