

SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

JANUARY 1889.

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ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
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General Summary.—The month was quiet and foggy. Pressure was in excess of the average,* and changes were slight and gradual; its distribution was mainly anticyclonic; generally favourable for North-easterly winds over the southern districts, South-westerly to Westerly in the north. Temperature was rather low over our eastern and midland counties, high elsewhere, and rainfall was below the average except in the extreme western parts of Ireland and Scotland.

Pressure.—*Mean for the Month, at 8 a.m.*, varied from between 30·2 ins. and 30·15 ins. over the Channel and southern counties of England, to about 30·05 ins. over the north of Ireland and the south of Scotland, and to between 29·90 ins. and 29·80 ins. in the north of Scotland and Shetland Islands. It exceeded the average for January* by about three-tenths of an inch over the south of Ireland and south-east of England, and by about two-tenths in the north of Scotland; the mean gradients were slight. *Highest* values recorded varied from 30·4 ins. to 30·6 ins. and more, and occurred very generally between the 24th and 27th, as an anticyclone passed over the Kingdom in a south-easterly direction: *Lowest* occurred in the west and north on the 8th or 9th, but in the southern districts on the 12th; none of the readings (when reduced to sea level) were so low as 29·0 ins. *Range* was moderate.

Depressions.—Those passing near to or over our Islands were neither large nor deep; most of them moved north-eastward, considerably to the westward and northward of the British Islands; a shallow one (Track No. II.†) was developed over Wales late on the 9th, and filled up off our south-eastern coasts next morning; another (No. III.*) advanced over central France from the westward on the 12th, and filled up without reaching Germany.

Anticyclones.—Anticyclonic conditions prevailed over Europe through nearly the whole month. The largest systems were of great intensity; their central parts lay over Russia, where the barometer rose to above 31·0 ins. on the 1st, and again between 11th and 16th; on 15th the highest reading (at Moscow) exceeded 31·2 ins. From these systems a ridge extended westwards, sometimes lying over the British Islands and at others over Germany and France. On 17th another anticyclone approached our western coasts from the Atlantic, and spread eastward over Western Europe, while the Russian system receded. The new system, after lying over or off our western coasts for several days, moved southward, and at 8 a.m. on the 31st lay over Spain.

Wind was chiefly South-westerly and Westerly in the north, variable in the south, mainly North-westerly to North-easterly in the English Channel. In force it was generally light to moderate, except in the extreme north-west and south-west, where moderate to fresh gales occurred frequently. Stornoway reported gales on 19 different days, Mullaghmore on 12, Scilly on 10, Pembroke and Valencia on 8, Roche's Point and Aberdeen on 7 days each. Leith, York, Yarmouth, Cambridge, Oxford, Hawes Junction, Bidston, and Parsonstown experienced no gales, and London only one.

Temperature.—*Mean, at Sea Level*, ranged from 47° at Scilly, and from between 45° and 46° at Land's End, and in extreme south-west of Ireland, to rather below 40° over the counties off Tyrone, Fermanagh, Leitrim and Cavan, to about the same value in east of Scotland, and to between 35° and 36° over Cambridge-shire and west of Norfolk. It was below that of the previous month by about 4° over the greater part of England, but by only 1° over Ireland and greater part of Scotland. It was below the average* by about 1° over the eastern and midland counties of England, above it elsewhere, the excess being less than a degree in Ireland, but amounting to two to three degrees in most parts of Scotland—where South-westerly winds were in excess. *Highest* readings occurred very generally on 18th or 31st, when cyclonic Westerly breezes prevailed over the Kingdom. *Lowest* occurred in Ireland and greater part of Scotland on 2nd or 3rd, in the north and west of Scotland and north-west of England on the 27th; over the greater part of England the cold was greatest between 6th and 8th, when a ridge from the European anticyclone spread westward across this country and France. *Range* was not large, the greatest being 41°, at Churchstoke, and 37° at Loughborough. *Vapour Tension* varied from between 0·24 in. and 0·28 in. at our extreme south-western, western, and north-western stations to between 0·18 in. and 0·20 in. over the midland, eastern, and home counties, and at Aberdeen. *Relative Humidity* was greatest (more than 95%) in the west of Scotland; it was above 90 in most other places, but varied between 85 and 89 in north-east of Scotland, at Bidston, as well as in the south of Ireland, and Channel Islands.

Rainfall was very small over England where many of the aggregates were less than one inch. It was less than the average in the eastern and central parts of Ireland and Scotland also, but largely in excess over the extreme west of both of those countries. The largest amounts were 9·6 in. at Laudale, 8·3 ins. at Valencia, and 6·5 at Killarney. The smallest were 0·56 in. at Hereford, and 0·62 in. at Ingatestone.

Bright Sunshine was deficient in most places. The per-centage recorded was only 5 in London and at Glencarron, 8 at Glasgow, and below 20 in most places. At Plymouth, Hastings, and Durham, however, it was 20, at Marchmont 21, and at Aberdeen and Jersey 27.

* The averages employed are—*Pressure and Temperature*, for the 20 years 1861–80; *Rainfall* for the 20 years 1866–85.

† See Map 2, Plate i.

TABLE I.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Numbers of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 33° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head - - -	29° 826	42° 2	39° 1	45° 0	42° 1	30	26th	50	18th
	Wick - - -	29° 884	41° 1	36° 0	45° 4	40° 7	30	1st, 2nd, 22nd, 27th	57	18th
	Stornoway - - -	29° 859	43° 3	38° 0	46° 7	42° 4	30		52	18th
1. SCOTLAND, E.	Nairn - - -	29° 919	41° 4	35° 3	46° 8	41° 1	26	2nd, 7th, 11th, 2nd	56	18th, 31st
	Aberdeen - - -	29° 997	38° 5	34° 4	44° 8	39° 6	26		58	31st
	Leith - - -	30° 029	40° 6	34° 8	46° 0	40° 4	25	2nd, 3rd	56	18th
2. ENGLAND, N.E.	Shields - - -	30° 074	39° 9	34° 9	44° 9	39° 9	29	3rd, 27th, 28th, 7th	55	18th
	York - - -	30° 098	36° 5	31° 9	43° 2	37° 6	23		53	31st
	Spurn Head - - -	30° 114	37° 8	34° 1	42° 0	38° 1	23	6th	50	31st
3. ENGLAND, E.	Yarmouth - - -	30° 156	36° 2	32° 0	41° 1	36° 6	21	7th, 8th	51	31st
	Cambridge - - -	30° 183	33° 4	28° 4	41° 2	34° 8	14	6th, 7th	54	31st
4. MIDLAND COUNTIES	Loughborough - - -	30° 164	35° 6	31° 2	42° 2	36° 7	18	6th	55	31st
	Oxford - - -	30° 191	35° 0	31° 3	41° 6	36° 5	20	4th, 6th, 7th, 8th.	51	18th, 31st
5. ENGLAND, S.	London - - -	30° 178	35° 5	31° 8	42° 1	37° 0	22	6th, 7th	54	31st
	Dungeness - - -	30° 157	37° 7	33° 4	43° 2	38° 3	20	6th	51	26th
	Hurst Castle - - -	30° 193	38° 7	34° 9	43° 8	39° 4	2	6th	50	18th, 28th, 29th.
6. SCOTLAND, W.	Ardrossan - - -	30° 048	41° 5	37° 1	45° 5	41° 3	28	27th	51	31st
7. ENGLAND, N.W.	Hawes Junction* - - -	28° 853	36° 5	32° 1	40° 0	36° 1	22	3rd, 27th, 28th.	48	31st
	Barrow-in-Furness - - -	30° 112	39° 8	36° 5	43° 7	40° 1	30	27th, 28th	50	31st
	Liverpool - - -	30° 139	38° 6	35° 3	43° 6	39° 5	22	6th	54	18th
	Holyhead - - -	30° 127	43° 5	40° 4	46° 6	43° 5	32	11th	53	31st
8. ENGLAND, S.W.	Pembroke - - -	30° 103	43° 4	40° 5	46° 3	43° 4	33	3rd, 4th	50	18th, 20th, 29th, 30th, 31st.
	Prawle Point - - -	30° 200	41° 5	37° 2	46° 4	41° 8	32	2nd, 13th	53	17th, 28th
9. IRELAND, N.	Malin Head - - -	30° 009	42° 9	39° 4	45° 8	42° 6	34	14th, 15th, 27th.	52	17th, 18th
	Donaghadee - - -	30° 085	41° 3	37° 0	46° 2	41° 6	30	2nd, 5th, 27th, 28th.	55	18th
	Mullaghmore - - -	30° 059	43° 4	38° 8	47° 6	43° 2	30	2nd	54	7th
	Belmullet - - -	30° 067	44° 4	40° 5	48° 1	44° 3	32	13th	52	17th, 18th, 31st.
10. IRELAND, S.	Parsonstown - - -	30° 130	38° 8	34° 5	45° 6	40° 1	22	3rd	54	17th, 18th, 31st.
	Valencia - - -	30° 155	45° 8	41° 1	50° 0	45° 6	29	13th	54	30th
	Roche's Point - - -	30° 150	44° 3	40° 5	48° 5	44° 5	32	3rd	57	31st
CHANNEL ISLANDS	Scilly (St. Mary's) - - -	30° 174	47° 2	43° 6	49° 7	46° 7	39	3rd, 4th, 10th	54	18th, 28th
	Jersey - - -	30° 209	42° 0	37° 9	46° 8	42° 4	28	6th	52	9th, 20th, 31st

* Hawes Junction is .135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, JANUARY 1889.

iii

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of January 1889.

Thunderstorms, and Gales are counted irrespective of the hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.		Date.	WEATHER, No. of Days of							WIND, No. of Observations of								
			Total Fall in the Month.	Maximum Fall in One Day.		Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
			ins.	ins.																	
0.243	90	9.0	3.77	0.43	31st	27	1	0	0	0	25	5	2	0	0	4	7	3	8	4	3
*228	89	6.8	1.78	0.25	18th	19	1	2	0	4	13	5	1	1	0	0	10	5	6	8	0
*269	96	8.7	5.58	0.72	8th	30	2	2	0	0	21	19	0	0	0	0	7	6	9	7	2
*221	86	6.7	0.37	0.17	18th	10	2	0	0	0	10	1	0	0	1	0	1	16	4	1	8
*198	85	6.4	1.03	0.29	8th	16	2	1	0	0	11	7	1	0	0	4	8	9	8	1	0
*215	86	6.1	0.62	0.11	16th	12	0	0	0	4	6	0	1	0	1	1	5	3	9	9	2
*221	91	8.3	1.09	0.36	10th	11	1	0	0	0	18	1	0	1	1	1	4	10	7	5	2
*202	93	7.4	1.15	0.55	9th	11	0	0	0	8	21	0	4	1	2	4	6	2	4	3	5
*206	91	8.4	0.70	0.24	10th	13	0	0	0	0	20	6	1	2	2	1	5	8	8	3	1
*201	94	6.6	0.69	0.26	11th	11	0	0	0	5	12	0	1	3	5	3	3	5	7	4	0
*179	94	7.3	0.77	0.14	12th	12	1	0	0	3	18	0	6	2	1	1	4	8	3	3	3
*193	93	8.2	1.21	0.53	9th	14	0	0	0	5	22	2	2	2	4	7	2	3	4	4	3
*186	91	7.7	0.65	0.28	9th	11	1	0	0	7	22	0	5	3	1	1	5	5	2	4	5
*191	91	8.1	0.96	0.25	9th	11	1	0	0	3	21	1	4	2	1	2	5	4	4	2	7
*202	90	8.2	1.02	0.21	9th	13	0	0	0	1	18	1	4	6	5	2	3	2	4	3	2
*221	94	7.3	0.81	0.47	9th	11	2	0	0	0	10	2	4	9	1	0	2	5	5	5	0
*253	97	6.6	2.30	0.51	9th	19	0	0	0	2	14	1	0	4	3	3	5	6	4	3	3
*212	99	9.3	3.36	1.06	29th	17	1	0	0	1	28	0	3	4	5	1	6	8	2	1	1
*226	93	8.4	1.99	0.54	29th	16	0	0	0	1	20	4	3	8	3	6	3	4	1	3	0
*207	89	8.5	0.72	0.12	30th	14	0	0	0	2	22	0	1	1	4	8	3	4	6	4	0
*253	90	7.6	1.23	0.26	9th, 28th	18	0	0	0	0	14	3	3	3	3	2	5	7	3	3	2
*259	92	7.0	1.41	0.36	11th	15	0	0	0	0	10	8	1	3	6	4	5	3	3	6	0
*236	90	8.0	1.04	0.19	9th	9	0	0	0	0	14	2	8	6	2	2	2	3	4	4	0
*252	91	8.1	2.20	0.33	30th	23	0	1	0	2	21	4	1	0	0	1	11	6	5	7	0
*243	94	6.1	2.40	0.58	8th	20	0	0	0	1	8	2	1	1	0	1	4	12	10	2	0
*245	87	7.7	3.70	0.54	11th	23	1	1	0	2	13	12	2	1	1	3	6	10	5	3	0
*272	93	8.3	5.10	0.83	8th	24	0	0	0	2	22	3	3	0	3	4	5	6	7	3	0
*216	92	7.8	2.09	0.83	11th	20	0	0	0	23	21	0	0	0	0	5	1	2	1	2	20
*269	88	8.1	8.34	2.41	15th	21	0	0	0	0	18	8	5	2	1	5	4	3	4	4	3
*249	85	7.4	3.94	1.06	15th	16	1	0	0	0	15	7	10	2	1	0	3	6	3	6	0
*284	89	8.6	2.14	0.64	11th	15	0	1	0	0	18	10	7	3	5	1	5	3	4	2	1
*225	85	7.5	1.33	0.42	9th	13	0	0	0	4	18	2	2	9	4	3	2	1	2	7	1

barometrical observations at this station are not reduced for altitude.

