points out that the deltaic plain of Egypt resembles the Imperial Valley of California, both being the creation of silt-laden streams and that millions of dollars have been expended in that valley to get rid of the silt.

Since Doctor Taylor is one of the first high authorities to question the value of Nile silt and since should further experiments corroborate his findings the effect would not only be far reaching but also it would justify the course followed by American engineers in the Imperial Valley of California.

Dr. Taylor's conclusions are:

1. A dressing of Nile silt without a summer fallow does not maintain crop yields.

2. A dressing of Nile silt following a summer fallow (as in the basin system of irrigation) does not increase crop yield.

3. The summer fallow is the effective agent in the maintenance of soil fertility under perennial irrigation.

4. Nile silt is not the agent responsible for the maintenance of soil fertility and has not the fertilizing properties previously attributed to it without investigation.—*A. J. H.*

A rare day in August.—The weather of August 4 in Washington, D. C., was exceptionally pleasant, coming as it did after 10 consecutive days with maximum temperature above 90° F. Nearly an inch of rain fell the night of the 3d–4th and the wind shifted to northwest, whence it blew all day of the 4th with a speed about 100 per cent above the average August speed. This combination, clear sky and fresh northwest winds, is rarely experienced in the summer months in Washington, D. C.

The barometric formations that led to this very agreeable change are of more than passing interest since they raise the age-old query, Why do cyclones at times increase in intensity? By intensity is meant an increase in the barometric gradient that materially strengthens the winds.

The barometric situation on the morning of August 2 was as follows: A trough of low pressure, axis, n/s stretched from eastern Nebraska to and beyond the Canadian border; in the southern end of the trough was a secondary cyclone with a closed isobar of 29.70 inches. Directly to the eastward an anticyclone with inner isobar of 30.10 inches covered Michigan and part of Lake Huron. The juxtaposition of these two formations doubtless gave to the secondary cyclone what may be called potential energy of position, since the winds on its eastern front were augmented and intensified by the circulation of the anticyclone, the wind direction in both circulations being substantially the same direction and thus they contributed to the convergence of air streams in the east front of the cyclone. The increase in intensity may be measured by the 12-hour pressure fall associated with the cyclone; on the morning of the 2d it was 0.16 inch, by the p. m. of the same day it had increased to 0.18 inch and by the a. m. of the 3d it was 0.28 inch and 2-hour pressure falls of 0.04 to 0.6 inch were reported from nine stations, thus showing a spreading of the pressure fall in the cyclone. On the morning of the 4th the central pressure fall had increased to 0.48 inch and one station reported a 2-hour fall of 0.12 inch; by this time the central isobar of the cyclone had dropped from 29.70 inches to 29.30 inches and the cool winds on its west side were fresh from the northwest bringing an agreeable respite from the high temperatures of the previous week or 10 days.—*A. J. H.*

Meteorological summary for Chile, July, 1929 (by J. Bustos Navarrete, Observatorio del Salto, Santiago, Chile).—This month was relatively dry in the central zone, and somewhat rainy in the southern part of Chile.

During the first days of the month there prevailed, generally, a régime of high pressure with variable weather in the south. Between the 7th and the 9th a relatively important depression crossed the extreme southern region and brought unsettled weather and rain between Concepcion and Chiloe. In the southern zone the unsettled conditions persisted until the 12th.

After an interval of calm another depression appearing from the west on the 15th caused general rains from Atacama to Chiloe on the 16th; on the following day the unsettled weather gave place and there was established an anticyclonic régime that continued, with variations, until the close of the month. In this period only one relatively important depression crossed the extreme south; this was accompanied by rain on the 27th extending north to Concepcion.

Monthly precipitation in inches was recorded as follows: At Santiago, 1.10; in the region of Concepcion, 2.87; and in the region of Valdivia, 21.02.—*Translated by W. W. R.*

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SOLAR OBSERVATIONS

SOLAR AND SKY RADIATION MEASUREMENTS DURING AUGUST, 1929

By HERBERT H. KIMBALL, *Solar Radiation Investigations*

For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to the REVIEW for January, 1929, 57:26.

Table 1 shows that solar radiation intensities averaged below the normal values for August at all three stations.

Table 2 shows an excess in the total solar radiation (direct + diffuse) received on a horizontal surface at Washington, Madison, and Chicago, the excess at Washington exceeding 13 per cent. A deficiency is shown at Lincoln and New York.

Skylight polarization measurements obtained on four days at Washington give a mean of 54 per cent and a maximum of 58 per cent on the 2d. At Madison, measurements obtained on seven days give a mean of 51 per cent and a maximum of 63 per cent on the 15th. The values obtained at Washington are close to the August averages for that station. Those for Madison are nearly 10 per cent below the corresponding August averages, no doubt principally due to smoke from forest fires.

