India. Meteorological department.
Meteorological organisation for airmen. New Delhi. 1936. 51 p. fold. map, tables. 24½ cm. (M. O. A. pamphlet.)

Jelinek, A.
Beiträge zur Mechanik der periodischen Hangwinde. Köthen. 1937. p. 60–84. figs., diagrs. 25½ cm. [At head of title: Sonderdruck aus "Beiträge zur physik der freien Atmosphäre," 24 (1937).]

——— Über den thermischen Aufbau der periodischen Hangwinde. Köthen. 1937. p. 85–97. figs., tables, diagrs. 25½ cm. [Sonderdruck aus "Beiträge zur Physik der freien Atmosphäre," 24 (1937).]

Kibel, I.
Mathematical theory of front shifting in the atmosphere. Moscow. 1937. p. 429–431. 26 cm. [Comptes rendus (doklady) de l'académie des sciences de l'URSS. 1937. v. XIV, No. 7.]

Kimball, James H.
Weather profit. New York. 1937. p. 106–110. 30 cm. [Extract from American magazine, February, 1937.]

Knoche, Walter.
Der Einfluss von Vegetationsbranden auf die Witterung. Braunschweig. 1937. p. 243–254. tables, diagrs. 30 cm. [Sonderdruck aus der "Meteorologischen Zeitschrift," Heft 7, 1937.]

Kotter, Lillian, & Washburn, Clara M.
Aviation (grade III). Weather (grade III.) New York City. [n. d.] 18 p. 23 cm. [Teachers' lesson unit Series, No. 78.]

Kottwitz, Gerh.
Der Schwarzwald im Regenwetter. Tübingen. 1935. 24 p. figs., maps, tables. 24½ cm.

Krick, Irving P.
Forecasting the dissipation of fog and stratus clouds. Easton, Pa. 1937. p. 366–371. diagrs. 30 cm. [Repr.: Journal of the aeronautical sciences. Vol. 4, No. 9, July, 1937.]

Krische.
Klimatische Grundlagen des Ernte-Risikos bei verschiedenen Feldfrüchten. 1 p. 29½ cm. (Photostated.)

Messent, Claude J. W.
The weather vanes of Norfolk and Norwich. Norwich. 1937. 127 p. illus. 18½ cm.

Richter, Konrad.
Die Eiszeit in Norddeutschland. Berlin. 1937. vii, 179 p. figs., maps, tables, diagrs. 23 cm.

Sigma xi.
Sigma xi half century record and history, 1886–1936; compiled by Henry Baldwin Ward & Edward Ellery . . . Schenectady, N. Y. [1936]. xviii, 1208 p. front., illus. (facsims.), 2 pl. (ports.), diagr. 24 cm. [Records achievements, scientific and otherwise, of members of Sigma xi.]

Thompson, W. R.
Moisture and farming in South Africa. South Africa, Central news agency, ltd. 1936. 260 p. pl., tables, diagrs. (fold.) 22 cm.

Tu, Chang-Wang.
Climatic provinces of China. Nanking. 1936. 22 p. maps (part. fold.), tables, diagrs. 26 cm. (Memoir of the National research institute of meteorology. No. 8.)

U. S. Bureau of the census.
United States census of agriculture: 1935. Reports for states with statistics for counties and a summary for the United States. . . Wash. 1936. 1 v. maps, tables, form. 30 cm.

U. S. Great plains committee.
The future of the great plains. Message from the President of the United States transmitting the report of the Great plains committee under the title "The future of the great plains." Wash. 1937. 194 p. incl. illus., maps., charts, tables, diagrs., form, front., plates. 27 cm. (75th Cong., 1st sess. House. Doc. 144.)

SOLAR OBSERVATIONS

SOLAR RADIATION MEASUREMENTS DURING DECEMBER 1937

By IRVING F. HAND

For a description of instruments employed and their exposures, the reader is referred to this REVIEW, page 418.

Table 1 shows that solar radiation intensities averaged above normal for the month at Washington and Lincoln, and close to normal at Madison and Blue Hill.

Table 2 shows an excess in the amount of total solar and sky radiation received on a horizontal surface during December at all stations with the exception of Twin Falls, Miami, Riverside, Blue Hill, Ithaca, and Friday Harbor. The percentage departures for the year show that all stations had an excess of radiation with the exception of Twin Falls, Miami, Riverside, San Juan, Ithaca, and Friday Harbor.

No polarization observations were made during December at Madison owing to continual snow and ice cover.

TABLE 1.—*Solar radiation intensities during December 1937*

[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 mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	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.*
Dec. 1	3.00	0.61	0.70	0.81	1.08	------	------	------	------	------	2.62
Dec. 3	2.26	.92	1.03	1.18	------	------	------	------	------	------	2.26
Dec. 8	2.13	------	------	------	1.25	------	------	------	------	------	2.06
Dec. 9	1.32	.86	.95	1.14	1.34	------	------	1.07	0.82	------	1.60
Dec. 10	1.96	.92	1.05	1.19	1.37	------	------	------	------	------	1.19
Dec. 11	1.78	.72	.84	1.11	------	------	------	------	------	------	1.37
Dec. 14	1.45	------	------	------	1.31	------	------	1.04	------	------	1.52
Dec. 24	2.87	.74	.95	1.10	------	------	------	------	------	------	3.30
Dec. 29	3.63	------	------	------	------	------	------	1.05	------	------	3.30
Means	------	.80	.92	1.09	1.27	------	------	1.05	(.82)	------	------
Departures	------	+.01	+.02	+.04	+.04	------	------	+.01	−.09	------	------

TABLE 1.—*Solar radiation intensities during December 1937*—Con.

