VIII. METEOROLOGICAL ABSTRACT *for the YEARS 1797, 1798, and 1799. Communicated by JOHN PLAYFAIR, F. R. S. EDIN. and Professor of Mathematics in the University of Edinburgh.*

[*Read at the Meetings in Jan. 1798, 1799, & 1800.*]

IN drawing up this abstract, I have somewhat enlarged the plan followed in those formerly communicated to the Society. In order to represent more accurately the progress of the seasons, every month is here divided into three parts, and the state of the barometer and thermometer is given for each of these divisions.

IN the tables, therefore, that follow, the first column contains the greatest height of the barometer for each of the above divisions; the second the least; the third the mean; and the fourth the temperature of the air in the room where the barometer is kept; the fifth and sixth columns shew the greatest height of the thermometer in the air that was observed during the ten days to which the numbers refer; the next three give the mean heights as observed at three different times every day, viz. at 8 in the morning, 10 in the evening, and, as nearly as can be judged, when the day is warmest, that is, some time between mid-day and 3 in the afternoon. The mean of all these three is taken for the mean temperature of the day, which being computed for each day, the mean of all these mean temperatures is set down as the medium temperature of the air for every one of the
thirty-six

thirty-six divisions of the year. The mean of the three divisions of every month is given in the next column, under the title of the mean temperature of the month.

THIS arrangement of the meteorological abstract has been adopted, as exhibiting the variations both of the barometer and thermometer, and also their mean state, without either entering into particulars too minutely, or abstracting from them too much.

IT is presumed that the mean temperatures, which are the points most difficult to be ascertained, are given with tolerable exactness, as they are deduced from three observations made every day, of which the first, that at 8 A. M. is itself not far from the medium temperature of the whole day, and the other two are as near as circumstances will allow, to the two extremes of greatest heat and greatest cold.

THE barometer of which the heights are here given, is the same that was used formerly, (See *Transactions of the Royal Society of Edinburgh*, Vol. IV. p. 213.) ; but in May 1798 its place was changed from Windmill Street to Buccleugh Place, about 130 yards farther to the south; 3 feet lower than before, or about 262 above the level of the sea. The thermometer is shaded from the sun, exposed to the north, and about 30 feet from the ground: At this height it often stands at 33 or even 34 degrees, when a slight frost is felt on the surface.

METEO-

METEOROLOGICAL TABLE FOR 1797.