TABLE II.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of January 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentages of possible Duration.
	Minima.	Maxima.	Max. and Min. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	35.2	16
LAIRG	33.9	44.4	39.2	23	13th	57	18th	18	1.74	0.34	10th	—	—
GLENCARRON	33.5	44.9	39.2	19	3rd	52	18th	24	9.20	1.27	17th	11.7	5
FORT AUGUSTUS	34.1	46.2	40.2	24	and, 10th	55	18th	18	3.23	0.79	18th	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	59.8	27
BRAEMAR	31.8	43.2	37.5	19	2nd	53	18th	18	1.68	0.50	8th	39.3	17
OCHTERTYRE	32.4	46.7	39.6	22	6th	57	18th, 23rd	13	2.18	0.64	8th	—	—
MARCHMONT	33.4	43.5	38.5	26	27th	53	31st	17	0.82	0.10	10th	47.8	21
ALNWICK CASTLE	35.7	43.8	39.8	29	26th, 27th	54	31st	14	1.27	0.20	10th, 30th	—	—
DURHAM	33.1	43.4	38.3	25	3rd	54	31st	14	0.81	0.22	9th	48.3	20
SCARBOROUGH	33.9	42.3	38.1	25	6th	54	31st	15	1.15	0.60	9th	†37.1	15
YORK	*	*	*	*	*	*	*	*	*	*	*	31.1	13
HILLINGTON	29.7	40.3	35.0	15	6th	53	31st	16	0.82	0.18	12th	27.9	11
GELDESTON	31.2	42.4	36.8	18	6th	54	31st	13	0.83	0.25	11th	36.2	14
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	39.3	16
ROTHAMSTED	30.4	40.4	35.4	16	6th	52	31st	14	1.16	0.35	9th	—	—
INGATESTONE	31.0	40.8	35.9	16	6th	52	31st	10	0.62	0.18	12th	—	—
BAWTRY	31.1	42.2	36.7	16	6th	54	18th, 31st	12	1.58	0.70	9th	†24.6	10
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†34.4	14
CHIDDLE	32.2	41.4	36.8	18	6th	54	18th	16	0.97	0.22	19th	—	—
CHURCHSTOKE	31.7	42.7	37.2	14	6th	55	18th	11	0.71	0.15	30th	40.5	16
HEREFORD	31.1	42.6	36.9	19	4th, 5th	55	31st	11	0.56	0.19	9th	—	—
CIRENCESTER	31.1	41.5	36.3	18	4th	50	29th, 31st	14	0.80	0.30	9th	39.8	16
OXFORD	*	*	*	*	*	*	*	*	*	*	*	31.0	12
LONDON	*	*	*	*	*	*	*	*	*	*	*	14.0	5
STRATHFIELD TURGISS	30.2	41.1	35.7	19	6th	53	31st	11	0.80	0.40	9th	—	—
HASTINGS	34.3	43.0	38.7	24	7th	50	28th, 31st	17	1.14	0.25	9th	50.3	20
SOUTHAMPTON	34.0	43.6	38.8	21	6th	54	31st	11	0.81	0.40	9th	41.7	16
STOWELL	33.3	42.1	37.7	25	5th, 6th	52	31st	14	0.90	0.29	9th	47.7	19
LAUDALE	37.4	46.4	41.9	30	11th	55	18th	26	9.59	1.22	28th	—	—
GLASGOW	36.2	44.0	40.1	26	2nd	52	18th, 31st	16	2.07	0.45	28th	19.1	8
GLENLEE	33.5	44.1	38.8	20	27th	54	31st	18	4.55	0.91	8th	—	—
DOUGLAS	37.7	46.3	42.0	29	3rd, 27th	53	31st	15	2.58	0.58	28th	46.4	19
NEWTON REIGNY	32.9	42.6	37.8	22	3rd	52	18th, 31st	13	1.94	0.58	29th	40.6	17
STONYHURST	34.8	42.5	38.7	27	6th	51	18th	13	2.56	0.68	29th	25.5	11
BLACKPOOL	35.0	43.9	39.5	26	6th	50	18th, 25th	11	1.10	0.33	29th	37.8	16
MANCHESTER	34.3	41.9	38.1	24	4th	53	18th	16	1.66	0.47	29th	—	—
LLANDUDNO	38.1	45.5	41.8	31	5th, 27th	54	18th, 29th	15	1.21	0.39	9th	40.5	16
LLANDOVERY	32.7	43.7	38.2	17	3rd	52	31st	17	3.05	0.59	28th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	42.5	17
ARLINGTON	33.8	43.4	38.6	22	6th	51	18th	13	2.68	0.45	29th	—	—
CULLOMPTON	33.1	44.5	38.8	23	4th	54	18th	12	0.92	0.34	9th	44.7	17
FALMOUTH	39.3	46.8	43.1	31	3rd	53	31st	17	2.90	0.96	11th	48.1	18
PLYMOUTH	36.8	45.6	41.2	30	6th	54	31st	14	1.74	0.48	11th	52.3	20
JERSEY	*	*	*	*	*	*	*	*	*	*	*	73.5	27
LONDONDERRY	36.9	45.8	41.4	27	2nd, 7th	53	18th, 31st	23	3.10	0.40	16th	—	—
MARKREE CASTLE	34.3	45.6	40.0	21	2nd	53	31st	21	3.40	0.80	11th	24.8	10
BROOKBOROUGH	32.9	44.2	38.6	21	2nd, 3rd	52	18th, 31st	17	5.25	1.33	11th	—	—
ARMAGH	35.7	45.5	40.6	25	2nd	54	18th	15	2.07	0.76	11th	25.5	11
EDGEWORTHSTOWN	33.5	44.8	39.2	22	2nd, 3rd	53	18th, 31st	23	3.07	0.81	11th	—	—
DUBLIN	38.0	46.8	42.4	27	3rd	56	18th	16	2.21	1.22	11th	35.7	15
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	34.8	14
KILKENNY CASTLE	35.5	45.5	40.5	21	3rd	56	31st	14	2.07	0.58	11th	—	—
WATERFORD	36.7	47.3	42.0	23	3rd	58	31st	13	2.51	0.86	11th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	56.1	22
KILLARNEY	37.1	48.1	42.6	24	3rd	56	31st	23	6.45	1.84	15th	—	—
FOYNES	39.7	47.0	43.4	25	2nd	55	18th	19	3.24	0.87	15th	—	—

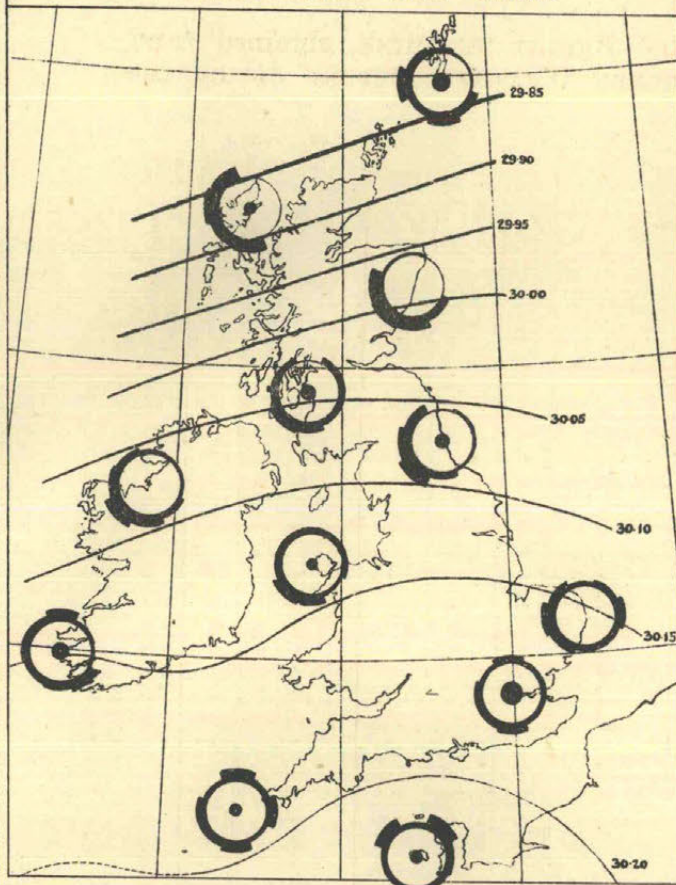
* For information see Table I. † The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry are recorded at Worksop, and those entered to Loughborough at Thurstaston.

MONTHLY WEATHER CHART. JANUARY 1889.

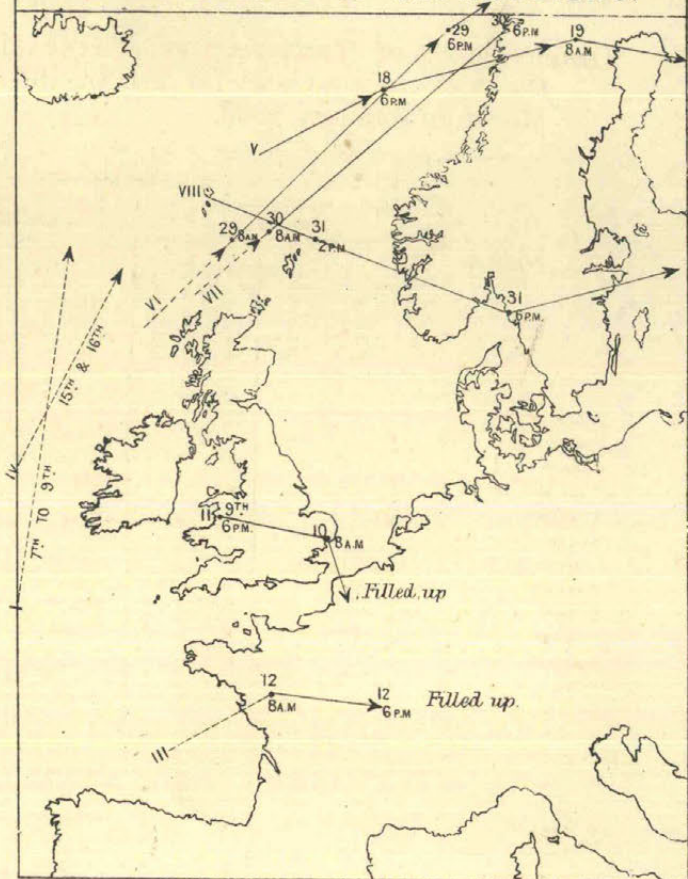
Monthly Summary.

Plate i

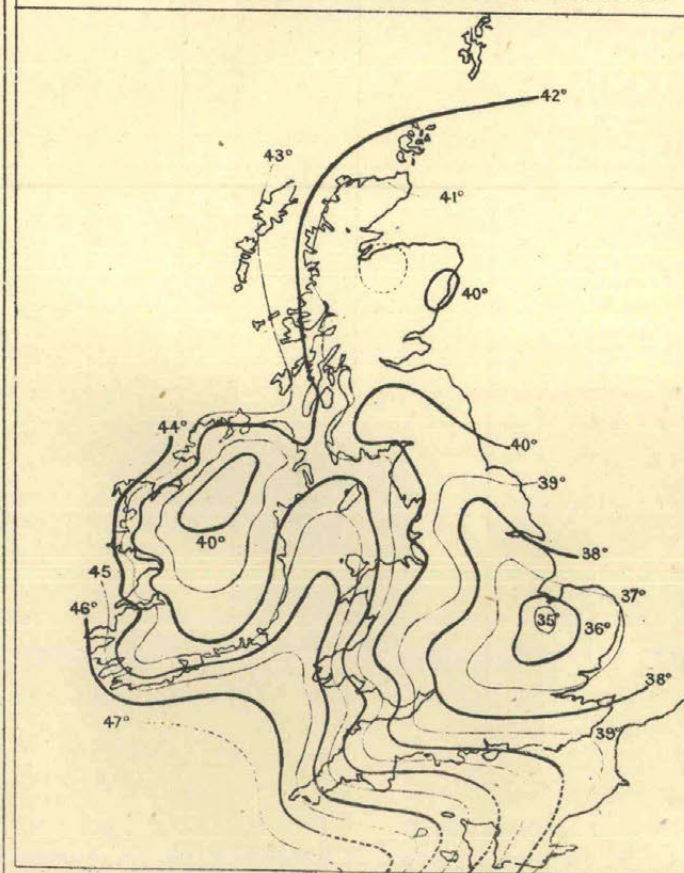
1. BAROMETER AND WIND.



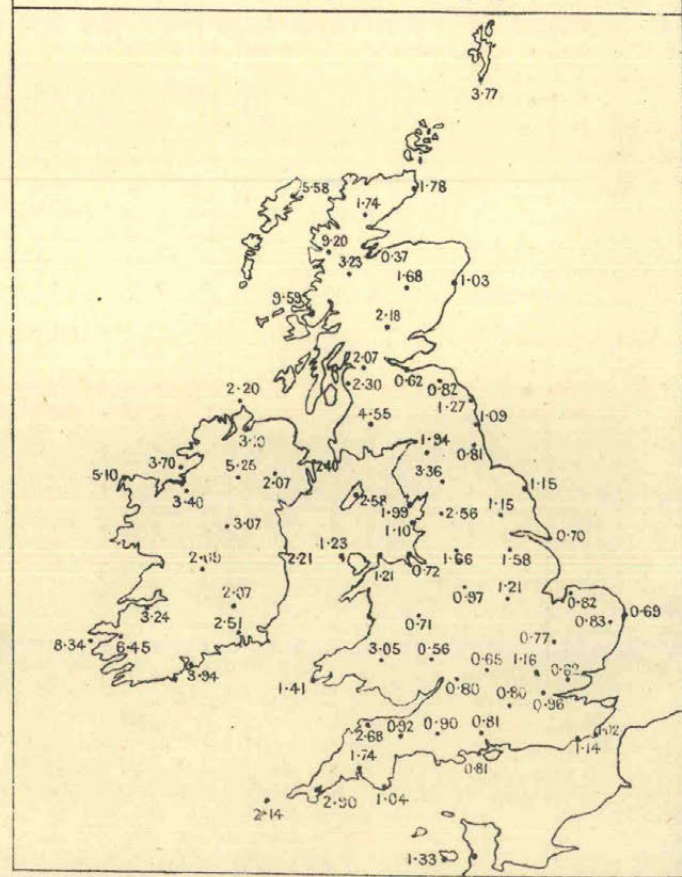
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL



To face page 4.

SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

FEBRUARY 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The first half of the month was very stormy, large and deep depressions passing from north and north-west over the northern and eastern parts of our area, and causing severe North-westerly and Northerly gales, with snow, sleet, hail, and much thunder and lighting in almost all parts of the kingdom. The remainder of the month was quieter. Pressure was high in the south-west, low in the east and north-east; temperature was low generally, but especially in the east of England, and rainfall was less than the average except in the north of Scotland.

Pressure.—*Mean for the Month, at 8 a.m.*, varied from 30·05 ins. and more, over the south-west of Ireland and near the Scilly Islands, to 29·83 ins. at Yarmouth, 29·73 ins. at Wick, and 29·66 ins. at Sumburgh Head. It was lower than that of January at all stations. It was below the average* for February by about 0·12 in. in the east of Norfolk and by about 0·03 in. in the east of Scotland, and the Shetlands, but above the average* by 0·15 in. to 0·20 in. in the south and south-west of Ireland. Gradients were uniform and favourable for North-westerly winds. *Highest* values were recorded—at the northern stations on the 23rd, in the north-west on the 4th, in the south-west and south on the 19th, and varied in value from 30·3 ins. to 30·5 ins. *Lowest* were recorded in the extreme north on the 2nd, when a large depression was approaching the Shetlands, and the barometer fell to about 28·3 ins.; at our south-western and southern stations on the 10th or 11th, when a complex series of depressions passed across Ireland and England. *Range* was very large (more than 2·4 ins.) in the far north, but only half as great (about 1·2 ins.) in the south-west.

Depressions were numerous. Those experienced during the first half of the month were deep, and travelled from the north-westward or northward. The most important were those of the 2nd—3rd, and the 8th—9th, both of which were very deep. The disturbance of the 10th was complex and also travelled from the north-westward. Between the 24th and 26th some depressions advanced towards our Islands from Germany, but filled up before reaching our coasts.

