

ULTRAVIOLET LIGHT INTENSITY IN PUERTO RICO. II

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In June, 1931, the writer published in collaboration with E. B. McKinley the first paper on Ultraviolet Light Intensity of the Sun in Puerto Rico.¹ In this paper was reported a six-month period beginning October 16th, 1930, and ending March 31st, 1931. The readings indicate a high level of solar ultraviolet light radiation in San Juan.

The work was continued for a five-month period starting April 1st, 1931, to August 31st, 1931. The month of September could not be included, due to the fact that there was stormy weather throughout the month, and there was not one clear day recorded.

In the following tables appear readings of the ultraviolet light intensity of the sun for the months already mentioned:

(Refer to tables on the next pages)

The maximum figure obtained is 10.96 mg. of oxalic acid decomposed per sq. cm. for one hour; this period was on June 18th, 1931. This figure approximates very closely that obtained at The Texas Agricultural Experiment Station, College Station, Texas,² in the summer of 1931, which was 10.81 mg.

SUMMARY

Solar radiation in San Juan, Puerto Rico, as measured by the oxalic-acid uranyl sulphate method was continued for a five-month period beginning April 1st, 1931, and ending August 31st, 1931. The maximum reading was on June 18th, 1931, which reached 10.96 mg. of oxalic acid decomposition.

REFERENCES

1. HERNÁNDEZ, L. G. and MCKINLEY, E. B.: Ultraviolet Light Intensity of the Sun in Puerto Rico. P. R. Jour Pub. Health & Trop. Med. 6: 401.
2. Private communication from Miss Mary Anna Grimes, Texas Agricultural Experiment Station, Texas.

TABLE VIII
APRIL, 1931

April	9-10	10-11	11-12	12-1	1-2	2-3	3-4	Aver. for 7 hrs.	Max.	Min.	Remarks
1.....	5.17	5.62	4.79	4.66	4.35	3.53	5.62	4.82	5.62	3.53	Cloudy
2.....	3.84	4.22	3.84	4.22	6.92	5.29	4.22	4.59	6.92	3.84	Cloudy
3.....	—	—	—	—	—	—	—	—	—	—	Holiday (Good Friday)
4.....	4.60	5.29	7.06	—	—	—	—	5.65	7.06	4.60	Cloudy, rain, Saturday
5.....	—	—	—	—	—	—	—	—	—	—	Sunday
6.....	6.81	8.51	8.19	9.14	8.19	8.25	7.44	8.07	9.14	6.81	Light clouds passing
7.....	7.81	8.06	4.79	6.11	5.99	4.66	0.76	5.45	8.06	0.76	Cloudy and rain
8.....	7.31	9.58	9.89	10.43	9.51	9.83	7.81	9.19	10.43	7.31	Clear
9.....	8.19	4.92	7.31	9.07	8.63	7.31	9.64	8.40	8.02	7.31	Cloudy
10.....	8.25	9.58	9.58	10.50	9.14	9.58	8.00	9.24	10.59	8.00	Clear
11.....	7.44	8.19	5.73	—	—	—	—	7.12	8.19	5.73	Cloudy, Saturday
12.....	—	—	—	—	—	—	—	—	—	—	Sunday
13.....	—	—	—	—	—	—	—	—	—	—	Very cloudy day
14.....	6.99	7.12	7.75	8.40	8.63	8.25	6.62	7.68	8.63	6.62	Light clouds passing
15.....	5.29	6.11	8.19	7.25	6.80	7.25	8.12	7.00	8.19	5.29	Cloudy
16.....	—	—	—	—	—	—	—	—	—	—	Holiday (De Diego)
17.....	6.01	7.06	8.38	7.56	7.69	3.40	2.91	6.14	8.38	2.91	Cloudy
18.....	—	—	—	—	—	—	—	—	—	—	Sunday
19.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain, Saturday
20.....	—	—	—	—	—	—	—	—	—	—	Sunday
21.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
22.....	4.73	5.92	7.75	5.92	6.62	5.80	1.32	5.43	7.75	1.32	Cloudy, rain
23.....	4.35	8.00	8.32	8.25	8.31	3.47	2.41	6.15	8.32	2.41	Cloudy, rain
24.....	6.99	8.25	8.00	8.50	8.19	5.61	1.26	6.68	8.50	1.26	Cloudy, rain
25.....	—	—	—	—	—	—	—	—	—	—	Heavy rain, Saturday
26.....	—	—	—	—	—	—	—	—	—	—	Sunday
27.....	—	—	—	—	—	—	—	—	—	—	Very cloudy
28.....	7.69	7.11	7.31	8.69	6.81	4.44	3.15	6.45	8.69	3.15	Cloudy
29.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
30.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
Averages....	6.34	7.07	7.43	7.71	7.46	6.35	4.86	6.73	8.38	4.42	