		Greatest Height of Barometer.	Least Height of Bar.	Mean Height of Bar.	Mean Temperature of Merc. in Barometer.	Greatest Height of the Thermometer.	Least height of Ditto.	Mean Temp. of the Air 8 A. M.	Mean Temp. of Air when warmed.	Mean Temp. of the Air 10 P. M.	Mean Temp. of every ten days.	Mean Temp. of the Month.	Depth of Rain.	Days of West wind.	Days of East wind.
		Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	°	Inches.		
Jan.	Div. 1.	30.324	29.610	30.0776	48.1	44.5	34.5	39.35	41.10	38.95	39.0	°			
	— 2.	30.096	29.006	29.7866	44.8	51.5	29.25	37.97	40.12	38.75	38.94	40.38	1.320	5	5
	— 3.	29.670	28.918	29.4400	18.4	52.0	35.0	42.66	44.50	42.50	43.22				
Feb.	Div. 1.	30.330	29.294	29.9302	51.3	52.5	33.0	47.40	49.65	40.30	45.78				
	— 2.	30.126	28.820	29.7742	48.2	52.0	32.0	38.15	42.65	39.85	40.22	43.19	.775	10	2
	— 3.	30.290	30.022	30.1385	51.9	52.0	34.0	40.94	47.93	41.87	43.58			5	3
March,	Div. 1.	30.100	29.245	29.7442	45.1	53.0	31.0	37.0	42.33	39.0	39.44			5	5
	— 2.	30.121	29.258	29.6432	48.5	50.25	34.0	39.3	45.75	41.0	42.08	41.85	1.030	2	8
	— 3.	29.922	29.038	29.5281	49.0	54.5	37.75	42.8	47.0	42.5	44.05			7	4
April,	Div. 1.	30.012	29.311	29.6154	49.75	53.0	39.5	43.12	50.0	42.6	45.24			2	8
	— 2.	29.942	29.276	29.5272	50.3	55.50	38.25	45.52	52.50	46.0	48.01	46.51	1.460	5	5
	— 3.	30.104	29.428	29.6442	51.4	60.0	40.50	44.35	50.02	44.5	46.29			5	5
May,	Div. 1.	29.974	28.970	29.4664	52.3	58.5	37.5	46.1	50.12	42.37	46.19			2	8
	— 2.	29.919	29.220	29.5900	54.9	64.0	39.5	52.0	55.70	51.05	52.92	51.69	2.630	8	2
	— 3.	30.116	29.310	29.6654	59.7	72.5	45.75	55.68	60.38	51.84	55.97			10	1
June,	Div. 1.	29.984	29.112	29.6400	57.4	63.0	43.5	52.67	58.05	47.70	52.81			7	3
	— 2.	29.932	29.432	29.7214	58.9	62.5	44.25	53.10	56.75	50.17	53.34	53.65	1.533	1	9
	— 3.	29.886	29.484	29.7300	59.0	63.0	49.5	54.05	58.7	51.67	54.81			2	8
July,	Div. 1.	30.026	29.186	29.5948	62.4	70.5	53.0	57.92	63.10	57.30	59.77			9	1
	— 2.	29.838	29.412	29.6188	65.1	72.5	54.0	62.30	66.85	60.50	63.22	60.59	3.375	9	1
	— 3.	29.832	29.116	29.7218	62.45	66.5	52.0	58.87	61.45	56.09	58.80			6	4
Aug.	Div. 1.	29.764	29.060	29.4368	61.3	65.75	53.5	57.82	63.82	54.80	58.81			10	
	— 2.	29.710	29.220	29.4527	61.4	69.5	53.0	58.55	62.95	56.00	59.17	58.95	4.320	9	1
	— 3.	29.920	29.430	29.6640	62.0	65.0	52.0	58.15	62.34	56.06	58.85			11	
Sept.	Div. 1.	29.996	29.222	29.5799	59.3	63.5	47.5	53.65	58.92	51.12	54.23			7	3
	— 2.	29.664	28.834	29.3406	55.9	61.25	47.5	51.65	56.3	49.85	52.60	53.61	3.265	8	2
	— 3.	29.722	29.326	29.5330	57.1	63.5	45.75	52.32	58.57	51.1	54.0			6	1
Oct.	Div. 1.	30.026	29.454	29.6810	56.45	59.75	45.25	50.82	57.3	49.5	52.81			8	2
	— 2.	30.088	29.020	29.5447	54.37	55.0	34.5	46.42	51.1	45.2	47.84	46.18	3.097	10	
	— 3.	30.088	28.840	29.4912	43.66	47.0	31.5	37.9	43.7	37.8	39.8			5	6
Nov.	Div. 1.	30.270	29.224	29.8077	50.45	55.5	32.5	43.1	51.0	45.3	46.47			8	2
	— 2.	30.203	29.404	29.7576	48.9	51.0	32.0	39.17	44.45	39.4	41.01	40.02	1.245	10	
	— 3.	29.704	28.658	29.4469	44.0	43.5	24.0	32.05	32.9	32.67	32.54			5	3
Dec.	Div. 1.	29.924	28.610	29.2714	43.6	44.0	30.0	35.17	37.57	35.07	35.77			7	3
	— 2.	29.751	28.563	29.0573	46.7	55.0	30.5	40.32	41.57	42.52	41.13	39.87	1.910	10	
	— 3.	30.104	29.080	29.7187	49.5	52.5	33.25	42.84	42.95	41.66	42.72			10	1

Total Rain, 25.360|256|109

Mean Temperature of the Year, 48°.04

1797.

R E M A R K S.

THERE is little in the meteorological history of this year to be added to what is contained in the table. The winter was very open and mild, with a brisk steady wind, for the most part from W. to S. S. W. There was but little frost, and scarcely any snow.

IN March, the east wind began to prevail; a pretty smart frost was felt in the beginning of the month, and some snow fell on the 6th and 7th; the weather was cold for the season till April, when its temperature came up nearly to the mean.

MAY, except at the beginning, when there were some frosty nights, was favourable, and the wind very often from the S. W. June, on the contrary, was cold, with a great prevalence of N. E. wind.

THOUGH in July and August the weather became much better, yet the general temperature of the summer is by no means high; if we reckon the season of vegetation from the vernal equinox to the 20th of October, we shall find the mean temperature during that time $53^{\circ}.32$, which is under the usual quantity.