TABLE 1.—*Solar radiation intensities during August, 1929*

[Gram-calories per minute per square centimeter of normal surface]

Washington, D. C.

Date	Sun's zenith distance: 8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th meridian time	Air mass: A. M.					P. M.				Local mean solar time
	e.	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e.
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Aug. 1	17.96					1.03					15.11
Aug. 2	10.97					1.28					7.87
Aug. 5	8.81		0.84								6.50
Aug. 16	10.21	0.44	0.55	0.70	0.90						9.14
Aug. 17	12.24	0.41	0.50	0.62	0.82						12.24
Aug. 20	7.87	0.61	0.74	0.91	1.09	1.33	1.01	0.83	0.78		7.57
Aug. 21	10.59				0.86	0.93					7.04
Aug. 26	13.13			0.85	1.01	1.25	1.01	0.75	0.58	0.45	9.14
Aug. 31	10.21	0.60	0.68	0.82	1.06						7.57
Means		0.52	0.66	0.78	0.96	1.16	(1.01)	(0.79)	(0.68)	(0.45)	
Departures		−0.10	−0.01	+0.03	+0.04	−0.06	−0.01	−0.08	−0.05	−0.18	

Madison, Wis.

Aug. 7	11.81				0.91	1.14					10.97
Aug. 10	15.65			0.59	0.82						17.37
Aug. 15	8.48			1.04	1.19	1.37					8.48
Aug. 19	8.48			0.97	1.12	1.29					9.47
Aug. 23	10.97					1.19					10.59
Aug. 24	12.24			0.63	0.84	1.16					14.10
Aug. 27	9.14			0.86	1.03	1.38					8.48
Aug. 31	11.38			0.62	0.79	1.20					12.24
Means				0.78	0.96	1.25					
Departures				−0.16	−0.14	−0.06					

[1] Extrapolated.

TABLE 1.—*Solar radiation intensities during August, 1929*—Contd

[Gram-calories per minute per square centimeter of normal surface]

Lincoln, Nebr.

Date	Sun's zenith distance: 8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th meridian time	Air mass: A. M.					P. M.				Local mean solar time
	e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	e.
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Aug. 5	11.38						0.89	0.78	0.62		13.61
Aug. 23	15.65					1.31	0.92	0.72	0.58	0.48	17.37
Aug. 24	15.65					1.28					14.10
Means						(1.30)	(0.90)	(0.75)	(0.60)	(0.48)	
Departures						±0.00	−0.17	−0.14	−0.16	−0.22	

TABLE 2.—*Solar and sky radiation received on a horizontal surface*

[Gram-calories per square centimeter of horizontal surface]

Week beginning—	Average daily radiation: Washington	Madison	Lincoln	Chicago	New York	Twin Falls	Fresno	La Jolla	Average daily departure from normal: Washington	Madison	Lincoln	Chicago	New York
1929	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
July 30	558	494	492	361	381	556	687	394	+109	+31	−29	−5	+11
Aug. 6	394	463	450	374	307	----	658	459	−40	+7	−54	+18	−39
Aug. 13	529	464	527	415	298	----	585	449	+97	+24	+32	+53	−33
Aug. 20	522	433	499	362	359	----	609	460	+109	−2	+14	−6	+45
Aug. 27	436	416	468	351	303	----	606	443	+11	+8	+6	−6	−14
Excess or deficiency since first of year on Sept. 2									+5,152	−672	−2,050	−441	−4,109

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. C. S. Freeman, Superintendent U. S. Naval Observatory. Data furnished by Naval Observatory, in cooperation with Harvard, Yerkes, and Mount Wilson observatories. The differences of longitude are measured from central meridian, positive west. The north latitudes are plus. Areas are corrected for foreshortening and are expressed in millionths of sun's visible hemisphere. The total area, including spots and groups, is given for each day in the last column]

Date	Eastern standard civil time	Heliographic: Diff. long.	Longitude	Latitude	Area: Spot	Group	Total area for each day
1929							
Aug. 1 (Naval Observatory)	*h.* *m.* 10 59	° −62.5	° 288.8	° −3.5	----	185	----
		−9.0	342.3	+21.5	----	37	----
		+30.0	21.3	+9.0	----	15	----
		+42.0	33.3	−21.0	----	154	----
		+46.5	37.8	−11.0	9	----	----
		+64.0	55.3	−11.0	----	62	----
		+76.5	67.8	+7.0	31	----	493
Aug. 2 (Naval Observatory)	11 32	−48.0	289.7	−3.5	----	154	----
		−19.0	318.7	+12.5	----	9	----
		+6.5	344.2	+21.0	22	----	----
		+11.0	348.7	−12.5	----	25	----
		+33.0	10.7	+9.0	3	----	----
		+46.0	23.7	+9.0	6	----	----
		+56.0	33.7	−21.0	----	123	----
		+79.0	56.7	−11.5	46	----	388