Anticyclones.—No anticyclonic system advanced over our area until after the middle of the month, but it was apparent that a large one lay over the Atlantic to the westward of our Islands from the beginning of the month until this time. On the 14th the Continental high-pressure system began to re-appear over Russia, but soon gave way again, while that from the Atlantic spread eastwards over western and central Europe, and gave way on the 19th and 20th as low-pressure systems spread from the northern to the central countries. The barometer then became high in the north, as well as over Spain and Algeria.

Wind was Northerly and North-westerly; it was strong as a whole and on many occasions blew with the force of a gale. The gales experienced between the 1st and 10th were very severe.

Temperature.—*Mean, at Sea Level*, ranged from between 44° and 45° on our extreme south-western coasts to a little below 39° over Tyrone, Fermanagh, Leitrim, and Cavan, and to a little below 36° on the extreme eastern coasts of England and over the most northern parts of Scotland. It was lower than that of January by about 1° over Ireland and the extreme east of England, by about 2° over the south-west and west of England, and by nearly 5° in the north of Scotland. In Cambridgeshire and the west of Norfolk (where the January values were very low) it had risen 1° or 2°. It was below the average* by about 3° in the north of Scotland 1° to 2° over the northern half of Ireland, and 3° over Wales and some of our southern counties, but by about 5° in the extreme east of England. *Highest* readings occurred very generally over Scotland and Ireland on the 1st, and over England between the 16th and 18th. At no station did the "shade" temperature exceed 58°. *Lowest* were recorded very generally over Great Britain between the 10th and 13th (lowest of all on the 12th), and in Ireland between the 24th and 28th. *Range* was large over some of our south-eastern counties (where the morning of 12th was intensely cold), moderate elsewhere. *Vapour Tension* varied from 0·18 in. and less in the east of Scotland and over the south Midland counties of England to upwards of 0·22 in. over the western and southern parts of Ireland and the extreme south-west of England, and to nearly 0·26 in. at Valencia and Scilly. *Relative Humidity* varied irregularly; it exceeded 95 per cent. at Stornoway, but was only 84 to 88 over our Midland counties, and 82 at Aberdeen.

Rainfall varied from an inch, or little more, over many parts of our north-eastern counties, to more than 2 ins. in the east of Scotland and south-west of England, to more than 4 ins. in the west of Ireland and the Hebrides, 6·5 ins. at Laudale, and 11·6 ins. at Glencarron. It was on the whole less than the average* except over the northern half of Scotland, where it was more; the excess was as much as 100 per cent. at Wick.

Bright Sunshine.—The amounts recorded varied from only 10 per cent. of the total possible duration at Glencarron, 13 per cent. at Stowell, and 15 per cent. in London, to 23 at Stornoway, 24 on our south-eastern coasts, 25 to 30 in Ireland and the north-west and south-west of England, 30 at Aberdeen, and 31 at Glenlee.

* The averages employed are—*Pressure and Temperature*, for the 20 years 1861–80; *Rainfall* for the 20 years 1866–85.

TABLE III.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Numbers of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 33° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29°662	35°5	31°0	39°4	35°2	23	9th, 10th	47	17th
	Wick	29°734	35°5	30°7	40°3	35°5	23	10th, 12th	53	1st
	Stornoway	29°786	37°0	32°1	41°3	36°7	20	10th, 11th	51	17th
1. SCOTLAND, E.	Nairn	29°780	34°9	31°2	41°8	36°5	20	10th, 11th, 28th	56	1st, 18th
	Aberdeen	29°772	35°0	32°0	40°9	36°5	22	10th	55	1st, 18th
	Leith	29°817	37°5	32°8	44°1	38°5	22	10th, 11th	55	1st
2. ENGLAND, N.E.	Shields	29°820	36°8	32°6	43°0	37°8	21	10th, 11th	56	1st
	York	29°833	36°3	32°0	42°8	37°4	21	10th	55	1st
	Spurn Head	29°816	36°5	33°2	40°3	36°8	25	10th, 11th	52	1st
3. ENGLAND, E.	Yarmouth	29°829	35°6	30°5	40°1	35°3	16	13th	55	18th
	Cambridge	29°895	34°6	28°8	43°5	36°2	15	13th	58	17th
4. MIDLAND COUNTIES	Loughborough	29°905	35°7	31°9	43°2	37°6	19	13th	56	1st
	Oxford	29°937	35°0	31°8	42°9	37°4	20	12th	54	17th
5. ENGLAND, S.	London	29°920	35°6	31°6	43°1	37°4	21	12th, 13th	58	17th
	Dungeness	29°874	34°5	29°4	41°8	35°6	11	12th	55	17th
	Hurst Castle	29°958	37°8	34°1	43°8	39°0	24	12th, 13th	51	17th, 20th
6. SCOTLAND, W.	Ardrossan	29°856	38°7	35°1	43°4	39°3	26	10th, 11th	51	18th
7. ENGLAND, N.W.	Hawes Junction*	28°604	31°8	27°9	37°2	32°6	16	10th	46	17th, 18th
	Barrow-in-Furness	29°880	37°5	34°5	42°6	38°6	24	11th	50	1st
	Liverpool	29°915	37°5	34°3	42°8	38°6	22	11th	55	1st
	Holyhead	29°940	40°2	37°6	44°3	41°0	29	11th	52	1st, 17th
8. ENGLAND, S.W.	Pembroke	29°989	41°2	37°8	44°6	41°2	29	11th	50	1st, 16th
	Prawle Point	30°016	38°9	34°1	45°0	39°6	27	10th, 25th	53	20th
9. IRELAND, N.	Malin Head	29°882	39°8	36°6	43°1	39°9	28	9th, 11th	51	1st, 18th
	Donaghadee	29°916	39°5	36°4	44°4	40°4	29	10th, 11th	54	1st
	Mullaghmore	29°962	41°2	37°3	45°6	41°5	29	10th, 11th, 24th	52	1st, 17th, 18th
	Belmullet	30°010	42°0	38°3	46°5	42°4	30	10th, 11th	52	1st
10. IRELAND, S.	Parsonstown	30°007	37°6	33°6	46°2	39°9	21	28th	54	16th, 17th
	Valencia	30°072	44°3	40°8	49°5	45°2	32	24th	54	6th, 16th
	Roche's Point	30°033	42°6	39°0	47°9	43°5	29	28th	56	1st, 16th
CHANNEL ISLANDS	Scilly	30°043	44°9	40°5	47°4	44°0	34	25th	52	1st, 14th
	Jersey	30°012	41°9	37°9	46°1	42°0	32	10th, 11th	52	1st

* Hawes Junction is 1,135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, FEBRUARY 1889.

vii

REPORTING STATIONS in the BRITISH ISLANDS during the Month of FEBRUARY 1889.

Thunderstorms, and Gales are counted irrespective of the Hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins.	%		ins.	ins.																	
0.179	86	8.7	3.77	0.58	25th	24	12	0	0	0	18	8	11	3	0	1	0	1	3	3	6
.189	91	8.4	4.05	0.40	13th	26	9	0	2	0	16	9	11	0	1	2	2	0	0	10	2
.214	97	9.2	4.84	0.60	8th	26	9	1	0	0	21	14	7	2	1	2	0	5	1	8	2
.183	90	7.9	2.89	0.47	18th	23	10	0	0	0	16	7	5	0	0	0	0	6	4	4	9
.168	82	7.1	2.90	0.43	25th	25	14	1	0	0	11	13	2	0	1	2	4	3	8	8	0
.181	81	5.3	0.83	0.16	25th	16	7	0	0	1	0	3	3	2	2	1	1	2	13	4	0
.184	85	7.1	1.10	0.24	11th	18	11	2	0	1	9	6	1	3	1	1	2	6	7	7	0
.188	88	6.8	1.02	0.16	3rd	17	4	0	0	4	13	0	6	2	1	0	2	3	10	4	0
.193	89	6.9	1.10	0.19	11th	20	13	1	0	0	8	9	3	6	1	0	2	5	6	5	0
.188	90	5.6	1.40	0.26	8th	23	13	8	0	6	5	5	3	6	3	0	0	1	7	8	0
.181	90	6.6	1.72	0.56	10th	18	13	1	0	4	15	0	9	2	0	0	2	5	6	3	1
.178	84	8.1	1.72	0.53	10th	19	15	4	0	2	16	5	4	1	0	0	1	5	7	9	1
.176	86	6.8	1.82	0.44	10th	18	13	2	0	7	15	2	4	5	1	0	0	5	9	4	0
.183	87	7.5	2.34	0.51	10th	19	16	2	1	4	17	6	5	5	0	0	0	5	9	3	0
.186	93	7.1	2.58	0.45	10th	19	7	0	0	1	12	5	6	4	2	1	0	0	7	8	0
.208	92	6.2	1.65	0.47	10th	15	8	0	0	1	6	6	5	6	1	0	1	1	9	5	0
.213	91	7.0	1.84	0.40	13th	15	3	2	0	2	14	8	6	2	3	0	3	2	3	7	2
.173	97	8.0	4.04	0.97	1st	22	13	0	0	1	20	5	4	6	3	1	1	9	3	0	1
.197	88	7.3	2.35	0.37	13th	17	4	0	0	0	11	9	10	3	1	1	1	5	4	3	0
.191	85	8.1	2.09	0.64	6th	18	5	4	1	3	19	5	3	4	2	1	3	3	8	4	0
.224	90	7.6	1.99	0.38	12th	20	4	1	0	0	13	4	3	4	5	0	2	3	6	5	0
.219	85	7.5	2.55	0.40	14th	18	5	1	0	0	10	11	2	5	3	0	1	6	4	7	0
.204	87	7.0	2.43	0.55	14th	16	3	1	0	0	10	2	7	3	1	0	0	4	8	5	0
.222	92	8.1	2.40	0.38	13th	21	4	2	0	0	18	5	4	1	0	2	4	3	2	12	0
.214	89	7.0	2.17	0.41	6th	25	3	1	0	0	10	5	3	5	2	1	1	4	10	2	0
.227	89	7.9	2.87	0.28	12th	24	6	6	1	2	13	12	3	2	2	2	1	6	4	7	1
.237	89	7.4	4.91	0.75	2nd	26	2	0	0	1	16	6	5	2	3	2	1	1	6	8	0
.203	91	8.9	1.70	0.38	15th	19	5	0	0	0	23	0	0	0	0	1	0	4	2	4	17
.257	88	8.0	4.18	0.66	13th	25	0	4	0	1	16	6	5	2	2	2	0	4	3	8	2
.229	84	6.1	3.27	0.55	2nd	19	2	0	0	1	10	8	6	3	1	3	0	1	8	6	0
.256	87	9.0	2.24	0.54	2nd	23	3	4	2	0	21	9	6	3	3	1	2	3	5	5	0
.210	80	7.7	2.87	0.57	13th	25	9	4	1	0	10	6	4	4	2	1	0	1	7	8	1

barometrical observations at this station are not reduced for altitude.

TABLE IV.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of FEBRUARY 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentage of possible Duration.
	Minima.	Maxima.	Max. and Min. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	58.0	23
LAIRG	28.2	40.4	34.3	12	11th	50	1st, 18th	25	4.76	0.78	17th	—	—
GLENCARRON	30.0	39.9	35.0	13	10th	49	1st	22	11.60	2.36	18th	2.60	10
FORT AUGUSTUS	31.0	42.2	36.6	10	11th	52	1st, 17th, 18th, 19th.	23	4.17	1.07	18th	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	78.2	30
BRAEMAR	28.6	40.2	34.4	17	10th	51	1st	19	2.64	0.74	8th	46.2	18
OCHTERTYRE	30.1	44.9	37.5	20	9th	57	1st, 17th	18	1.59	0.25	13th	—	—
MARCHMONT	30.1	41.4	35.8	16	19th	54	1st	24	2.40	0.37	3rd	75.3	29
ALNWICK CASTLE	32.2	40.5	46.4	20	10th	51	1st	17	1.00	0.17	28th	—	—
DURHAM	31.1	42.1	36.6	22	10th	55	1st	17	1.03	0.24	3rd	74.8	28
SCARBOROUGH	32.6	42.1	37.4	23	10th	56	19th	22	1.85	0.41	11th	†60.5	25
YORK	*	*	*	*	*	*	*	*	*	*	*	59.6	22
HILLINGTON	30.2	42.0	36.1	6	12th	55	1st, 18th	20	2.01	0.43	11th	51.3	19
GELDESTON	30.6	42.3	36.5	14	13th	58	18th	20	1.31	0.14	3rd, 10th	64.5	24
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	64.4	24
ROTHAMSTED	30.0	41.9	36.0	9	13th	58	17th	17	1.82	0.50	10th	—	—
INGATESTONE	30.2	41.9	36.1	10	13th	58	17th	17	1.67	0.48	6th	—	—
BAWTRY	32.0	43.7	37.9	21	12th	58	1st	18	1.51	0.36	10th	†47.0	17
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†44.3	16
CHEADLE	30.1	40.9	35.5	20	12th	54	1st	20	2.48	0.79	10th	—	—
CHURCHSTOKE	30.7	42.9	36.8	18	11th	55	17th	14	1.46	0.44	10th	47.3	18
HEREFORD	32.5	44.2	38.4	21	12th	56	1st, 18th	14	1.42	0.83	10th	—	—
GLOUCESTER	30.6	42.0	36.3	19	10th	55	17th	15	1.57	0.50	10th	75.6	27
OXFORD	*	*	*	*	*	*	*	*	*	*	*	59.5	22
LONDON	*	*	*	*	*	*	*	*	*	*	*	40.7	15
STRATHFIELD TURGIS	31.1	43.7	37.4	14	13th	56	1st, 17th	15	1.86	0.54	10th	—	—
HASTINGS	32.3	41.8	37.1	21	10th	55	17th	23	3.05	0.61	10th	65.8	24
SOUTHAMPTON	33.4	45.6	39.5	22	12th	56	1st, 17th, 20th	17	1.91	0.45	10th	59.5	22
STOWELL	32.9	42.6	37.8	23	12th	55	17th	20	2.28	0.57	10th	36.6	13
LAUDALE	34.1	42.7	38.4	19	11th	51	17th, 18th	21	6.49	1.50	12th	—	—
GLASGOW	33.3	42.4	37.9	24	10th	52	1st	19	2.25	0.37	13th	63.7	24
GLENLEE	31.0	42.8	36.9	20	10th	53	1st	16	4.01	0.83	13th	—	—
DOUGLAS	35.1	43.9	39.5	23	11th	53	1st	20	3.40	0.77	6th	83.1	31
NEWTON REIGNY	30.3	41.0	35.7	19	10th, 11th	52	1st	15	2.14	0.62	13th	62.1	23
STONHURST	31.7	42.1	36.9	21	11th	50	1st	22	3.40	0.99	13th	77.3	29
BLACKPOOL	34.9	42.7	38.8	27	11th	49	1st	15	1.94	0.42	6th	70.2	26
MANCHESTER	32.4	41.9	37.2	22	11th	54	17th	18	2.38	0.66	13th	—	—
LLANDUDNO	35.8	44.5	40.2	28	11th	54	1st	16	1.94	0.58	6th	47.9	18
LLANDOVERY	30.0	44.3	37.2	16	11th	53	17th	20	4.02	1.02	13th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	81.4	30
ARLINGTON	33.4	42.6	38.0	25	25th	50	1st	22	5.51	1.45	13th	—	—
CULLOMPTON	34.4	44.7	39.6	25	10th	54	1st, 17th	19	3.20	0.78	2nd	62.1	23
FALMOUTH	36.9	46.4	41.7	28	25th	53	1st, 16th, 17th	18	3.39	0.56	13th	82.1	30
PLYMOUTH	35.5	46.1	40.8	29	10th, 25th	54	1st, 17th	16	2.57	0.65	13th	77.6	28
JERSEY	*	*	*	*	*	*	*	*	*	*	*	66.2	24
LONDONDERRY	34.6	45.3	40.0	22	11th	52	1st, 13th, 14th, 16th, 17th.	23	5.70	0.43	6th	—	—
MARRKEE CASTLE	32.5	45.3	38.9	11	11th	54	18th	23	3.43	0.36	2nd	66.7	25
BROOKBOROUGH	30.6	44.3	37.5	10	11th	53	17th	23	3.10	0.47	10th	—	—
ARMAGH	32.7	44.6	38.7	21	11th, 12th	54	1st, 16th	17	1.64	0.18	2nd, 10th	66.1	25
EDGEWORTHSTOWN	31.5	43.7	37.6	17	11th	53	16th	22	1.89	0.33	13th	—	—
DUBLIN	35.1	45.5	40.3	22	11th	55	1st, 16th, 18th	20	2.45	0.74	10th	72.0	27
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	75.1	28
KILKENNY CASTLE	34.7	46.3	40.5	24	12th	55	17th	16	2.26	0.55	10th	—	—
WATERFORD	34.9	47.3	41.1	25	11th	57	1st	18	2.41	0.45	12th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	81.7	30
KILLARNEY	35.9	48.9	42.4	23	12th, 24th	57	17th	19	4.06	0.73	13th	—	—
FOYNES	37.9	47.8	42.9	30	10th, 23rd, 27th	55	4th, 15th	21	5.54	0.46	15th	—	—

* For information see Table III.