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

MADISON, WIS.

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 mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	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.*
Dec. 2	2.26	0.92	1.05	1.18	------	------	------	------	------	------	2.74
Dec. 10	.86	------	1.12	1.14	------	------	------	------	------	------	1.47
Means	------	(.92)	(1.09)	(1.16)	------	------	------	------	------	------	------
Departures	------	−.04	+.01	−.05	------	------	------	------	------	------	------

LINCOLN, NEBR.

Dec. 1	2.74	1.00	1.08	1.27	1.48	------	------	1.27	1.16	------	2.74
Dec. 2	3.63	.81	.93	1.09	------	------	------	------	------	------	4.57
Dec. 5	1.02	1.17	1.28	1.41	------	------	------	1.37	1.22	1.09	.74
Dec. 6	.86	1.07	------	1.23	------	------	------	------	------	------	.81
Dec. 7	2.49	------	------	1.15	------	------	------	------	------	------	.96
Dec. 8	.71	1.03	1.06	------	------	------	------	------	------	1.00	.79
Dec. 9	.79	1.17	1.24	1.35	------	------	------	1.33	1.22	1.10	.71
Dec. 10	.79	1.10	1.25	1.39	------	------	------	1.31	1.14	1.01	.74
Dec. 15	3.15	------	------	------	------	------	------	1.10	.99	.91	3.81
Dec. 16	2.62	------	------	------	------	------	------	1.29	1.18	1.09	5.36
Dec. 20	2.36	------	------	------	------	------	------	------	1.02	.96	2.16
Dec. 21	2.62	------	1.08	1.23	------	------	------	1.24	1.08	.94	3.63
Dec. 22	2.74	1.04	1.16	1.29	------	------	------	------	------	------	2.87
Dec. 25	1.88	------	1.18	------	------	------	------	------	------	------	2.62

TABLE 1.—*Solar radiation intensities during December 1937*—Con.

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

LINCOLN, NEBR.—Continued

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 mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	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.*
Dec. 27	3.45	0.97	1.08	1.25	------	------	------	------	1.06	0.91	4.17
Dec. 29	3.15	------	------	------	------	------	------	1.27	------	------	3.81
Dec. 31	3.91	1.41	1.24	1.35	------	------	------	.96	.80	.67	1.96
Means	------	1.05	1.14	1.27	(1.48)	------	------	1.24	1.09	.97	------
Departures	------	+.09	+.04	+.04	+.09	------	------	+.04	+.02	+.01	------

BLUE HILL, MASS.

Dec. 10	2.1	------	------	------	------	------	1.37	1.19	1.04	0.92	1.7
Dec. 11	1.9	0.85	0.98	1.10	1.22	------	1.24	1.05	------	------	1.8
Dec. 12	1.6	.68	.85	.95	1.12	------	1.24	1.05	------	------	1.8
Dec. 13	1.8	.68	.80	1.00	1.30	------	1.20	.95	------	------	1.3
Dec. 14	1.1	1.05	1.19	1.30	1.42	------	1.40	1.21	1.02	.83	1.5
Dec. 15	1.6	------	------	------	------	------	1.24	1.11	.96	------	2.2
Dec. 19	3.8	------	------	------	------	------	1.20	1.18	1.09	.99	4.0
Dec. 27	2.0	.83	1.02	1.21	1.40	------	1.38	1.27	1.19	------	1.9
Dec. 29	2.0	------	------	------	------	------	1.43	1.29	------	------	1.6
Means	------	.82	.97	1.11	1.29	------	1.31	1.14	1.06	.91	------
Departures	------	−.08	−.07	−.12	−.10	------	0	+.04	+.02	−.04	------

*Extrapolated.

TABLE 2.—*Average daily totals of solar radiation (direct+diffuse) received on a horizontal surface*

Week beginning—	Washington	Madison	Lincoln	Chicago	New York	Fresno	Fairbanks	Twin Falls	La Jolla	Miami	New Orleans	Riverside	Blue Hill	San Juan	Friday Harbor	Ithaca	Newport
	Gram-calories per square centimeter																
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Dec. 3	165	120	207	85	125	206	12	152	231	309	168	218	140	394	94	118	118
Dec. 10	158	74	129	61	145	145	8	62	242	287	190	189	174	424	63	112	166
Dec. 17	131	103	142	71	109	160	6	131	262	246	200	241	132	435	86	59	131
Dec. 24 [1]	143	86	173	66	91	171	13	131	230	273	192	232	131	432	55	76	130
	Departures from weekly normals																
Dec. 3	+6	+3	+33	+15	+21	+14	+4	+37	--------	+4	−17	+13	+4	--------	+6	+28	--------
Dec. 10	+21	−38	−35	−17	+41	−31	+3	−52	--------	−18	+24	−7	+43	--------	−9	+25	--------
Dec. 17	−13	−16	−35	−16	+11	+10	0	+13	--------	−30	−24	−8	−7	--------	+15	−28	--------
Dec. 24 [1]	−6	−35	−1	−18	−23	+29	+7	−2	--------	−9	+40	+32	0	--------	−16	−18	--------
	Accumulated departures on Dec. 31																
	+182	+8,913	+5,173	+6,559	+6,930	+8,568	+2,940	−1,904	--------	−9,114	+5,341	−4,361	−2,891	--------	−2,030	−6,720	--------
	Percentage departures for year																
	+.1	+7.5	+3.8	+6.6	+6.7	+5.1	+3.7	−1.3	--------	−6.1	+4.3	−3.8	−1.3	--------	−1.8	−6.3	--------

[1] 8-day mean.