

1866-1876.....	416 $a = -0.47$
1877-1887.....	283 $a = -0.70$
1893-1899.....	298 $a = -1.11$

952 $a = -2.28$, whence $a = -0.0024^\circ \text{C}$.

The three periods are again all favorable to the hypothesis, but the coefficient obtained is much smaller than for Hongkong.

Bombay.—The observations, made from 1846 to 1899, were divided into five periods, of which the first four comprise eleven years and the last ten years only. The equations which give (a) are the following:

1846-1856.....	330 $a = -2.37$
1857-1867.....	263 $a = +1.23$
1868-1878.....	423 $a = -0.10$
1879-1889.....	240 $a = -0.47$
1890-1899.....	240 $a = -1.02$

1496 $a = -2.73$, whence $a = -0.0018^\circ \text{C}$.

Of the five periods considered one is clearly unfavorable to the hypothesis; one gives scarcely any variation, and the other three are favorable.

Barbados.—Observations were made from 1865 to 1886, but as the two years 1881 and 1882 were missing, there remained then exactly twenty years which have been divided into two equal periods. The equations which give (a) are the following:

1865-1874.....	356 $a = -0.11$
1875-1886.....	195 $a = +0.69$

551 $a = +0.58$, whence $a = +0.0011^\circ \text{C}$.

The first series is favorable to the hypothesis, the second unfavorable.

Havana.—Sixteen years of observations (1886-1901); using the years 1892-1895 twice, the two series are 1886-1895 and 1892-1901. The equations obtained for (a) are the following:

1886-1895.....	285 $a = -0.72$
1892-1901.....	270 $a = -0.38$

555 $a = -1.10$, whence $a = -0.0020^\circ \text{C}$.

In summing up we find that of the 16 series thus studied, 14 give for (a) a negative value, 2 a positive value; the probability is then, according to these observations, 7 to 1 that an increase in the number of sun spots is accompanied by a diminution in the temperature and inversely.

By giving to the values of (a) deduced from observations of the various stations, weights proportional to the number of series, we obtain for a final value $a = -0.0033^\circ \text{C}$.

Hence, an increase of 100 in Wolf's relative sun-spot numbers (a difference which frequently exists between a maximum and a minimum) will be accompanied by a diminution of 0.33°C in the value of the mean annual temperature.

It is evident that in order to determine the value of the coefficient (a) it would be necessary to work with a much larger number of series. I have given the numbers which precede only as an example of a method which appears to me more exact and more convincing than that ordinarily employed.

CLIMATOLOGY OF COSTA RICA.

Communicated by Mr. H. PITTIER, Director, Physical Geographic Institute.

[For tables see the last page of this REVIEW preceding the charts.]

Notes on the weather.—On the Pacific slope the rains were generally above the normal. In San José pressure and relative humidity were slightly above the average, while temperature was below. Sunshine 168 hours, against a normal of 134. On the Atlantic slope rains were also very abundant, excepting in the valleys of the interior, where there was a relative scarcity. A few local cyclonic movements did some damage to the banana plantations.

Notes on earthquakes.—August 8, 2^h 29^m a. m., slight shock, E-W, intensity II, duration 3 seconds. August 19, 1^h 02^m 50^s a. m., strong shock, WNW-ESE, intensity III, duration 3 seconds.

RECENT PAPERS BEARING ON METEOROLOGY.

Dr. W. F. R. PHILLIPS, Librarian, etc.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —.

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 Guarini, Émile. The Seas of Fog. P. 207.
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 Schultz, L. G. Messungen der Electricitätszerstreuung in der freien Luft. [Abstract of paper of J. Elster and H. Geitel.] Pp. 85-86.
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