TABLE IX
MAY, 1931

May	9-10	10-11	11-12	12-1	1-2	2-3	3-4	Aver. for 7 hrs.	Max.	Min.	Remarks
1...	3.84	6.55	7.12	7.31	8.25	6.30	3.81	6.16	8.25	3.81	Cloudy
2...	—	—	—	—	—	—	—	—	—	—	Saturday
3...	—	—	—	—	—	—	—	—	—	—	Sunday
4...	5.67	7.31	4.28	7.24	7.56	7.37	5.86	6.47	7.56	4.28	Cloudy
5...	3.34	4.28	5.04	4.98	6.55	7.07	6.17	5.34	7.07	3.34	Cloudy
6...	7.37	7.75	7.69	6.36	8.41	7.26	4.73	7.08	8.41	4.73	Cloudy noon
7...	7.12	6.99	6.69	1.70	3.62	3.62	3.40	4.73	7.12	3.70	Rain all day
8...	7.56	6.99	4.03	7.06	9.51	9.13	5.54	7.11	9.51	5.54	Light clouds passing
9...	6.69	6.93	7.18	—	—	—	—	6.93	7.18	6.69	Cloudy, Saturday
10...	—	—	—	—	—	—	—	—	—	—	Sunday
11...	7.39	6.99	8.57	8.06	8.69	3.91	0.82	6.34	8.69	0.82	Cloudy
12...	6.68	6.99	8.44	7.18	9.14	6.62	5.67	7.24	9.14	5.67	Light clouds passing
13...	6.69	3.04	4.65	6.49	4.54	5.67	7.06	5.44	7.06	3.03	Cloudy
14...	6.74	7.18	8.13	8.13	6.93	8.06	6.90	7.45	8.13	6.74	Clouds passing
15...	5.86	6.97	6.62	5.67	8.40	7.56	8.06	7.02	8.40	5.67	Clouds passing
16...	6.17	6.36	8.13	—	—	—	—	6.88	8.13	6.17	Light clouds passing
17...	—	—	—	—	—	—	—	—	—	—	Sunday
18...	5.23	7.11	8.51	8.63	5.04	3.97	0.82	5.61	8.63	0.82	Cloudy, rain
19...	7.43	7.50	9.83	9.20	9.26	9.01	8.07	8.61	9.83	7.44	Clear
20...	6.81	7.94	8.44	9.07	8.69	5.80	6.93	7.66	9.07	5.80	Cloudy afternoon
21...	—	—	—	—	—	—	—	—	—	—	Rain all day
22...	5.36	7.56	8.63	8.50	8.50	6.99	1.20	6.69	8.63	1.20	Cloudy
23...	7.06	8.06	7.75	—	—	—	—	7.62	8.06	7.06	Saturday
24...	—	—	—	—	—	—	—	—	—	—	Sunday
25...	—	—	—	—	—	—	—	—	—	—	Cloudy, rain all day
26...	—	—	—	—	—	—	—	—	—	—	Cloudy, rain all day
27...	—	—	—	—	—	—	—	—	—	—	Cloudy, rain all day
28...	—	—	—	—	—	—	—	—	—	—	Cloudy, rain all day
29...	3.34	4.28	5.04	6.49	8.50	8.06	6.17	7.19	8.50	3.34	Holiday, Memorial Day
30...	—	—	—	—	—	—	—	—	—	—	Sunday
31...	—	—	—	—	—	—	—	—	—	—	—
Averages....		6.23	6.67	7.09	7.00	7.59	6.68	5.08	6.71	8.29	4.41