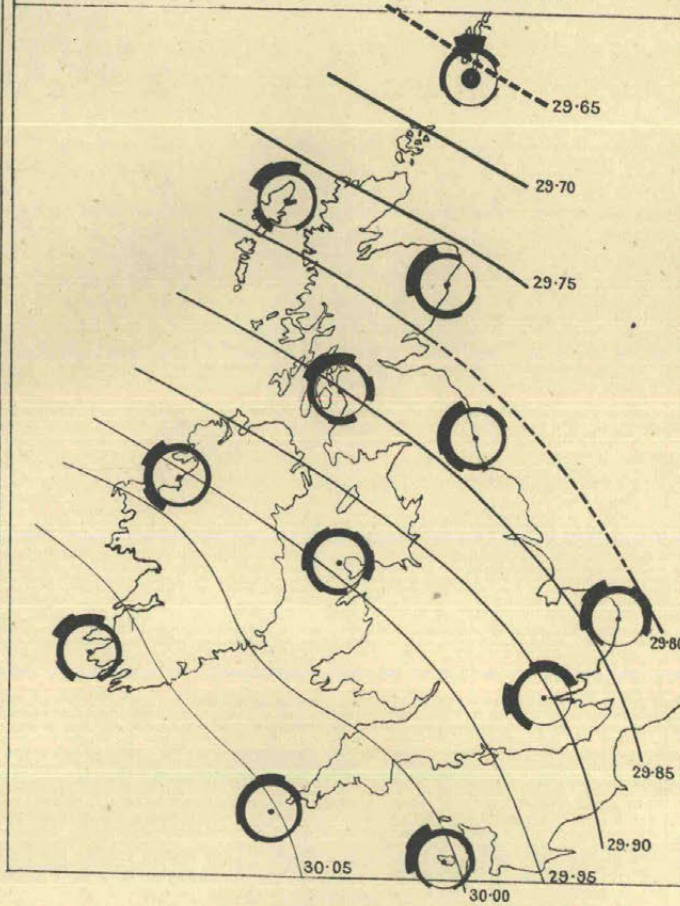
† The bright sunshine values given at Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Threaston.

MONTHLY WEATHER CHART. FEBRUARY 1889.

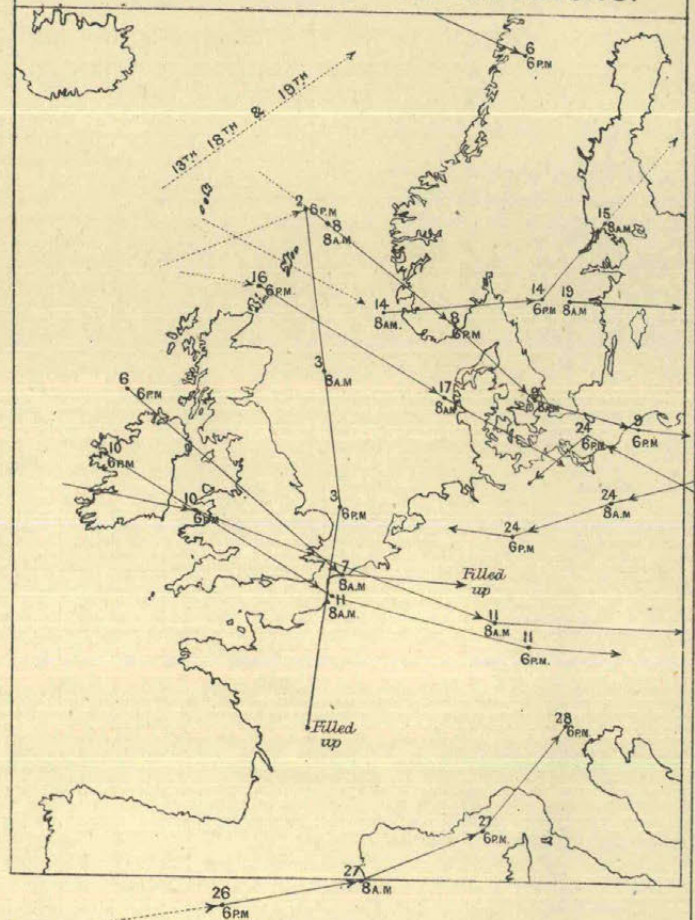
Monthly Summary.

Plate ii

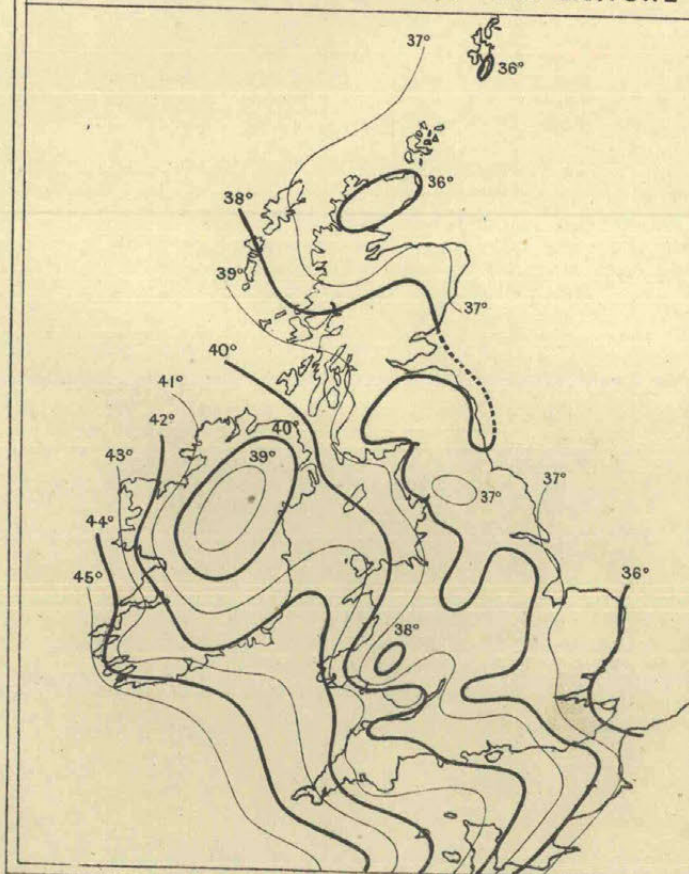
1. BAROMETER AND WIND.



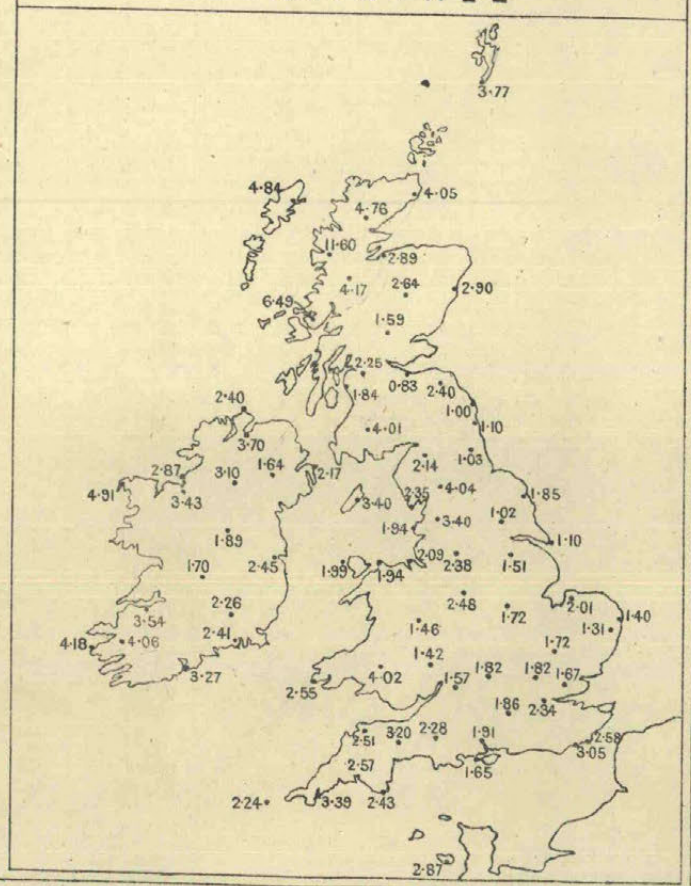
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL



To face p. VIII.

SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

MARCH 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of March was very changeable. Pressure was rather in excess of the average, its range was somewhat large, and the changes in its distribution were frequent. Temperature was rather below the average, and its range was very large over Great Britain—as much as 56° at Aberdeen. The wind was variable, but not strong. Rainfall was in excess over some districts, deficient in others, the excesses being due to heavy temporary falls, and the amount of bright sunshine was considerable.

Pressure.—*Mean for the Month, at 8 a.m.*, varied from a little above $30\cdot0$ ins. over the southern parts of Ireland and England to about $29\cdot9$ ins. over the south of Scotland and to rather below $29\cdot8$ ins. at the southern extremity of the Shetland Islands, and was rather lower at the mouth of the Bristol Channel than over the land immediately surrounding. It was decidedly higher than that for February over the northern and eastern parts of the kingdom, but slightly lower in the south-west and west; the gradients were favourable for winds from a more Westerly direction than those in the earlier month. It was in excess of the average* for March by six to eight hundredths of an inch over the northern and eastern parts of the kingdom, and by about $0\cdot14$ in. in the south-west of Ireland. *Highest* values were recorded very generally between the 14th and 16th, as an elongated high-pressure area moved south-eastwards over the kingdom; *Lowest* were recorded in most places on the 19th or 20th, as a rather deep depression travelled across Ireland and England from the westward. *Range* was rather large, especially at the central stations.

Depressions were as a rule neither large nor very deep; the most important were the systems which came over us from the westward on the 7th–9th and the 19th–20th. The former caused severe floods over our south-western and midland counties. The systems observed over our area travelled from points between south-south-west and round by west to north; two of them filled up on reaching the Continent, and another over Bedfordshire.

Anticyclones were prevalent either to the westward or eastward of our area during the greater part of the month, and occasionally spread over the British Islands or France in form of a “ridge” or “col.” Only one system, however, (that of March 14–16) travelled directly over the kingdom, and in this the maximum reading exceeded $30\cdot5$ ins.

Wind was very variable both in force and direction. It was mainly Westerly or North-westerly over the northern and eastern parts of the kingdom, South-westerly in London, but Easterly (North-east to South-east) in the Channel Islands. The gales experienced were somewhat numerous in the north and west, but were not severe.

Temperature.—*Mean, at Sea Level*, ranged from 46° at Scilly, and from 45° and more on our other extreme south-western coasts, to less than 43° over the inland parts of the north of Ireland, to less than 42° over central England, less than 40° over West Yorks and the extreme east of England, and to less than 39° in the north of Scotland. It was higher at all stations than in February, the change varying from three to four degrees over Scotland and the greater part of Ireland, and to very little less than that over England, but amounting to only 1° in the Channel Islands and $0^{\circ}\cdot4$ at Valencia. It did not differ much from the average* value for March at the Scotch and Irish stations, but was below it over England by rather more than 1° . *Highest* readings were recorded in nearly all places on the 24th, 28th, or 29th, but at several of the western stations on the 13th. *Lowest* occurred between the 2nd and 4th, except at some of the Irish stations, where the cold was sharpest on the 10th or 11th. *Range* was large, amounting to more than 40° in many places, and amounting to 49° at Rothamsted, 51° at Cambridge, and 56° at Aberdeen. *Vapour Tension* varied from between $0\cdot24$ in. and $0\cdot26$ in. at our extreme western and south-western stations to less than $0\cdot20$ in. in many parts of Great Britain, the lowest of all being rather less than $0\cdot19$ in. at Aberdeen and Hawes Junction. *Relative Humidity* varied from 80 to 90 per cent. over the eastern parts of Great Britain, but was as high as 95 at Stornoway, 93 at Belmullet, 92 at Malin Head, Ardrossan, Barrow, and Hurst Castle, 91 at Donaghadee, and 90 at Holyhead.

Rainfall varied from $0\cdot67$ in. at Leith, $0\cdot81$ in. at Ochertyre, $0\cdot85$ in. at Geldeston, and slightly below an inch at Braemar, to upwards of 3 ins. at many stations on the western side of Great Britain and Ireland, to more than 5 ins. at Falmouth, Plymouth, and Laudale, and to $9\cdot66$ ins. at Glencarron. Over our south-western and midland counties the fall was greatest between the 6th and 9th, but at many of the northern and north-eastern stations the heaviest fall was on the 19th, and at some north-western stations on the 24th. It was in excess of the average* in many districts, but below it in many others, the excess being in most cases due to heavy, and somewhat local, falls which occurred within very limited dates—such as have been quoted above. But for these falls the month would have been a dry one generally.

Bright Sunshine varied from 18 per cent. of the possible duration in London, from between 20 and 25 per cent. over Scotland and the north of Ireland, and from between 25 and 28 per cent. over the greater part of England, to about 30 in Devonshire and at Parsonstown, 39 at Valencia, and 40 at Jersey.

* The averages employed are—*Pressure and Temperature*, for the 20 years 1861–80; *Rainfall* for the 20 years 1866–85.