IN October there was a great fall of rain, with uncommonly high floods. This was preceded by the wind changing on the 19th from the S. W., in which quarter it had been for several weeks, to the N. W., accompanied with frost in the night. On the afternoon of the 20th, the wind came round to N. E. and E., blowing hard, with heavy rain all night. On the 21st, the rivers were much out; the bridge over the Tweed at Kelfo was swept away by the flood. The barometer, which had fallen very low on the 17th, continued so till the 26th.

ON the 22d of November, a very sharp frost set in, with the wind N. and N. W. The thermometer, on the 23d at 10 at night, was at 24° , and nearly the same again on the 29th.

ON the 4th of December, the wind came to the S. W., which put an end to the frost; and about the middle of the month, the weather became uncommonly fine and warm for the season. The thermometer was for some days constantly above 50° , and once as high as 55° , and this not at noon, but at night, on the 18th, with a clear sky, and a high wind from S. S. W. The season, however, could not maintain this temperature long; it became colder on the 21st, and the year ended with a slight frost and the wind from the N. W.

METEO-

METEOROLOGICAL TABLE FOR 1798.

		Greatest Height of Bar.	Least Height of Bar.	Mean Height of Bar.	Mean Temp. of Merc. in Bar.	Greatest Height of the Thermometer.	Least Height of Ditto.	Mean Temp. of the Air 8 A. M.	Mean Temp. of Air when warmest.	Mean Temp. of the Air 10 P. M.	Mean Temp. of every ten days.	Mean Temp. of the Month.	Depth of Rain.	Days of West wind.	Days of East wind.
		Inches.	Inches.	Inches.	Inch.	°	°	°	°	°	°	°	Inches.		
Jan.	Div. 1.	30.303	29.003	29.7334	44.3	47.5	28.5	33.25	37.82	33.42	34.83	38.68	2.310	9	1
	— 2.	29.943	28.785	29.401	46.5	50.5	35.0	39.67	41.65	40.67	40.66			8	2
	— 3.	30.104	28.424	29.4936	48.4	47.75	32.0	40.11	41.5	40.05	40.55			11	0
Feb.	Div. 1.	30.496	29.152	29.968	48.6	50.0	33.75	41.25	44.50	42.65	42.47			9	1
	— 2.	30.024	28.952	29.5955	48.4	51.5	22.25	36.77	41.62	35.55	37.98	39.05	.800	9	1
	— 3.	30.045	28.800	29.505	46.1	45.0	30.0	33.84	39.57	36.72	36.71			7	1
March.	Div. 1.	30.023	29.750	29.8330	51.6	54.0	32.0	44.32	49.85	44.12	46.09			7	3
	— 2.	29.990	28.884	29.6801	47.5	45.25	32.75	34.17	41.0	37.07	37.4	41.15	1.560	4	6
	— 3.	30.101	29.489	29.7886	49.7	50.0	32.50	38.38	44.11	37.38	39.96			5	6
April.	Div. 1.	30.063	28.764	29.4525	50.7	68.5	39.0	47.77	51.11	48.65	49.17			10	0
	— 2.	30.010	29.255	29.6735	55.2	69.0	40.0	49.0	56.6	46.9	50.80	50.51	1.825	4	6
	— 3.	30.062	29.734	29.8794	56.7	63.25	40.5	51.17	55.57	48.0	51.58			3	7
May.	Div. 1.	30.081	29.515	29.8611	57.2	62.0	44.0	49.22	55.4	48.45	51.02			2	8
	— 2.	30.000	29.271	29.6200	58.9	62.5	45.0	51.6	59.1	49.85	58.49	56.21	1.480	8	2
	— 3.	30.300	29.980	30.1097	62.3	73.0	49.75	58.4	64.77	54.15	59.11			6	5
June.	Div. 1.	30.282	29.461	29.9560	61.5	71.5	50.0	57.9	64.3	55.0	59.1			10	0
	— 2.	30.145	29.382	29.8000	64.5	71.25	52.25	61.3	67.3	56.9	61.8	62.24	1.865	8	2
	— 3.	30.041	29.325	29.7956	63.9	73.0	51.75	61.82	66.75	59.05	65.82			9	1
July.	Div. 1.	29.530	29.162	29.3662	63.6	75.0	55.5	62.42	67.45	58.65	62.84			10	0
	— 2.	29.594	29.088	29.3430	62.6	66.75	53.25	58.52	63.77	55.32	59.2	60.58	2.530	7	3
	— 3.	29.930	29.380	29.609	62.9	67.25	52.5	59.72	63.10	56.32	59.71			7	4
Aug.	Div. 1.	30.110	29.374	29.7042	64.2	72.25	51.25	60.75	65.02	57.07	60.95			8	2
	— 2.	29.884	29.364	29.7452	62.1	66.5	49.5	57.8	61.07	55.97	58.28	60.05	2.995	6	4
	— 3.	30.174	29.451	29.9366	65.2	74.5	50.25	60.2	66.0	56.60	60.93			9	2
Sept.	Div. 1.	29.804	29.062	29.4708	63.0	70.0	49.25	59.1	63.45	54.37	58.97			6	4
	— 2.	29.888	28.722	29.5516	63.4	63.0	47.75	56.1	60.72	53.77	56.86	55.91	2.515	5	5
	— 3.	29.728	28.924	29.3570	59.2	65.0	43.0	51.77	55.2	48.72	51.89			8	2
Oct.	Div. 1.	30.110	29.216	29.8207	58.3	62.5	46.75	55.05	58.07	52.32	55.14			7	3
	— 2.	30.010	29.162	29.4818	56.6	59.5	36.5	46.17	51.02	46.55	47.91	48.69	2.105	8	2
	— 3.	29.611	28.975	29.3176	56.7	52.5	41.0	44.9	48.9	46.02	43.04			7	4
Nov.	Div. 1.	29.780	28.588	28.9600	57.0	55.5	35.5	43.52	47.77	43.65	44.98			8	2
	— 2.	30.052	29.438	29.7588	52.5	43.0	29.5	37.02	41.3	37.12	39.76	41.39	2.210	5	5
	— 3.	29.871	28.394	29.2345	52.1	51.5	28.0	37.8	40.97	39.6	39.45			7	3
Dec.	Div. 1.	30.225	28.950	29.6136	53.3	46.5	35.0	37.75	41.4	38.92	39.35			6	4
	— 2.	30.248	29.050	29.5490	51.9	44.5	28.5	38.92	39.77	38.37	39.02	36.84	1.660	1	9
	— 3.	30.428	29.408	30.022	48.0	44.0	18.0	32.04	34.04	32.45	32.17			6	5