TABLE X
JUNE, 1931

June	9-10	10-11	11-12	12-1	1-2	2-3	3-4	Aver. for 7 hrs.	Max	Min.	Remarks
1	8.88	10.02	9.89	8.41	9.26	8.88	8.63	9.28	10.02	8.41	Clouds passing by
2	9.01	10.02	10.08	10.71	9.40	9.01	8.40	9.51	10.71	8.40	Clear
3	5.67	8.70	9.89	10.71	8.50	8.50	6.50	8.35	10.71	5.67	Clear
4	-	-	-	-	-	-	-	-	-	-	Very cloudy
5	-	-	-	-	-	-	-	-	-	-	Cloudy, rain all day
6	-	-	-	-	-	-	-	-	-	-	Very cloudy, Saturday
7	-	-	-	-	-	-	-	-	-	-	Sunday
8	-	-	-	-	-	-	-	-	-	-	Very cloudy
9	7.62	6.43	7.50	7.81	9.17	6.74	6.11	7.34	9.17	6.11	Light clouds passing
10	6.99	8.00	7.31	8.19	7.62	7.18	2.84	6.87	8.19	2.84	Cloudy
11	5.80	7.12	6.87	9.83	6.11	7.88	5.29	6.98	9.83	5.29	Cloudy
12	3.34	8.06	9.88	10.14	9.40	9.13	8.63	8.36	10.14	3.34	Cloudy
13	7.56	6.99	2.84	-	-	-	-	5.79	6.99	2.84	Cloudy, rain, Saturday
14	-	-	-	-	-	-	-	-	-	-	Sunday
15	6.74	8.19	7.56	8.69	7.37	7.67	6.33	7.50	8.69	6.74	Clouds passing
16	7.62	8.70	6.99	6.62	8.41	9.01	8.3	7.99	9.01	6.62	Clouds passing
17	6.45	7.60	6.36	9.58	8.47	8.10	6.30	7.85	9.58	6.30	Clouds passing
18	6.18	7.69	6.93	10.96	7.43	6.49	5.43	7.30	10.96	5.43	Clouds passing
19	6.62	6.93	6.99	9.07	6.55	7.06	7.26	7.21	9.07	6.62	Clouds passing
20	-	-	-	-	-	-	-	-	-	-	Rain, Saturday
21	-	-	-	-	-	-	-	-	-	-	Sunday
22	-	-	-	-	-	-	-	-	-	-	Rain
23	-	-	-	-	-	-	-	-	-	-	Rain
24	9.01	10.02	10.18	10.92	9.40	9.01	8.63	9.01	10.92	8.63	Clear
25	4.28	3.04	3.34	0.76	1.20	3.40	5.67	3.09	5.67	0.76	Cloudy, rain
26	3.84	4.92	0.82	0.2	1.70	1.62	0.82	2.07	4.92	0.82	Rain, Saturday
27	-	-	-	-	-	-	-	-	-	-	Sunday
28	-	-	-	-	-	-	-	-	-	-	Cloudy
29	5.80	6.93	6.99	8.13	8.63	6.49	5.67	6.94	8.63	5.67	Cloudy
30	6.18	6.43	7.56	9.07	6.55	5.83	1.20	6.11	9.07	1.20	Cloudy
Averages....	6.53	7.54	7.21	8.26	7.36	7.17	6.02	7.08	9.01	5.09	

TABLE XI
JULY, 1931

July	9-10	10-11	11-12	12-1	1-2	2-3	3-4	Aver. for 7 hrs.	Max.	Min.	Remarks
1.....	3.91	4.54	3.84	3.15	5.11	6.80	6.17	4.78	6.90	3.15	Cloudy, rain
2.....	5.80	6.80	7.18	7.12	7.18	7.88	5.22	6.74	7.88	5.22	Cloudy
3.....	5.70	8.30	7.12	8.25	8.95	8.19	6.24	7.63	8.95	5.70	Cloudy
4.....	—	—	—	—	—	—	—	—	—	—	Holiday, Saturday
5.....	—	—	—	—	—	—	—	—	—	—	Sunday
6.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
7.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
8.....	3.34	3.84	2.84	6.49	7.56	7.07	5.29	5.79	7.56	2.84	Cloudy
9.....	4.70	7.40	3.74	2.71	5.10	6.62	6.30	5.23	7.40	2.71	Cloudy
10.....	6.20	7.94	7.31	8.88	9.39	7.94	6.61	7.75	9.39	6.20	Cloudy
11.....	8.88	10.02	9.83	—	—	—	—	9.57	10.02	8.88	Saturday
12.....	—	—	—	—	—	—	—	—	—	—	—
13.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
14.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
15.....	7.06	8.82	7.37	8.69	8.31	8.44	6.80	7.92	8.82	6.80	Cloudy
16.....	5.80	3.04	4.65	3.34	3.15	4.70	2.07	3.82	5.90	2.07	Cloudy, rain
17.....	—	—	—	—	—	—	—	—	—	—	Holiday
18.....	7.50	8.19	7.31	—	—	—	—	7.66	8.19	7.31	Cloudy, Saturday
19.....	—	—	—	—	—	—	—	—	—	—	Sunday
20.....	5.29	7.31	7.31	8.95	7.50	6.05	5.86	6.89	8.95	5.29	Cloudy
21.....	6.81	7.31	7.37	6.93	8.00	7.18	5.54	7.02	8.00	5.54	Cloudy
22.....	3.84	4.73	5.72	7.56	8.25	8.63	7.94	8.66	8.63	3.84	Cloudy
23.....	6.55	7.18	8.01	6.99	8.01	7.18	8.38	7.47	8.38	6.55	Cloudy
24.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
25.....	—	—	—	—	—	—	—	—	—	—	Sunday
26.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
27.....	—	—	—	—	—	—	—	—	—	—	Holiday
28.....	7.62	8.06	9.89	10.02	9.40	6.45	3.84	7.89	10.02	3.84	Cloudy
29.....	—	—	—	—	—	—	—	—	—	—	Rain
30.....	4.35	5.92	7.31	6.05	7.67	6.93	6.05	6.32	7.67	4.35	Cloudy
31.....	4.73	4.92	7.06	3.84	5.11	5.48	6.30	5.34	7.06	3.84	Cloudy
Averages....	5.77	6.72	6.69	6.59	7.24	7.02	5.90	6.72	8.09	5.04	