TABLE V.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Numbers of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	29°781	37°4	33°4	41°1	37°3	26	18th	48	25th, 31st
	Wick	29°828	38°8	34°3	44°8	39°6	27	8th	60	28th
	Stornoway	29°841	40°1	35°1	45°3	40°2	25	2nd	54	28th, 29th
1. SCOTLAND, E.	Nairn	29°847	38°7	34°0	46°4	40°2	21	4th	60	24th, 28th
	Aberdeen	29°876	38°1	32°9	45°1	39°0	10	5th, 6th	66	24th
	Leith	20°898	39°8	34°4	47°8	41°1	19	4th	58	13th
2. ENGLAND, N.E.	Shields	29°904	38°9	33°9	46°0	40°0	15	4th, 5th	57	24th
	York	29°913	38°5	33°6	47°2	40°4	23	4th	62	29th
	Spurn Head	29°920	38°6	35°0	43°9	39°5	27	4th	55	29th
3. ENGLAND, E.	Yarmouth	29°943	39°0	34°1	44°5	39°3	25	3rd, 4th	62	24th
	Cambridge	29°980	38°4	31°3	49°8	40°6	14	3rd	65	24th
4. MIDLAND COUNTIES	Loughborough	29°974	37°9	33°8	48°9	41°4	21	4th	63	24th
	Oxford	30°001	37°6	33°9	48°4	41°2	23	4th	61	29th
5. ENGLAND, S.	London	29°989	38°8	33°8	48°5	41°2	20	4th	60	24th
	Dungeness	29°977	38°5	33°7	45°1	39°4	21	4th	55	30th
	Hurst Castle	30°013	40°6	36°5	47°7	42°1	27	28th	60	29th
6. SCOTLAND, W.	Ardrossan	29°919	40°7	35°9	46°3	41°1	25	4th	53	16th, 31st
7. ENGLAND, N.W.	Hawes Junction*	28°678	33°7	29°8	41°0	35°4	15	2nd	51	29th
	Barrow-in-Furness	29°948	38°7	35°8	44°4	40°1	26	2nd, 3rd	50	13th, 29th, 31st, 24th
	Liverpool	29°968	39°4	36°1	45°1	40°6	25	4th	58	
	Holyhead	29°976	41°8	38°9	46°7	42°8	29	4th	56	29th
8. ENGLAND, S.W.	Pembroke	29°993	42°2	38°8	45°8	42°3	29	5th	51	13th, 14th
	Prawle Point	30°009	42°1	36°1	47°3	41°7	26	1st	59	13th
9. IRELAND, N.	Malin Head	29°910	41°4	39°0	45°8	42°4	30	2nd, 3rd	50	22nd, 23rd, 24th, 30th, 24th
	Donaghadee	29°952	40°9	38°6	47°6	43°1	32	2nd, 3rd	58	
	Mullaghmore	29°957	42°6	39°3	48°2	43°8	31	2nd, 3rd	53	24th, 28th
	Belmullet	29°970	43°4	39°3	48°1	45°7	30	2nd, 3rd	53	28th
10. IRELAND, S.	Parsonstown	30°001	38°9	34°4	49°9	42°2	21	1st, 2nd, 3rd	59	28th
	Valencia	30°026	44°2	40°3	50°9	45°6	33	1st, 9th, 10th	55	12th, 14th, 25th, 29th, 13th
	Roche's Point	30°009	43°3	39°5	49°6	44°6	31	2nd	57	
CHANNEL ISLANDS	Scilly (St. Mary's)	29°998	46°0	42°0	49°4	45°7	36	1st, 2nd, 3rd	54	9th, 24th
	Jersey	30°038	42°4	37°9	48°1	43°0	29	6th, 16th	52	8th, 13th, 17th, 24th, 30th, 31st.

* Hawes Junction is 1.135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, MARCH 1889.

xi

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of MARCH 1889.

Thunderstorms, and Gales are counted irrespective of the hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins. 0.200	% 90	8.4	ins. 2.68	ins. 0.39	12th	26	9	1	0	0	18	2	10	1	1	3	4	2	6	1	3
*200	89	8.8	2.85	0.35	19th	27	6	0	0	1	23	3	5	0	1	6	2	5	2	10	0
*236	95	7.9	2.78	0.44	23rd	28	5	1	0	0	17	9	4	2	3	3	0	4	11	3	1
*206	88	7.2	1.19	0.23	19th	15	3	0	0	0	13	1	0	1	4	1	0	7	9	2	7
*187	81	7.0	2.28	0.53	19th	20	10	3	0	0	10	8	1	1	1	3	4	3	10	8	0
*202	83	6.4	0.67	0.22	19th	11	5	0	0	2	8	1	1	1	5	2	2	2	16	1	1
*203	86	8.2	2.75	0.89	19th	12	5	1	0	1	15	1	1	2	1	1	1	8	12	5	0
*201	87	7.1	2.29	1.10	8th	13	0	0	0	8	18	0	4	2	4	0	5	2	10	4	0
*201	86	7.5	2.59	0.81	20th	14	4	0	1	0	14	6	3	2	1	1	3	8	8	5	0
*210	89	6.2	1.20	0.56	7th	14	5	2	0	2	3	3	3	2	4	1	2	4	8	6	1
*190	86	6.4	1.17	0.30	7th	12	4	0	0	7	17	0	6	2	1	2	3	9	2	4	2
*196	86	7.9	4.02	2.06	8th	11	5	1	0	2	17	3	2	3	1	4	0	4	10	6	1
*194	86	7.4	1.86	0.46	8th	10	3	0	0	6	19	0	3	5	0	4	1	7	6	4	1
*197	84	6.9	1.56	0.35	7th	15	6	1	0	7	16	4	3	4	3	3	2	8	5	3	0
*205	89	6.7	1.47	0.45	7th	16	2	0	0	0	7	5	6	4	3	2	2	3	7	4	0
*232	92	7.4	1.92	0.46	19th	18	1	1	0	0	10	6	5	4	3	1	2	5	9	2	0
*233	92	6.8	1.47	0.30	24th	19	0	0	0	5	18	3	4	6	4	0	3	3	6	5	0
*186	95	7.4	4.97	1.77	24th	20	6	1	0	0	16	1	3	3	4	5	4	8	3	0	1
*212	92	6.8	2.08	0.49	19th	18	0	0	0	1	12	2	2	6	4	3	0	7	1	8	0
*205	85	7.3	2.06	0.62	8th	18	2	0	0	5	17	1	3	1	3	5	2	4	10	3	0
*237	90	6.5	1.57	0.36	24th	21	3	1	1	0	8	2	3	4	2	3	3	6	4	6	0
*233	87	6.7	1.83	0.27	3rd	21	2	0	0	0	7	7	4	3	4	3	4	4	3	6	0
*232	87	7.2	2.41	0.46	3rd	20	6	2	0	2	14	2	4	3	3	0	5	3	6	7	0
*240	92	6.9	2.21	0.51	27th	18	0	1	0	3	15	1	3	2	0	3	8	4	5	6	0
*234	91	7.1	2.34	0.62	19th	25	3	0	0	1	14	4	3	2	2	5	1	5	11	2	0
*238	87	8.0	2.64	0.43	27th	25	3	1	0	1	14	7	1	1	3	3	3	8	4	7	1
*203	93	7.2	3.22	0.43	24th	27	0	0	0	3	17	2	4	2	0	4	5	6	5	5	0
*211	90	8.1	1.43	0.61	6th	17	0	1	0	2	21	0	0	0	0	3	0	1	5	4	18
*240	83	6.8	3.24	0.59	6th	21	0	1	0	1	14	3	5	2	1	3	4	4	0	6	6
*231	82	6.3	2.22	0.46	2nd	10	0	0	0	0	10	1	10	2	2	1	2	3	5	6	0
*261	85	7.9	3.16	0.90	7th	18	0	0	1	1	15	4	4	4	2	2	1	6	6	5	1
*217	81	6.4	1.49	0.26	7th	15	0	1	0	3	12	4	2	4	5	4	3	4	3	6	0

barometrical observations at this station are not reduced for altitude.

TABLE VI.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of MARCH 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentages possible Duration.
	Minima.	Maxima.	Max. and Min. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	.	.	.	.	.	.	.	.	.	.	.	85.7	24
LAIRG	30.8	44.0	37.4	16	2nd	60	28th	23	2.38	0.36	19th	—	—
GLENCARRON	32.8	43.8	38.3	21	5th	51	31st	26	9.66	2.01	23rd	78.7	22
FORT AUGUSTUS	34.3	46.0	40.2	20	2nd	57	29th	18	2.86	0.74	23rd	—	—
ABERDEEN	.	.	.	.	.	.	.	.	.	.	.	86.7	24
BRAEMAR	30.1	43.1	36.6	8	2nd	60	28th	17	0.99	0.19	18th	84.0	23
OCHTERTYRE	33.5	48.9	41.2	23	3rd	62	28th	15	0.81	0.24	6th	—	—
MARCHMONT	32.1	43.1	38.6	15	4th	59	29th	15	2.96	0.85	19th	89.3	25
ALNWICK CASTLE	34.3	44.1	39.2	13	3rd	54	30th	15	3.05	1.05	19th	—	—
DURHAM	32.6	46.3	39.5	11	4th	60	24th	11	2.27	0.90	8th	94.8	26
SCARBOROUGH	34.3	45.2	39.8	17	3rd	59	29th	13	2.20	1.25	8th	†96.0	26
YORK	.	.	.	.	.	.	.	.	.	.	.	93.7	26
HILLINGTON	32.5	47.9	40.2	17	4th	62	24th	13	1.75	0.52	7th	104.6	29
GELDESTON	33.3	47.1	40.2	20	3rd	65	24th	13	0.83	0.35	7th	97.2	27
CAMBRIDGE	.	.	.	.	.	.	.	.	.	.	.	95.0	26
ROTHAMSTED	32.8	47.3	40.1	17	4th	66	25th	15	1.77	0.36	7th	—	—
INGATESTONE	33.0	47.2	40.1	20	4th	60	24th	13	1.46	0.42	7th	—	—
BAWTRY	33.8	47.4	40.6	19	3rd	62	24th	11	3.47	1.40	8th	†86.8	24
LOUGHBOROUGH	.	.	.	.	.	.	.	.	.	.	.	†102.4	28
CHEADLE	33.0	44.9	39.0	22	4th	58	24th	16	3.31	1.30	8th	—	—
CHURCHSTOKE	33.0	45.9	39.5	21	3rd	61	29th	14	2.46	0.90	8th	98.0	27
HEREFORD	34.3	48.1	41.2	23	5th	61	29th	15	2.69	1.21	8th	—	—
CIRENCESTER	32.1	47.6	39.9	21	28th	60	29th	14	3.07	0.98	7th, 8th	104.4	29
OXFORD	.	.	.	.	.	.	.	.	.	.	.	93.8	26
LONDON	.	.	.	.	.	.	.	.	.	.	.	64.7	18
STRATHFIELD TURGIS	32.8	49.0	40.9	20	4th	62	29th	17	1.91	0.33	7th	—	—
HASTINGS	35.1	46.0	40.6	24	4th	55	17th, 30th	15	1.73	0.37	7th	99.4	27
SOUTHAMPTON	35.2	50.0	42.6	25	5th	68	29th	16	2.69	0.80	7th	99.4	27
STOWELL	34.5	46.4	40.5	25	5th	57	29th	18	2.48	0.47	7th	107.9	30
LAUDALE	36.8	45.8	41.3	23	2nd, 27th	56	24th	26	5.13	0.77	23rd	—	—
GLASGOW	35.6	45.2	40.4	25	4th	53	29th, 31st	19	1.31	0.30	24th	89.2	25
GLENLEE	33.0	45.7	39.4	14	4th	54	24th, 29th	17	3.25	1.15	6th	—	—
DOUGLAS	37.5	46.1	41.8	30	2nd, 27th	54	29th	17	2.34	0.55	19th	112.3	31
NEWTON REIGNY	32.9	45.0	39.0	17	3rd	54	24th	17	1.41	0.48	19th	91.0	25
STONYHURST	34.0	44.1	39.1	21	4th	54	29th	19	4.08	1.40	24th	95.3	26
BLACKPOOL	35.6	45.2	40.4	25	4th	52	19th	10	1.48	0.65	19th	105.4	29
MANCHESTER	34.4	45.6	40.0	24	4th	57	24th, 25th	18	2.75	0.79	8th	—	—
LLANDUDNO	37.1	45.9	41.5	26	3rd, 4th, 5th	55	24th	18	1.72	0.76	19th	78.4	21
LLANDOVERY	33.0	48.1	40.6	22	2nd	59	29th	24	3.66	0.95	8th	—	—
PEMBROKE	.	.	.	.	.	.	.	.	.	.	.	111.6	31
ARLINGTON	34.5	45.5	40.0	26	2nd, 3rd	53	29th	19	4.76	1.23	8th	—	—
CULLOMPTON	34.4	48.9	41.7	25	2nd, 5th, 28th	59	29th	15	2.99	0.96	8th	109.5	30
FALMOUTH	38.8	47.9	43.4	28	1st	54	24th, 29th	16	5.47	0.99	4th	107.6	30
PLYMOUTH	36.3	48.7	42.5	26	2nd	58	29th	15	5.03	1.13	6th	104.0	29
JERSEY	.	.	.	.	.	.	.	.	.	.	.	145.9	40
LONDONDERY	38.0	48.3	43.2	28	2nd	54	24th, 28th	22	2.82	0.74	27th	—	—
MARKREE CASTLE	36.0	48.4	42.2	21	2nd	59	28th	24	2.39	0.50	27th	80.6	22
BROOKEBOROUGH	34.8	47.7	41.3	24	11th	56	13th	15	2.08	0.57	19th	—	—
ARMAGH	36.1	48.8	42.5	25	2nd	57	13th	20	1.71	0.47	19th	83.6	23
EDGEWORTHSTOWN	34.3	49.0	41.7	23	2nd	57	28th	19	1.62	0.47	6th	—	—
DUBLIN	38.6	49.3	44.0	31	3rd, 27th	58	13th, 24th, 28th	17	1.08	0.38	19th	101.8	28
PARSONSTOWN	.	.	.	.	.	.	.	.	.	.	.	108.1	30
KILKENNY CASTLE	36.1	49.8	43.0	24	10th	60	28th	11	1.00	0.38	18th	—	—
WATERFORD	36.4	50.1	43.3	25	10th	59	13th	18	1.33	0.42	18th	—	—
VALENCIA	.	.	.	.	.	.	.	.	.	.	.	141.7	39
KILLARNEY	37.3	50.2	43.8	24	10th	56	14th, 15th, 28th	16	1.97	0.60	6th	—	—
FOYNES	39.6	49.6	44.6	26	1st	58	28th	14	1.36	0.55	6th	—	—

* For information see Table V.

