SEVERE LOCAL STORMS, JULY 1942—Continued

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Chouteau County, Mont.	30	6-7 p. m.	[1] 5		1,500,000	Hail	Loss in wheat; path 60 miles long.
Custer County, Mont.	30	P. m.	[1] 1		25,000	do	Loss in crops; path 10 miles long.
Teton County, Mont.	30		[1] 2½		100,000	do	Loss in crops; path 40 miles long.
Wibaux County, Mont.	31	7-7:30 p. m.	[1] 6		200,000	do	Loss in crops.
Fallon County, Mont.	31	8:30-9:30 p. m.	[1] 5		80,000	Heavy hail	Do.
Chouteau County, Mont.	31	P. m.	[1] 5		25,000	Hail	Loss in crops over a path 10 miles long.
Allen County, Ind.	31				5,000	Wind and hail	Trees and buildings damaged; some loss from flooding.

LATE REPORTS FOR JUNE 1942

Hinckley, Minn.	5	6 p. m.	[1] 5		10,000	Thunderstorm and hail.	Crop loss, $5,000; property damage, $5,000.
Watts, Okla., vicinity of	12	11 a. m.			1,700	Wind	Large barn under construction destroyed and many trees blown down.
Anderson, S. C., and vicinity	13	3:45 p. m.			5,000	Thundersquall	Loss in unharvested wheat in the Mountain Creek area; 2 mules killed by falling timber when 2 barns blew down.
Manning, S. C.	13	P. m.			2,000	do	Communication lines, trees, and outbuildings blown down.
Hoisington, Kans., and vicinity.	18	do			75,000	Hail and wind	Wind damage general and especially severe in Hoisington. Greater part of damage from hail. Loss in wheat 70 percent.
Blackwell, Okla., and vicinity.	20-21	11:50 p. m.-12:30 a. m., C. S. T.	[1] 2		2,000	Hail and rain	Property damaged; loss in fruit not given in estimate.

[1] Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR JUNE AND JULY 1942

[Solar Radiation Investigations Section, I. F. HAND in charge]

SOLAR RADIATION OBSERVATIONS

Explanations of the tables, and references to descriptions of instruments, stations and methods of observation, and to summaries of data, are given in the January 1942 REVIEW, p. 20.

Beginning with this issue, total solar and sky radiation data from East Wareham, Mass., will appear in table 2 through a cooperative arrangement between the Weather Bureau and Dr. H. F. Bergman of the Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture. The pyrheliometric equipment, of which he has supervision, is used in research studies that include the photosynthesis which takes place in cranberry bushes beneath varying thicknesses and qualities of snow cover.

The coordinates of this station are as follows: Lat. 41°45′01″ N., longitude, 70°40′08″ W., altitude, 50 feet. East Wareham is near the neck of Cape Cod in the midst of an extensive cranberry bog section. Owing to its proximity to the ocean the immediate area is subject to considerable fog.

TABLE 1.—*Solar radiation intensities during June 1942*

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

Madison, Wis.

Date	Sun's zenith distance										
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	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.*
June 8	8.81				0.84	1.35					10.21
June 12	14.60	0.65	0.74	0.90	1.03						14.10
June 16	7.87			.69	1.01	1.35					9.47
June 21	12.24	.71	.83	.98	1.15	1.36					9.14
June 24	9.47	.74	.86	.99	1.15	1.34					8.48
June 30	14.10	.76	.84	.98	1.13	1.32					12.68
Means		.72	.82	.91	1.05	1.34					
Departures		+.04	0	−.04	0	+.01					

Lincoln, Nebr.

June 13	7.87					1.39	1.17				6.50
June 23	9.83					1.35					10.97
Means						(1.37)	(1.17)				
Departures						(+.01)	(+.07)				

TABLE 1.—*Solar radiation intensities during June 1942*—Continued

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

Albuquerque, N. Mex.