Total Rain, 23.855250115

Mean Temperature of the Year, 49°.28

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1798.

R E M A R K S.

THE climate of this part of our Island hardly admits of a finer season than that of 1798. The winter, though not altogether without frost, was on the whole mild and open. In March, indeed, the temperature was rather below the mean; but in April it rose considerably above it, and continued so till the end of October.

IT is remarkable of this year, that the temperature changed much more regularly than usual, increasing gradually till the end of June, and diminishing in the same manner till the end of December, without any considerable retrogradation. The mean temperature is more than $1^{\circ}.5$ above that of an ordinary year; and this difference fell chiefly on the summer months. The mean temperature of June, July and August, was 61° ; the thermometer was often above 70, and never so low as 49 degrees. The vegetating season, reckoned from the 20th of March to the 20th of October, has for its mean temperature $56^{\circ}.17$, considerably above the mean of an ordinary year; and, as along with this the rains fell seasonably, the crops of all kinds were very abundant. The fine weather of this year extended over the whole of Britain, and indeed over the greatest part of Europe.

METEO.

METEOROLOGICAL TABLE FOR 1799.

		Greatest Height of Barometer.	Least Height of Bar.	Mean Height of Bar.	Mean Temperature of Merc. in Barometer.	Greatest Height of the Thermometer.	Least height of Ditto.	Mean Temp. of the Air 8 A. M.	Mean Temp. of Air when warmest.	Mean Temp. of the Air 10 P. M.	Mean Temp. of every ten days.	Mean Temp. of the Month.	Depth of Rain.	Days of West wind.	Days of East wind.
		Inches.	Inches.	Inches.	Inch.	°	°	°	°	°	°	°	Inches.		
Jan.	Div. 1.	30.301	29.744	30.0489	51.6	47.0	28.0	35.32	38.42	36.62	36.78	37.61	.335	8	2
	— 2.	29.940	29.046	29.6598	54.5	49.0	38.5	43.27	45.30	44.10	44.18			10	
	— 3.	29.656	28.854	29.2906	50.1	43.0	25.5	30.30	33.05	32.57	31.9			8	3
Feb.	Div. 1.	29.858	29.251	29.5582	45.3	40.0	21.25	27.32	31.97	27.10	28.8	37.60	.964	2	8
	— 2.	29.769	28.826	29.2571	52.0	45.5	28.0	35.97	40.09	37.47	38.8			5	5
	— 3.	29.814	28.685	29.4205	56.5	57.75	37.5	43.40	48.53	43.60	45.18			8	
March,	Div. 1.	30.148	29.500	29.9034	56.0	54.75	35.5	39.55	43.62	37.45	40.20	38.80	.695	3	7
	— 2.	30.100	29.280	29.5975	55.3	45.0	32.25	36.57	41.08	34.97	37.78			5	5