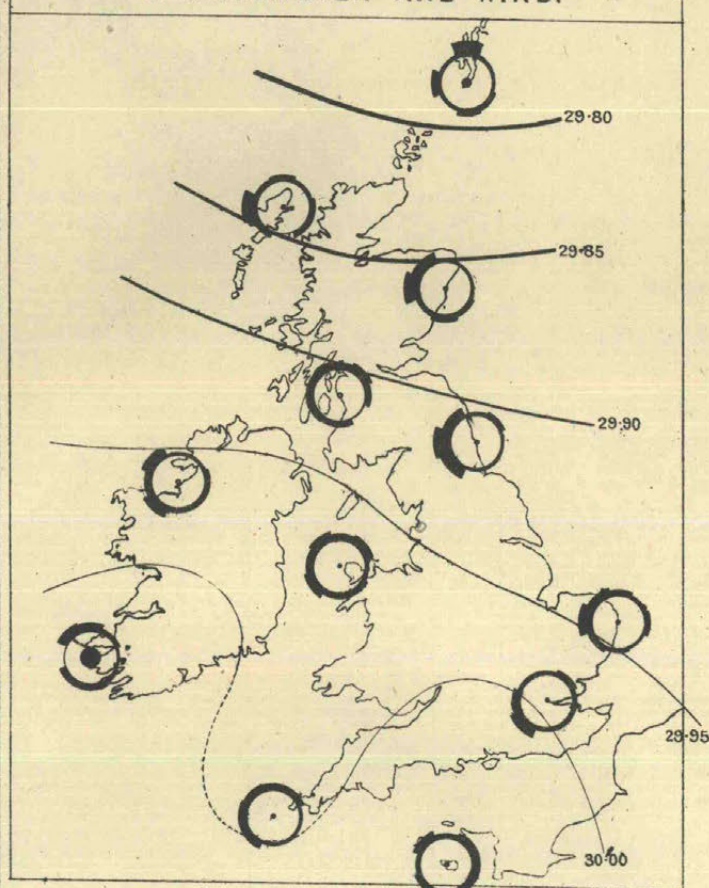
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those to Bawtry at Worksop, and those to Loughborough at Thurstaston.

MONTHLY WEATHER CHART. MARCH 1889.

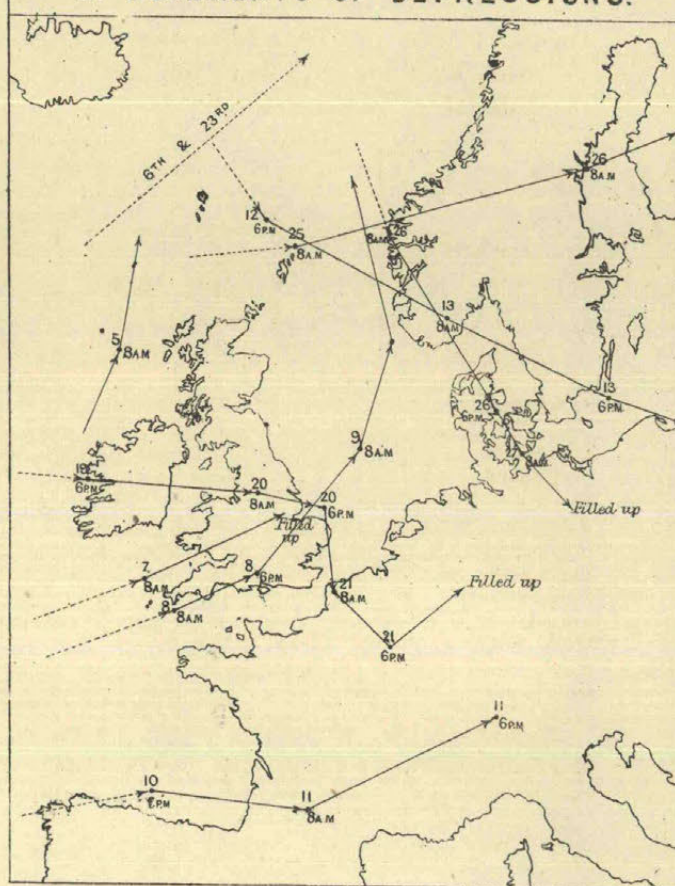
Monthly Summary

Plate iii.

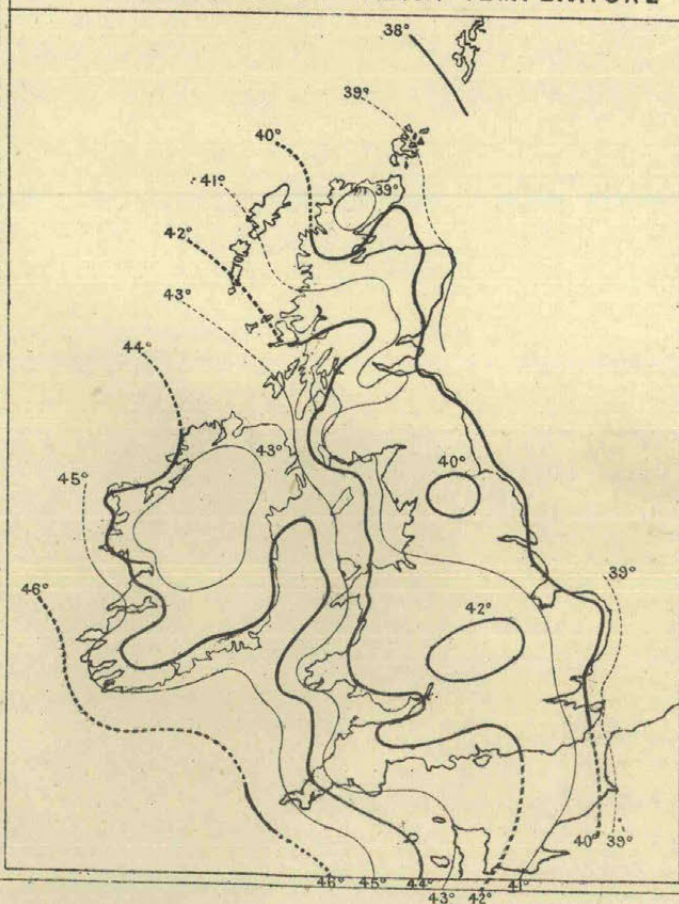
1. BAROMETER AND WIND.



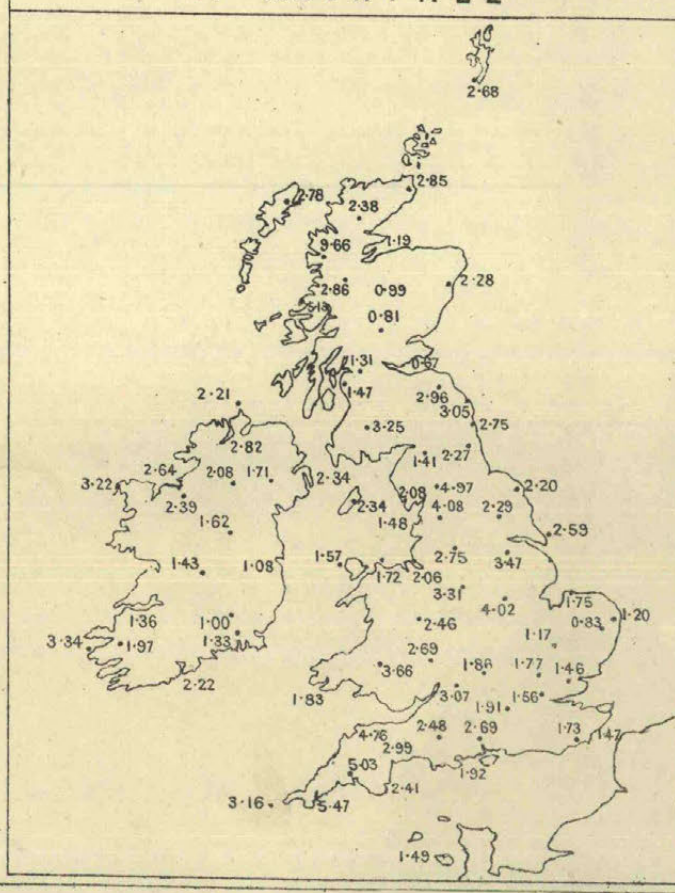
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL



To face p. xii.

ERRATA.

SUMMARY of OBSERVATIONS made at STATIONS included in the DAILY and
WEEKLY WEATHER REPORTS for the Month of APRIL 1889.

Page xvi. and Map 4, Plate I.—Rainfall, Laudale,	for “3·96” read “3·45.”
” ” ” ” Scarborough,	for “3·44” „ “3·41.”
” ” ” ” Churchstoke,	for “6·44” „ “6·61.”
” ” ” ” Stowell,	for “3·94” „ “3·92.”

SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS for the CALENDAR MONTH,

APRIL 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of April was rather changeable, but free from any great extremes, except in the matter of rainfall over our west Midland counties on the 7th. Pressure was low, and its distribution abnormal; Temperature was rather low; the Wind was variable, but not strong, the gales, where they occurred, were moderate; Rainfall varied greatly in amount locally, and Bright Sunshine was deficient, except in the south-west and extreme north-west.

Pressure.—*Mean for the month, at 8 a.m.*, was unusually uniform and of an exceptional type; it ranged from a little above 29·75 ins. over the southern half of Ireland and the extreme southern counties of England, as well as in the east of Scotland, to very little below that value over the other parts of Great Britain, and to about 29·7 ins. off our extreme north-western coasts. It was lower than that for March in all districts, but especially in the south-west and south; and was below the average* for the time of year by more than 0·10 in. in the north-east of Scotland, by about 0·13 in. in the south-west of Ireland, and by 0·21 in. over our southern and south-eastern counties. *Highest* values were recorded very generally between the 15th and 19th, when an anticyclone of moderate intensity moved from our north-western coasts to France. *Lowest* occurred on the 4th, when a rather deep disturbance advanced from the north-westward directly across the centre of our Islands. *Range* was small—less than an inch in many districts.

Depressions were not very numerous, nor were they deep. Those which came actually over our area moved mainly from north-west to south-east, and filled up before passing outside the area of observation. Between 22nd and 28th, however, some systems moved north-eastwards outside our extreme north-western coasts, and some minor disturbances passed eastwards over the Mediterranean and southern Europe at various dates.

Anticyclones.—No such system passed directly over our Islands during the month, the one which came nearest being that which reached our north-western coasts about the middle of the month. From the 1st to the 13th there were two high-pressure systems prevalent—one over north-eastern the other over south-western Europe, the two being separated by a broad low-pressure band, into which depressions advanced at intervals from the Atlantic, and in which others were formed temporarily. This distribution gave way after the 13th, but, after a brief interval of north-westerly and westerly gradients, was restored on the 23rd, and continued till the end of the month.

Wind was very variable; mainly Easterly to South-easterly at the northern and north-eastern stations, and chiefly North-westerly in the extreme west, south-west, and south. Gales were somewhat frequent from the former direction in the east of Scotland and from the latter on our south-western coasts; they were not strong, however, and in our other districts there were scarcely any reported.

Temperature.—*Mean, at sea level*, ranged from rather above 49° at Jersey, and 48° at Scilly, and from 47° at Roches Point and Valencia, to less than 45° over the inland parts of Ireland North and the north and north-west of England, to between 42° and 43° in the north of Scotland, and to 41°·5 at Sumburgh Head. It was higher than that of March by four or five degrees in the south of England (where the winter type of distribution began to give way) and by three degrees in Scotland, but by a smaller amount in Ireland. It was, however, below the average* for April everywhere, the difference varying a good deal locally, but being, as a whole, about 2°. *Highest* values were recorded over the kingdom generally between the 17th and 20th, but in the western and north-western parts similar values occurred between the 25th and 28th. *Lowest* values occurred on very various dates:—on the 2nd or 3rd in the north, on the 10th or 11th in the south-west and west, and on the 15th in many parts of England; they were, however, several other days on which decided minima occurred locally—for which see Tables VII. and VIII. None of the maxima exceeded 68°, and even this value was recorded at one station only (Cullompton). *Range* was moderate, being less than 40° everywhere; at Scilly it was 17°. *Vapour Tension* was lowest (0·22 in.) at Hawes Junction, and was below 0·24 in. over Scotland, the north of England, and our west Midland counties, as well as over central Ireland. It exceeded 0·26 in. in the west of Ireland as well as on the south-western and southern coasts of England, and was as high as 0·28 in. at Scilly. *Relative Humidity* was lowest (80%, and less) at Leith, Bidston, and Jersey, but was as high as 90, and above it, in the Hebrides and on the south-west, south-east, and east coasts of England.

Rainfall, owing to the fact that the falls were mainly due to thunderstorms, varied greatly. It was as low as 1·0 ins. at Sumburgh Head, 1·2 ins. at Prawle Point, 1·4 ins. at Pembroke, Dungeness, and Spurn Head, 1·6 ins. at York, Scilly, and Jersey, and less than 2·0 ins. at several other stations. At Hereford, however, it was 5·5 ins., and at Churchstoke 6·4 ins.—these being the largest aggregates reported. Compared with the averages* the results vary greatly in different localities, a large excess being shown over the west Midlands, a small excess in several other localities, and a slight deficit in others. The great excess in the west Midlands was due mainly to the large falls which occurred in those regions on the 7th.

Bright Sunshine was, as a whole, very deficient except on the south-western coasts and at Stornoway. Falmouth was the only station at which more than 40 per cent. of the possible duration was recorded; Valencia, Pembroke, Plymouth, and Jersey had from 37 to 39 per cent., Stornoway 35, Hastings 32, Parsonstown 31, and Douglas (Isle of Man) 30. All the others had much less, and at London, Durham, and Glencarron the per-centage was only 19.

* The averages employed are—*Pressure and Temperature* for the 20 years, 1861–80; *Rainfall* for the 20 years, 1866–85.