Date	Sun's zenith distance										
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	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.*
June 1	3.45	0.92	1.01	1.14	1.25	1.49	1.30	1.14	0.99	0.92	7.87
June 5	7.04	.88	0.94	1.07	1.22	1.44	1.30	1.10			5.16
June 6	4.75	.90	.99	1.11	1.26		1.27	1.13	.95	.89	4.17
June 7	7.87			1.00	1.18	1.42					7.04
June 8	7.87				1.18		1.20				7.29
June 9	3.30	.89	.96	1.09	1.24	1.45					4.57
June 11	4.57					1.50					4.95
June 12	3.45	.97	1.06	1.18	1.32	1.50	1.32	1.19	1.07	1.01	4.17
June 13	6.02					1.44	1.17				7.87
June 16	3.63					1.44					4.75
June 18	4.75							1.16	1.02	.96	6.50
June 19	4.57	.95	1.04	1.15	1.31	1.51	1.30	1.15			5.16
June 20	3.00		1.11	1.19	1.35	1.52	1.31	1.20	1.06	1.00	4.17
June 21	3.15	1.00	1.08	1.19	1.33	1.50	1.29				4.57
June 22	4.75		1.01	1.08		1.37	1.10	0.91			10.57
June 23	10.97		.75	0.90	1.11	1.35	1.08		.77	.68	7.04
June 24	7.57		.95	1.05	1.19	1.44					3.63
June 25	3.81	.96	1.02	1.16	1.27						4.95
June 26	4.57	.89	.97	1.10	1.27	1.45					4.57
June 27	3.81		.96	1.08	1.20	1.43	1.20	1.03	.90	.83	4.57
June 28	3.15		1.06	1.18	1.32	1.51	1.29	1.16	1.02	.95	3.45
June 29	2.26	.92	.99	1.11	1.27		1.31	1.13			3.45
Means		.93	.99	1.10	1.25	1.46	1.25	1.12	.97	.90	
Departures		+.03	+.01	+.02	+.02	+.01	+.01	+.02	0	−.01	

Blue Hill, Mass.

June 5	16.3							0.84	0.66	0.55	13.1
June 6	16.3	0.81	0.84					.54			15.7
June 8	19.5					1.24	0.93	.68	.53	.40	15.7
June 9	14.6	.57	.63				.62	.41	.27	.18	13.6
June 10	11.3					1.13	.97				18.7
June 12	24.0				1.01						25.6
June 18	11.3						1.02	.79	.63		14.1
June 19	12.3				.85		.84	.56	.39	.27	14.6
June 20	18.8				.93		.85	.57	.37	.28	16.3
June 24	13.1					1.36	1.08	.81	.63	.49	13.1
June 25	12.6						1.02	.85	.65	.56	14.1
June 26	14.1	.82	.91	1.01	1.15						14.1
June 27	15.7					1.07	.63				17.5
June 30	18.8						.81				17.5
Means		.73	.79	(1.01)	.99	1.20	.88	.67	.52	.39	
Departures		+.05	0	(+.07)	−.06	−.10	−.16	−.19	−.10	−.06	

*Extrapolated.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct and diffuse) received on a horizontal surface*

[Gram-calories per square centimeter]