	— 3.	30.050	29.122	29.5236	52.8	49.0	31.25	37.70	40.09	36.13	38.42			11	
April,	Div. 1.	29.860	29.072	29.4586	49.7	42.5	31.0	34.70	38.67	34.12	35.83	41.91	2.280	1	9
	— 2.	30.080	28.666	29.2674	54.4	50.0	37.5	42.67	47.12	42.02	43.90			6	4
	— 3.	29.986	29.170	29.7251	57.0	63.5	36.75	45.32	50.50	42.20	46.0			6	4
May,	Div. 1.	29.728	29.312	29.5605	55.7	52.0	34.5	42.57	46.62	40.60	43.08	46.88	3.355	2	8
	— 2.	30.182	29.162	29.6807	57.1	61.50	37.5	44.57	50.45	44.05	46.02			5	5
	— 3.	30.000	29.185	29.6777	60.5	66.50	44.0	52.40	58.00	49.25	51.55			11	0
June,	Div. 1.	30.164	28.585	29.6402	61.1	73.75	43.0	56.25	60.37	50.72	55.80	56.36	1.335	6	4
	— 2.	30.260	29.560	29.9839	51.8	66.50	46.5	52.85	58.40	51.02	54.09			2	8
	— 3.	30.100	29.600	29.8625	62.5	76.50	49.0	57.12	65.17	55.32	59.20			6	4
July,	Div. 1.	29.764	29.214	29.7151	62.3	70.5	53.0	60.85	65.65	56.90	61.13	58.09	3.125	8	2
	— 2.	29.676	29.068	29.3556	60.6	66.0	50.0	55.62	60.62	53.45	56.56			5	5
	— 3.	29.776	29.280	29.5629	59.2	67.5	50.75	55.80	59.68	54.34	56.60			4	7
Aug.	Div. 1.	29.884	29.024	29.4773	60.5	66.5	50.5	58.22	59.45	53.90	57.19	56.81	4.450	3	7
	— 2.	29.664	28.760	29.2750	60.5	64.5	50.5	56.45	60.62	53.17	56.74			6	4
	— 3.	29.820	29.110	29.5112	59.8	62.0	49.0	55.63	60.20	53.70	56.51			11	0
Sept.	Div. 1.	30.164	29.860	30.0120	62.5	66.25	51.5	55.50	62.00	54.52	57.34	54.26	4.085	6	4
	— 2.	29.862	28.850	29.3300	60.3	64.0	50.0	53.32	57.17	52.82	54.44			3	7
	— 3.	29.720	28.912	29.2634	58.0	57.5	44.5	50.47	54.62	48.97	51.02			8	2
Oct.	Div. 1.	29.640	29.010	29.3590	56.0	56.25	38.5	46.97	51.80	45.25	48.01	47.01	2.035	8	2
	— 2.	29.786	29.210	29.5028	56.4	56.75	35.0	44.17	52.03	45.75	47.32			6	4
	— 3.	30.012	29.012	29.5438	52.6	55.5	35.5	44.40	48.68	44.1	45.72			5	6
Nov.	Div. 1.	29.542	28.525	29.0798	56.5	52.5	33.0	42.92	46.17	41.0	43.36	41.70	1.645	9	1
	— 2.	30.200	28.923	29.4466	56.5	49.75	34.0	39.80	44.75	39.52	41.02			10	0
	— 3.	30.252	20.464	29.8733	54.9	51.5	33.0	38.72	42.27	41.17	40.72			7	3
Dec.	Div. 1.	30.024	28.950	29.5164	50.0	48.5	35.5	40.47	42.27	39.50	40.74	36.52	1.370	2	8
	— 2.	30.370	29.610	29.9307	51.9	42.5	28.0	35.32	37.37	36.20	36.29			8	2
	— 3.	30.352	29.792	30.1114	49.7	38.0	18.0	30.61	36.20	30.80	32.53			8	3

Total Rain, 25.874 | 211 | 154

Mean Temperature of the Year, 46°.13

1799.

R E M A R K S.

THE year 1799, though it afterwards proved so unfavourable, began with very mild weather. January was uncommonly pleasant, and the wind generally from the S. W.