TABLE VII.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the numbers of days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 8 ⁰ Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head - - -	ins. 29°751	41°3	36°8	45°4	41°1	31	5th	51	20th
	Wick - - -	29°736	42°3	37°3	47°2	42°3	30	3rd	56	18th
	Stornoway - - -	29°719	43°0	37°1	47°6	42°4	30	11th	56	28th, 30th
1. SCOTLAND, E.	Nairn - - -	29°726	42°0	37°2	48°7	43°0	25	10th	60	17th
	Aberdeen - - -	29°756	42°2	38°4	47°6	43°0	32	3rd	61	20th
	Leith - - -	29°737	44°0	38°0	49°6	43°8	33	3rd	62	17th
2. ENGLAND, N.E.	Shields - - -	29°729	43°2	38°2	47°9	43°1	31	3rd	60	18th
	York - - -	29°711	44°0	38°4	51°4	44°9	30	15th	64	18th
	Spurn Head - - -	29°720	44°0	39°7	47°4	43°6	30	4th	56	20th
3. ENGLAND, E.	Yarmouth - - -	29°725	44°0	38°7	47°4	43°1	33	2nd, 3rd	60	20th
	Cambridge - - -	29°744	44°6	36°6	54°2	45°4	31	12th, 16th	63	18th
4. MIDLAND COUNTIES	Loughborough - - -	29°743	43°8	38°9	52°5	45°7	34	1st	64	18th
	Oxford - - -	29°753	43°2	38°7	51°9	45°3	32	16th, 26th	64	18th
5. ENGLAND, S.	London - - -	29°744	44°7	39°9	53°8	46°9	35	1st, 2nd, 16th, 26th.	65	19th
	Dungeness - - -	29°742	44°7	40°5	50°2	45°4	32	16th	55	30th
	Hurst Castle - - -	29°754	45°5	41°6	51°9	46°8	34	16th	57	18th
6. SCOTLAND, W.	Ardrossan - - -	29°728	44°4	39°1	48°7	43°9	32	14th	54	28th
7. ENGLAND, N.W.	Hawes Junction* - - -	28°486	38°7	34°8	45°5	40°2	29	3rd	59	17th
	Barrow-in-Furness - - -	29°726	42°7	40°0	49°9	45°0	37	3rd, 4th, 8th, 11th, 12th.	55	25th, 28th
	Liverpool - - -	29°737	43°4	39°1	50°0	44°6	33	11th	57	26th, 27th
	Holyhead - - -	29°731	44°4	40°9	48°8	44°9	36	9th	55	18th
8. ENGLAND, S.W.	Pembroke - - -	29°741	44°8	41°9	48°9	45°4	37	10th, 15th	54	30th
	Prawle Point - - -	29°762	46°7	39°6	51°3	45°5	34	6th	57	18th, 25th
9. IRELAND, N.	Malin Head - - -	29°713	43°3	40°9	47°5	44°2	37	4th, 11th	55	18th
	Donaghadee - - -	29°740	44°5	41°6	49°7	45°7	38	8th, 9th, 15th	59	18th
	Mullaghmore - - -	29°737	44°5	41°4	49°8	45°6	37	9th	58	19th
	Belmullet - - -	29°746	45°5	42°0	50°0	46°0	37	6th, 12th	53	20th, 25th
10. IRELAND, S.	Parsonstown - - -	29°765	42°8	38°0	52°1	45°1	30	9th, 15th	59	20th
	Valencia - - -	29°793	47°1	41°3	52°5	46°9	34	8th	56	25th
	Roche's Point - - -	29°762	46°1	42°1	51°9	47°0	34	15th	57	7th
CHANNEL ISLANDS	Scilly (St. Mary's) - - -	29°755	48°5	44°4	51°5	48°0	40	4th	57	20th
	Jersey (St. Aubins) - - -	29°778	48°0	43°3	53°2	48°3	37	6th	59	19th

* Hawes Junction is 1,135 feet above Mean Sea Level and the barometric

SUMMARY OF OBSERVATIONS, APRIL 1889.

XV

REPORTING STATIONS in the BRITISH ISLANDS during the Month of APRIL 1889.

Thunderstorms, and Gales are counted irrespective of the hour at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER.							WIND.								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Days of							No. of Observations of								
						Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins.	%	8'1	ins.	in.	9th	17	3	0	0	0	19	2	2	4	6	6	2	1	3	4	2
0'224	87	8'1	0'95	0'14	9th	17	3	0	0	0	19	2	2	4	6	6	2	1	3	4	2
0'238	89	8'2	2'61	0'55	10th	26	2	1	0	2	19	5	4	2	1	8	6	3	1	5	0
0'253	91	9'0	2'46	0'38	22nd	25	2	0	0	0	21	7	2	0	4	6	5	2	4	4	3
0'225	85	6'7	2'11	0'53	10th	22	1	0	0	2	13	0	0	2	7	4	1	6	3	1	6
0'225	85	7'9	2'97	0'39	24th	24	3	3	0	0	13	10	4	1	8	4	3	3	3	4	0
0'222	76	8'1	2'46	0'45	30th	21	1	1	1	0	15	0	0	5	9	2	1	2	9	2	0
0'234	84	8'1	2'10	0'41	30th	20	1	1	0	0	17	1	4	3	8	1	2	4	4	3	1
0'244	84	7'8	1'56	0'23	7th	18	0	0	0	5	20	0	4	3	8	1	4	2	6	2	0
0'252	87	7'4	1'40	0'24	7th	20	0	0	1	0	14	5	3	5	4	2	4	4	4	3	1
0'261	90	6'5	1'96	0'36	6th	24	1	3	1	3	5	0	5	4	4	3	3	5	2	4	0
0'255	87	7'8	2'31	0'41	10th	22	0	3	4	1	18	0	6	2	4	0	7	2	3	4	2
0'244	85	7'9	3'27	0'70	10th	20	0	1	3	1	16	0	2	5	4	3	2	3	8	3	0
0'240	86	7'7	2'89	0'58	9th	22	1	4	1	6	19	0	5	7	3	0	3	6	2	2	2
0'249	84	8'3	2'13	0'40	23rd	20	1	2	2	2	20	1	3	4	5	2	3	6	4	2	1
0'264	89	7'8	1'43	0'45	10th	18	0	0	0	0	10	0	4	4	6	1	2	7	3	2	1
0'279	92	6'9	2'17	0'44	8th	16	0	0	1	0	10	2	5	6	2	1	2	5	6	3	0
0'254	87	6'4	2'51	0'46	23rd	18	1	0	0	2	10	2	0	9	5	2	2	3	3	6	0
0'215	92	8'4	3'18	0'59	3rd	23	5	2	1	0	20	0	5	6	5	5	1	5	0	2	1
0'237	86	7'7	1'82	0'49	3rd	16	0	0	0	0	17	2	5	8	1	3	4	3	0	6	0
0'228	80	8'1	3'05	0'33	10th	24	0	0	2	3	21	1	2	4	6	4	2	3	6	3	0
0'254	87	7'5	3'49	1'18	8th	19	0	0	0	0	14	0	4	4	7	2	4	2	3	4	0
0'269	91	6'7	1'40	0'26	12th	19	0	0	0	0	10	7	3	7	4	2	3	2	4	5	0
0'261	82	5'9	1'16	0'29	23rd	12	0	2	1	0	4	2	3	6	2	3	4	2	4	6	0
0'244	87	6'9	3'02	0'93	3rd	17	0	3	0	6	18	0	5	4	4	4	6	3	1	3	0
0'253	87	6'4	2'28	0'39	11th	22	0	0	0	0	8	2	4	7	5	2	2	3	5	2	0
0'239	81	7'3	3'74	0'62	3rd	18	0	2	0	2	10	6	3	3	6	2	3	4	2	7	0
0'266	88	7'8	2'75	0'76	19th	22	0	0	0	2	18	4	3	4	5	4	1	6	3	4	0
0'232	85	8'8	1'95	0'62	27th	17	0	0	1	0	25	0	0	4	0	3	0	4	2	7	10
0'256	79	7'3	2'61	0'41	29th	18	0	2	0	0	12	3	5	6	0	2	1	5	2	6	3
0'245	79	5'4	3'84	0'90	29th	18	0	1	1	0	9	4	10	4	1	2	1	4	4	4	0
0'281	83	7'6	1'55	0'38	29th	15	0	0	0	1	10	5	4	5	2	1	3	3	3	9	0
0'265	80	6'1	1'63	0'27	26th	15	0	1	0	4	7	0	4	3	2	2	1	6	5	6	1

observations at this station are not corrected for altitude.

TABLE VIII.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT, during the Month of APRIL 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentage of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	148°0	35
LAIRG	34°8	46°5	40°7	27	10th	58	27th	25	2°89	0°46	12th	—	—
GLENCARRON	35°8	47°2	41°5	28	10th, 11th	58	28th	25	3°97	0°80	21st	81°0	19
FORT AUGUSTUS	—	—	—	—	—	—	—	—	—	—	—	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	97°2	23
BRAEMAR	34°7	45°0	39°9	28	3rd, 26th	61	17th	23	4°09	0°76	30th	85°7	20
OCHTERTYRE	36°9	50°8	43°9	30	23rd	67	17th	19	4°13	0°96	30th	—	—
MARCHMONT	36°0	47°3	41°7	30	3rd	61	18th	21	4°44	0°87	4th	87°3	21
ALNWICK CASTLE	38°6	46°4	42°5	32	2nd	57	17th, 27th	23	3°79	0°81	30th	—	—
DURHAM	36°6	49°5	43°1	30	3rd	66	18th	18	2°14	0°35	4th	78°5	19
SCARBOROUGH	38°4	47°8	43°1	34	3rd	66	18th	20	3°34	0°45	5th	†82°8	20
YORK	*	*	*	*	*	*	*	*	*	*	*	†96°8	†23
HILLINGTON	37°4	51°5	44°5	31	23rd	63	18th	22	1°68	0°27	10th	90°8	22
GILDESTON	37°6	50°7	44°2	31	6th	61	20th	25	2°31	0°69	24th	86°3	21
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	98°4	24
ROTHAMSTED	37°3	52°0	44°7	31	16th	62	18th	22	2°36	0°26	10th, 24th	—	—
INGATESTONE	37°5	52°4	45°0	31	11th	63	19th	17	1°95	0°28	23rd	—	—
BAWTRY	38°3	52°3	45°3	31	14th	63	27th	20	2°43	0°40	6th	†91°1	22
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†99°6	24
CHADLE	36°6	49°4	43°0	32	3rd, 15th	60	18th	21	3°23	0°54	30th	—	—
CHURCHSTOKE	36°1	49°7	42°9	28	15th	64	18th	21	6°44	2°09	8th	81°1	20
HEREFORD	37°7	52°9	45°3	31	15th	66	18th	20	5°51	1°90	8th	—	—
CIRENCESTER	—	—	—	—	—	—	—	—	—	—	—	93°0	23
OXFORD	*	*	*	*	*	*	*	*	*	*	*	86°1	21
LONDON	*	*	*	*	*	*	*	*	*	*	*	80°1	19
STRATHFIELD TURGISS	38°8	53°0	45°9	32	1st	63	18th	21	2°30	0°46	6th	—	—
HASTINGS	40°6	51°0	45°8	34	16th	56	9th, 30th	18	2°10	0°26	3rd, 10th, 12th	132°4	32
SOUTHAMPTON	40°3	54°7	47°5	33	1st, 16th	64	18th, 19th	21	2°09	0°43	8th	116°9	28
STOWELL	38°5	51°1	44°8	33	6th	62	18th	20	3°94	0°81	7th	85°9	21
LAUDALE	38°6	50°1	44°4	31	11th, 24th	58	24th	13	3°36	0°60	19th, 26th	—	—
GLASGOW	38°6	48°7	43°7	32	14th	57	19th, 28th	19	2°27	0°77	3rd	99°5	24
GLENLEE	36°7	48°9	42°8	28	26th	57	20th, 28th	19	3°30	0°75	3rd	—	—
DOUGLAS	40°4	49°1	44°8	33	26th	55	17th	21	3°61	0°53	26th	124°6	30
NEWTON REIGNY	36°9	49°1	43°0	30	15th	60	17th	20	2°25	0°37	3rd	99°7	24
STONYHURST	37°9	49°5	43°7	34	8th, 15th, 26th	59	23rd	20	2°03	0°48	23rd	95°7	23
BLACKPOOL	39°1	50°1	44°6	32	15th	56	26th	15	2°58	0°45	4th	116°1	28
MANCHESTER	38°0	49°8	43°9	33	8th	58	27th	17	2°35	0°35	10th	—	—
LLANDUDNO	39°3	49°6	44°5	33	15th	56	26th, 28th	20	4°72	0°80	8th	93°5	23
LLANDOVERY	37°1	52°3	44°7	29	14th	64	18th	22	3°68	0°68	23rd	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	155°6	38
ARLINGTON	38°1	50°5	44°3	31	10th	60	18th	16	2°78	0°67	3rd	—	—
CULLOMPTON	38°5	53°4	46°0	30	10th	68	18th	17	2°74	0°94	12th	115°4	28
FALMOUTH	41°3	51°7	46°5	37	10th	58	18th	19	2°52	0°42	3rd	179°8	44
PLYMOUTH	41°4	54°2	47°8	35	10th	62	18th	15	1°66	0°26	26th	160°6	39
JERSEY	*	*	*	*	*	*	*	*	*	*	*	161°2	39
LONDONDERRY	39°7	51°3	45°5	35	11th	63	25th	20	2°94	0°63	3rd	—	—
MARKREE CASTLE	39°3	50°4	44°9	33	27th	57	19th	20	3°31	0°55	27th	112°6	27
BROOKBOROUGH	37°4	49°3	43°4	29	15th	57	19th	19	2°93	0°64	3rd	—	—
ARMAGH	38°4	50°0	44°2	33	15th, 16th	60	17th	19	3°17	0°85	8th	90°4	22
EDGEWORTHSTOWN	37°3	50°5	43°9	30	15th	57	19th	22	2°72	0°41	27th	—	—
DUBLIN	40°9	51°3	46°1	33	15th	60	17th, 18th, 20th.	21	2°61	0°42	11th	112°1	27
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	129°7	31
KILKENNY CASTLE	39°1	51°8	45°5	28	9th, 15th	59	17th, 18th, 20th.	19	2°01	0°28	3rd, 30th	—	—
WATERFORD	38°9	52°7	45°8	27	15th	63	17th	19	1°91	0°23	21st	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	154°2	37
KILLARNEY	37°5	52°3	44°9	27	12th, 15th	57	25th	17	3°48	0°77	27th	—	—
FOYNE	41°3	51°5	46°4	33	14th	56	20th	14	2°51	0°76	27th	—	—

* For information see Table VII.

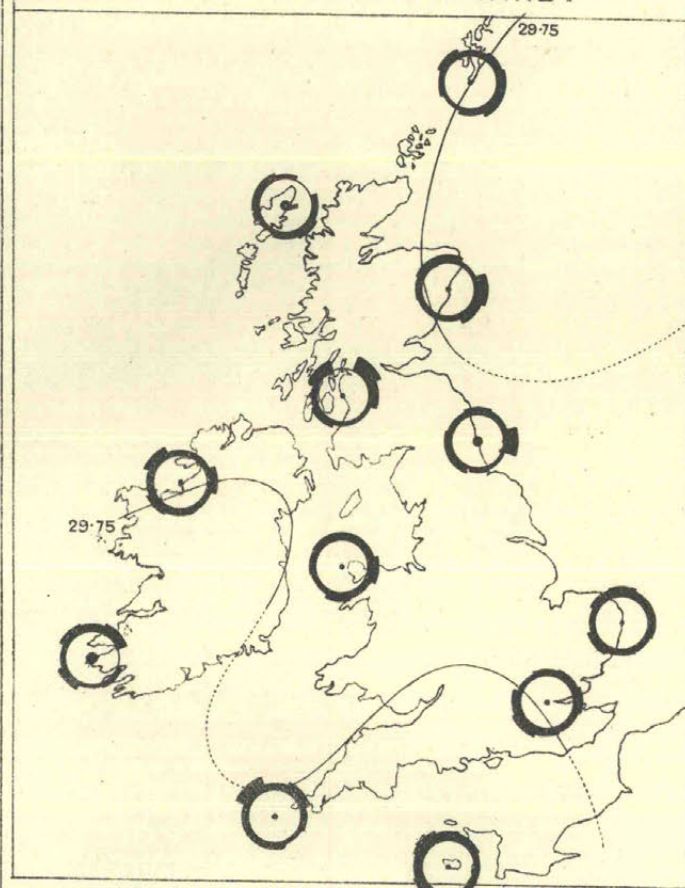
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry are recorded at Worksop, and those entered to Loughborough are recorded at Thurcaston.