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TABLE XII
AUGUST, 1931

August	9-10	10-11	11-12	12-1	1-2	2-3	3-4	Aver. for 7 hrs.	Max.	Min.	Remarks
1.....	3.84	5.79	5.82	—	—	—	—	5.15	5.82	3.84	Cloudy, Saturday
2.....	—	—	—	—	—	—	—	—	—	—	Sunday
3.....	—	—	—	—	—	—	—	—	—	—	Very cloudy
4.....	4.03	6.93	8.19	8.51	8.71	8.13	7.06	7.36	8.71	4.03	Cloudy
5.....	7.75	4.41	9.76	10.71	8.12	6.61	7.25	7.80	10.71	4.41	Cloudy
6.....	7.62	8.82	9.87	3.60	4.20	4.40	6.50	6.43	9.87	4.20	Cloudy
7.....	7.50	8.70	9.87	10.34	9.07	8.38	7.56	8.77	10.34	7.50	Clear
8.....	5.67	5.92	7.37	—	—	—	—	6.32	7.35	5.67	Saturday
9.....	—	—	—	—	—	—	—	—	—	—	Sunday
10.....	8.88	9.58	9.62	10.02	9.83	8.78	7.62	9.19	10.02	7.62	Clear
11.....	—	—	—	—	—	—	—	—	—	—	Hurricane passing 250 miles away, rain
12.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
13.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
14.....	—	—	—	—	—	—	—	—	—	—	Hurricane passing 225 miles away, rain
15.....	—	—	—	—	—	—	—	—	—	—	Cloudy, rain
16.....	—	—	—	—	—	—	—	—	—	—	Sunday
17.....	—	—	—	—	—	—	—	—	—	—	Hurricane passing 150 miles away, rain
18.....	2.71	4.60	7.10	9.82	7.80	7.70	6.30	6.57	9.82	2.71	Cloudy
19.....	5.47	8.40	9.10	9.70	8.40	5.70	5.10	7.41	9.70	5.10	Cloudy
20.....	6.60	8.10	9.45	10.59	9.00	8.40	6.60	8.39	10.59	6.60	Clear
21.....	8.00	9.06	9.76	10.14	9.30	8.25	7.60	8.87	10.14	7.60	Clear
22.....	8.82	9.06	9.37	—	—	—	—	9.08	9.37	8.82	Saturday
23.....	—	—	—	—	—	—	—	—	—	—	Sunday
24.....	6.20	7.69	8.88	9.70	8.95	7.18	6.24	7.83	9.70	6.20	Clear
25.....	7.62	8.06	9.14	9.62	9.39	8.70	7.25	8.54	9.62	7.25	Clear
26.....	8.17	8.19	9.70	10.59	9.82	9.01	8.63	9.15	10.59	8.17	Clear
27.....	8.06	8.25	9.25	10.02	9.70	9.10	8.10	8.92	10.02	8.06	Clear
28.....	8.06	9.52	10.18	10.71	9.82	8.88	7.60	9.26	10.71	7.60	Clear
29.....	—	—	—	—	—	—	—	—	—	—	Cloudy, Saturday
30.....	—	—	—	—	—	—	—	—	—	—	Sunday
31.....	4.70	7.40	8.38	9.14	8.40	7.31	5.92	7.32	9.14	4.70	Cloudy
Averages....	6.65	7.69	8.93	9.54	8.70	7.76	7.02	7.90	9.56	6.11	