IN the beginning of February, the wind changed to N. E.; on the 7th, the thermometer stood at 22° ; and the morning of the 9th was remarkable for the most violent storm of wind and snow that is remembered in this country: the wind was a little south of east, and the thermometer as low as 25° . The same day afforded a striking example of the vicissitudes in our climate; for the storm, which began about one in the morning, having continued till noon, the wind soon after came to the S. W.; a thaw began immediately, and in the evening the thermometer stood at 40° . The frost, however, soon returned, but without severity; the weather in the latter end of the month was mild, though the snow, which had been much drifted on the 9th, still lay deep in many places.

ON the 3d of March, the wind came to the N. E., and the series of cold and disagreeable weather began, which extended over almost all the remainder of the year. The winds, during the whole of March, were dry and parching; the nights frosty, and the mean temperature hardly above that of February.

APRIL was equally unfavourable; it snowed frequently, and the wind, though often in the west, was always so far to the north, that it was never accompanied with warmth. Even at the end of the month there were scarce any signs of vegetation, and the trees seemed hardly farther advanced than in February.

THROUGH the whole of May the season continued extremely backward; the wind, whether in the east or the west, was always far to the north, and the medium temperature of the month about 3° lower than in ordinary years.

JUNE was a little more favourable; and indeed the only part of the season that afforded any thing like good summer weather, was the last ten days of June, and the first ten of July. The mean temperature, during that time, was about 60° , and was not so high, by several degrees, for any other period of the same length in the whole summer.

FROM this time the weather became continually colder. There was little sunshine, and a great deal of rain, during the remaining part of July, and the whole of August and September.

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THE month of October was in itself tolerable, and nearly of the usual temperature; but by no means able to make up the deficiencies of the former season. The harvest was not generally got in till the end of November, and, in high grounds, hardly till the end of December.

ONE of the peculiarities of this season was, that the east wind continued to blow very frequently after the solstice, through the whole summer, and always from a northern point. The west winds, also, were generally far to the north, which seldom happens in this climate, from the time of the summer solstice to the setting in of frost in November or the latter end of October.

THE general impression which this year has left on every body's mind is, that it was very rainy; and yet it does not appear, from the register, that more rain fell in 1799 than in ordinary years. The fact is, that the only rainy months were July, August and September, particularly the two latter; in these three the depth of rain was nearly a foot, which is at least double of the usual quantity. This quantity, also, fell not in heavy showers, with intervals of sunshine, as is usual in summer, but in drizzling, long continued rains, with foggy weather, as in winter. Hence the amount of it was very naturally over-rated.

THE mean temperature of the whole year is $46^{\circ}.18$, more than $1^{\circ}.5$ below the usual mean. But the mean temperature of the season of vegetation, computed from the 20th of March to the 20th of October, is no more than $51^{\circ}.27$, almost 5° below that of 1798. This deficiency of temperature may appear at first sight hardly adequate to that deficiency in the crop which is ascribed to it; but it should be considered, that vegetation scarcely proceeds at all with a temperature under 40° , so that this may not improperly be regarded as the point of heat at which vegetation begins, and the boundary, in as much at least, as respects agriculture, between fruitfulness and sterility. Now, 56° is the mean temperature of a good season, in this country, as we know from the instance of 1798, and therefore 16° of heat is the whole distance between the mere germination of vegetables and the fullest maturity they can attain in our climate. A deficiency of 5° , therefore, which is nearly a third of the whole 16° , must necessarily be accompanied with a great shortcoming in the maturity of all vegetable productions.

WHETHER the quantity of the crop may be expected to be proportional to the excess of the mean temperature of the vegetating season above 40° , so that the crop of this year should be to that of the preceding as two to three, or if it must be in a greater or a less ratio, may deserve to be more accurately considered. There is, however, reason to think, that the variations of the crop, at least of the corn crop, will be greater than in proportion to the variations of temperature; for, if the mean heat of the vegetating season were to fall as much below that of 1799, as the heat of 1799 did below that of 1798, it would be reduced to 46° , a temperature so low, as would certainly prevent the ripening of corn altogether.

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By doubling the deficiency of the heat, therefore, we do a great deal more than double the deficiency of the crop, so that the latter varies in a higher ratio than the former.

THE limit at which corn will not ripen, is probably higher than 46° , and may perhaps be stated at 48° . If it be alarming to think that our climate has, in any case, come so near to a line, beyond which the labours of the husbandman are ineffectual, it is comfortable to reflect, that the resources of the country have been able to provide a remedy even for so great an evil, and to avert all its most fatal effects.