Date	Washington	Madison	Lincoln	Chicago	New York	Fresno	Fairbanks	Nashville	Twin Falls	New Orleans	Riverside	Blue Hill	Friday Harbor	Ithaca	Newport	State College	Put in Bay	San Juan u. v. below 3132 Å	East Wareham
1942	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*millical.*	*cal.*
June 4	500	463	680	587	104	707	--------	561	714	14	677	215	819	407	399	469	633	164	324
June 5	713	598	522	597	708	718	--------	614	692	309	598	496	662	771	597	812	717	189	416
June 6	644	507	510	553	583	751	--------	594	632	242	577	542	174	704	716	728	517	66	693
June 7	618	138	552	182	472	742	--------	671	513	--------	465	277	320	239	522	387	88	142	424
June 8	282	703	252	449	441	729	--------	466	675	--------	609	521	262	776	402	569	683	202	414
June 9	290	613	354	529	685	746	--------	348	662	250	536	618	271	715	703	587	552	416	689
June 10	238	521	388	396	480	749	--------	491	760	602	544	667	282	685	779	286	501	264	707
Mean	**469**	**506**	**465**	**470**	**496**	**734**	**583**	**535**	**664**	**426**	**572**	**476**	**399**	**614**	**588**	**548**	**527**	**206**	**524**
Departure	−40	−7	−67	−6	+2	+63	+86	--------	+78	−36	+42	−45	−195	+86	+46	+58	--------	--------	--------
June 11	383	243	664	282	365	728	--------	627	705	448	568	536	589	415	621	424	577	398	607
June 12	564	561	572	481	214	744	--------	183	731	493	390	560	640	441	414	506	298	330	597
June 13	409	255	676	253	460	737	--------	330	605	522	638	542	710	338	648	393	601	149	597
June 14	615	801	618	831	113	726	--------	696	602	605	506	475	89	94	346	332	277	243	339
June 15	738	533	386	521	719	692	--------	502	407	582	419	220	473	814	281	836	671	98	305
June 16	582	566	216	685	738	766	--------	236	704	505	577	246	516	605	529	508	230	212	359
June 17	517	355	373	445	173	750	--------	543	740	459	612	108	600	99	453	128	586	450	--------
Mean	**544**	**473**	**501**	**500**	**397**	**735**	**502**	**445**	**642**	**516**	**530**	**384**	**517**	**401**	**470**	**447**	**463**	**275**	**467**
Departure	+42	−33	−28	+35	−91	+42	−2	--------	+25	+51	−40	−92	−29	−101	−112	−35	--------	--------	--------
June 18	682	565	544	393	543	755	--------	550	688	397	592	300	672	699	420	712	570	502	252
June 19	381	479	664	413	505	777	--------	572	694	198	561	595	794	604	631	648	583	263	578
June 20	615	270	503	183	657	774	--------	622	712	190	623	572	608	778	713	609	564	246	582
June 21	677	683	397	578	316	760	--------	527	744	--------	668	116	790	361	134	361	595	250	187
June 22	395	719	655	698	286	750	--------	351	731	--------	661	452	677	350	480	166	425	259	437
June 23	626	378	516	386	472	750	--------	647	733	--------	670	244	554	594	304	750	487	393	229
June 24	645	639	501	432	591	757	--------	599	680	570	684	657	556	454	686	512	653	258	711
Mean	**574**	**533**	**540**	**440**	**481**	**760**	**698**	**553**	**712**	**338**	**635**	**419**	**664**	**548**	**481**	**537**	**554**	**327**	**425**
Departure	+77	−2	−33	−58	−13	+44	+170	--------	+34	−115	+39	−127	+61	+28	−60	+20	--------	--------	--------
June 25	718	120	322	224	584	743	--------	627	179	586	683	519	591	722	714	778	602	369	659
June 26	212	208	346	168	315	748	--------	375	536	443	650	584	636	470	660	128	375	139	627
June 27	94	524	627	635	268	736	--------	568	557	508	619	561	683	685	465	109	618	170	423
June 28	436	579	322	630	486	737	--------	604	737	513	662	422	713	729	433	376	568	133	457
June 29	530	644	546	643	458	723	--------	436	734	372	654	577	771	714	578	573	588	144	530
June 30	658	697	593	722	545	718	--------	497	735	281	598	587	744	610	656	667	567	167	621
July 1	365	713	626	448	278	700	--------	316	674	--------	622	443	740	360	612	195	482	115	615
Mean	**430**	**498**	**483**	**496**	**419**	**729**	**377**	**489**	**593**	**450**	**641**	**528**	**697**	**613**	**588**	**404**	**543**	**192**	**562**
Departure	−96	−37	−104	+26	−67	+31	−79	--------	−36	+4	+60	+28	+78	+128	+25	−84	--------	--------	--------

ACCUMULATED DEPARTURES ON JULY 1, 1942

	+2219	**−3661**	**−5523**	**+3080**	**−1288**	**+1631**	**−2317**	--------	**−1183**	**+7406**	**+6510**	**−5600**	**−791**	**−378**	**−2261**	--------	--------	--------	--------