MONTHLY WEATHER CHART APRIL 1889.

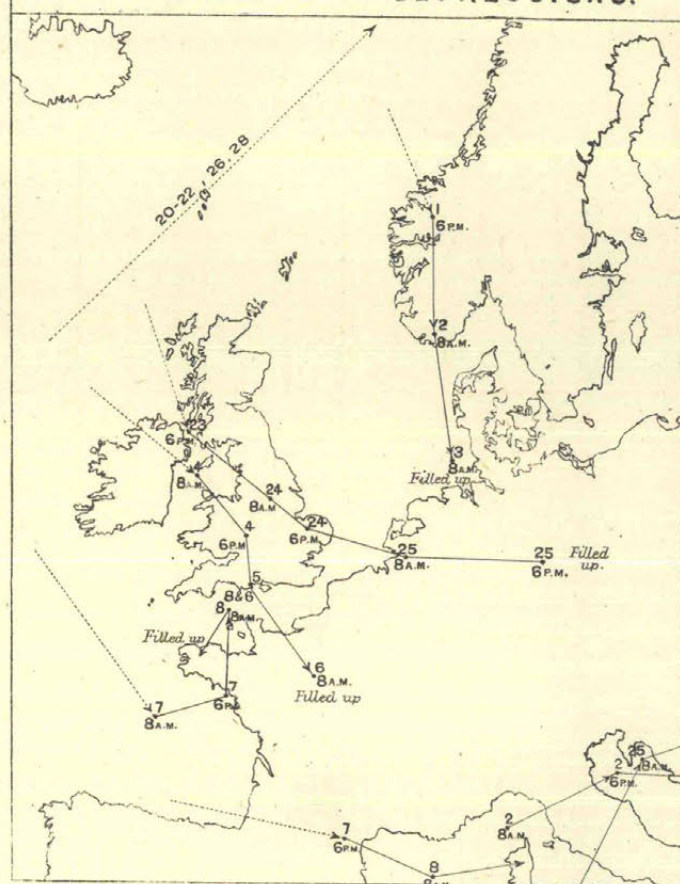
Monthly Summary

Plate IV.

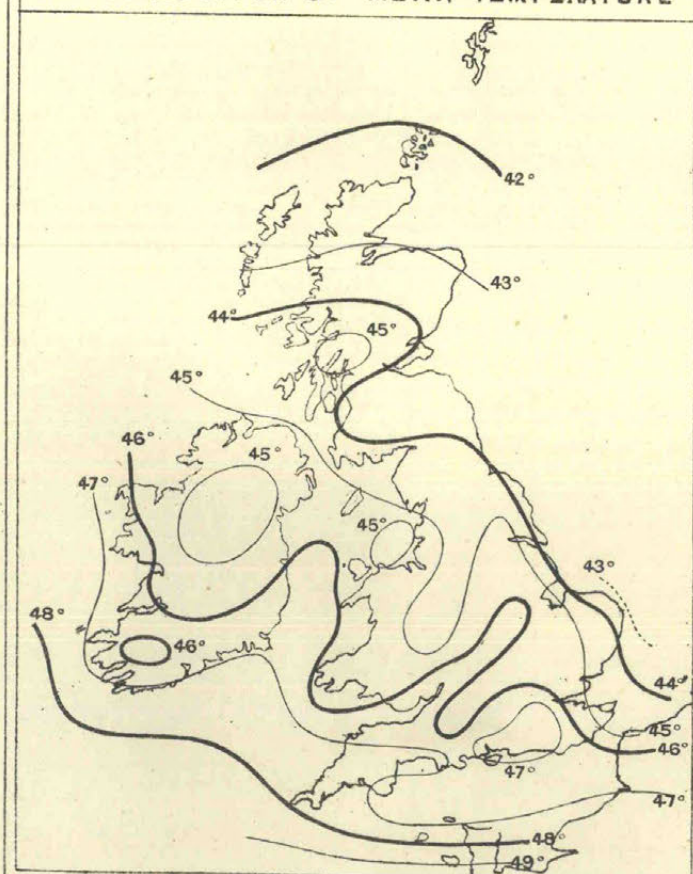
1. BAROMETER AND WIND.



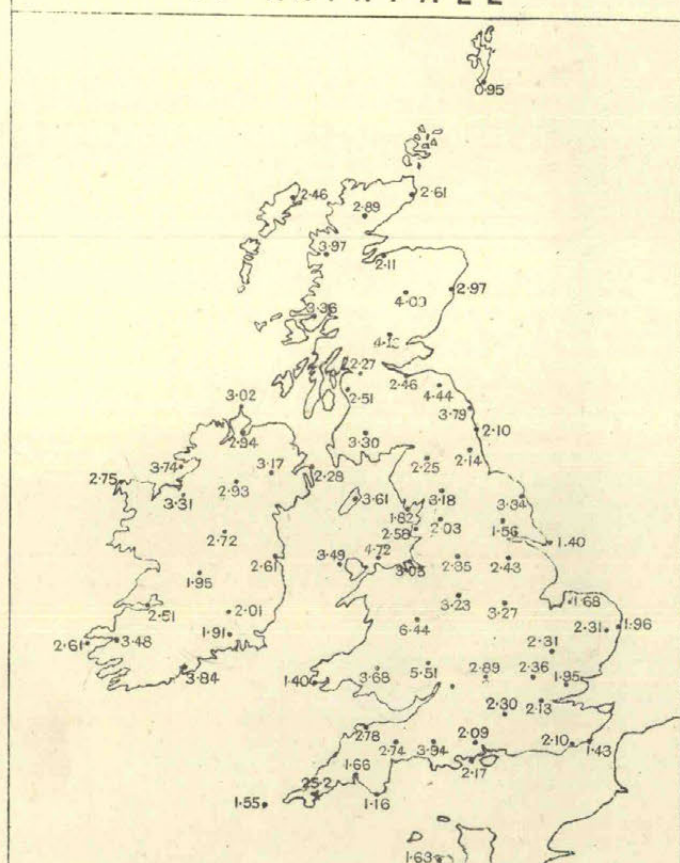
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL



SUMMARY of OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

MAY 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of May was mild and changeable. Pressure was below the average, and except in Scotland, was very uniform. Depressions were few in number and shallow. Temperature was in excess of the average, especially over Scotland, where the difference was as great as 6° ; the winds were light in force and variable in direction. Rainfall was large except over the extreme northern and north-eastern parts of Great Britain and Ireland; but the amount of bright sunshine was also large, especially at the Scotch stations.

Pressure.—*Mean for the Month*, at 8 a.m., varied from 29.89 ins. at Sumburgh Head, 29.85 ins. at Aberdeen, and 29.83 ins. over the south-eastern counties of England, to about 29.73 ins. over the north-western parts of Ireland; the gradients were therefore slight, and favourable for Southerly to South-easterly winds over the western and northern parts of the Kingdom, but for very variable breezes in the south. It was rather higher than that for April in most places, but was below the average for May in the 20 years 1861–80, by about 0.2 in. over Ireland, 0.15 in. over the south-east of England, and rather more than 0.1 in. over Scotland. *Highest* values were recorded very generally on the 20th or 21st, when a high-pressure system of little intensity and irregular form stretched from Russia across the Baltic and North Sea to England and the Bay of Biscay. *Lowest* occurred between the 1st and 3rd, when a well-marked depression lay off our south-west coasts, and a “V”-shaped secondary system stretched eastwards over England. *Range* was very small, less than 0.7 in. in most places.

Depressions were very shallow, few in number, and their movements as a rule were ill-defined. The only well-marked systems were those observed during the earlier part of the month, the movements of which are shown on Map 2, plate v.

Anticyclones.—The only well-defined anticyclonic system which came within the area of our Islands during the month was that of May 20th–21st, and this was of little height (or intensity). As a rule pressure was highest over northern and south-western Europe, while shallow low-pressure systems, of little depth, prevailed over the British Islands, and central Europe.

Wind was mainly South-easterly and Easterly at our northern stations, South-westerly and Westerly in the west and south-west, and alternately South-westerly and North-easterly in the south-east. (See Map 1.) Its force was slight, gales being almost entirely absent except in the south-west and west, and even there they were of little force. Calms were numerous, especially at Nairn, Parsonstown, Sumburgh Head, and Shields.

Temperature.—*Mean, at Sea Level*, ranged from between 56° and 57° over the midland and the southern counties of England, from 55° and more over central Scotland, and from 54° and more over the inland and eastern parts of Ireland, to less than 49° in the Shetlands, to about 50° off our north-east coasts and at the mouths of St. George's and English Channels, and to between 51° and 52° off the extreme western coast of Ireland and the east of England. The summer type of distribution was unusually strongly developed for May, and the crowding in of the isotherms, shown in Map 3, plate v., was due to the cold but light Easterly winds which prevailed so generally at the coast stations, while that in the south-west was due to the winds from the south-westward. Temperature was much higher than that for April in all regions, and exceeded the normal for May by about 2° over central Ireland, 3° over the greater part of England, and by nearly 6° over the inland parts of Scotland. *Highest* values were recorded over Great Britain very generally between the 21st and 23rd, but at some of the extreme eastern and south-eastern coast stations they were recorded on the 24th and 25th. In the west and south of Ireland, however, the greatest heat was recorded on the 27th. *Lowest* values were registered very generally between the 1st and 3rd, or (e.g., over the south of England) on the 10th or 11th. *Range* was considerable, the largest being 44° at Loughborough, 45° at Cambridge, 42° at Hillington and Bawtry, and 41° in London. *Vapour Tension* was as high as 0.35 to 0.39 in. on the southern and eastern coasts of England, 0.36 in. at Stornoway, and exceeded 0.34 in. over the Irish Sea and on the north and north-west coasts of Ireland; it was lowest, 0.31 in., at Leith, and 0.32 in. at Shields, Hawes Junction, and Parsonstown. *Relative Humidity* was high—90 per cent. or more at many of the coast stations, and below 80 per cent. at Liverpool Observatory only.

Rainfall was heavy except in the extreme north and north-east of Great Britain and the extreme north-east of Ireland. The largest aggregates were 6.6 ins. at Valencia, 5.0 ins. at Killarney, 4.9 ins. at Rothamsted, 4.8 ins. at Markree, 4.6 ins. at Mullaghmore, and 4.4 ins. at Stornoway, Laudale, and Glenlee; in several other places it exceeded 4 ins. The smallest amounts were 0.8 ins. at Sumburgh Head, Wick, Lairg, and Nairn.

Bright Sunshine.—Assuming that the total possible duration of sunshine during the month at each station be represented by 100, then the actual values recorded were 43 at Douglas, 42 at Jersey and Hastings, 41 at Geldeston, 39 at Falmouth, Newton Reigny, and Aberdeen, 37 at Pembroke and Hillington, 36 at Braemar and Plymouth, 35 at Blackpool and Valencia, and 33 at Dublin; in Scotland the values were much above the average for May.

[Price Sixpence.]

TABLE IX.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Number of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			Means of				Absolute Extremes.			
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29° 885	48° 5	43° 9	52° 3	48° 1	39	4th	60	22nd
	Wick	29° 825	50° 3	44° 9	56° 1	50° 5	35	26th	70	22nd
	Stornoway	29° 755	51° 8	45° 3	57° 2	51° 3	40	27th	67	7th
1. SCOTLAND, E.	Nairn	29° 791	52° 4	46° 7	61° 8	54° 3	40	3rd, 26th	73	7th, 22nd
	Aberdeen	29° 850	49° 5	45° 0	55° 3	50° 2	41	2nd, 3rd, 4th, 7th, 15th.	68	22nd
	Leith	29° 818	51° 0	44° 4	58° 5	51° 5	40	2nd, 3rd	72	22nd
2. ENGLAND, N.E.	Shields	29° 818	50° 4	45° 1	55° 5	50° 3	41	2nd, 3rd	70	22nd
	York	29° 796	52° 6	46° 6	65° 0	55° 8	41	3rd	78	22nd
	Spurn Head	29° 823	51° 2	46° 6	55° 5	51° 1	41	16th	65	24th
3. ENGLAND, E.	Yarmouth	29° 826	52° 6	48° 0	56° 6	52° 3	42	2nd, 3rd	65	25th
	Cambridge	29° 835	54° 9	47° 0	65° 3	56° 2	37	2nd	81	23rd
4. MIDLAND COUNTIES	Loughborough	29° 835	53° 1	47° 4	65° 1	56° 3	38	2nd	82	22nd
	Oxford	29° 835	52° 9	48° 0	63° 3	55° 7	41	2nd	77	23rd, 24th
5. ENGLAND, S.	London	29° 832	55° 6	49° 3	65° 4	57° 4	41	2nd	82	23rd
	Dungeness	29° 828	53° 5	49° 1	59° 9	54° 5	44	2nd	75	25th
	Hurst Castle	29° 832	54° 8	50° 2	61° 9	56° 1	46	1st, 2nd, 11th, 12th, 19th.	70	6th, 24th, 25th
6. SCOTLAND, W.	Ardrossan	29° 782	53° 0	47° 4	59° 8	53° 6	41	2nd, 3rd	68	6th, 21st
7. ENGLAND, N.W.	Hawes Junction*	28° 591	50° 3	45° 4	59° 7	51° 6	36	2nd	71	20th, 21st, 22nd
	Barrow-in-Furness	29° 799	51° 8	49° 0	60° 3	54° 7	42	2nd	71	6th
	Liverpool	29° 815	54° 0	48° 5	61° 6	55° 1	40	2nd	72	22nd
	Holyhead	29° 795	52° 5	47° 5	57° 5	52° 5	41	2nd	65	21st
8. ENGLAND, S.W.	Pembroke	29° 793	50° 9	44° 2	54° 8	49° 5	44	1st	62	21st
	Prawle Point	29° 822	54° 2	47° 2	58° 0	52° 6	40	1st	66	23rd
9. IRELAND, N.	Malin Head	29° 731	51° 7	47° 9	56° 7	52° 3	42	2nd	67	21st
	Donaghadee	29° 790	51° 1	48° 1	56° 7	52° 4	42	1st	63	22nd
	Mullaghmore	29° 729	52° 4	47° 7	58° 7	53° 2	42	3rd	69	21st
	Belmullet	29° 731	51° 8	47° 6	56° 0	51° 8	43	15th, 25th	61	27th
10. IRELAND, S.	Parsonstown	29° 758	52° 1	46° 4	61° 4	53° 9	37	25th	73	21st
	Valencia	29° 753	53° 1	47° 1	56° 9	52° 0	40	2nd, 12th	61	27th
	Roche's Point	29° 759	52° 5	48° 3	56° 8	52° 6	44	7th	62	25th, 27th
CHANNEL ISLANDS	Scilly (St. Mary's)	29° 789	53° 1	49° 0	56° 9	53° 0	44	1st	63	22nd
	Jersey	29° 850	55° 5	49° 5	61° 1	55° 3	42	3rd, 13th	72	24th

* Hawes Junction is 1,135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, MAY 1889.

xix

REPORTING STATIONS in the BRITISH ISLANDS during the Month of MAY 1889.

Thunderstorms, and Gales are counted irrespective of the Hours at which they occurred.
beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of									
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.	
ins. 0'302	% 89	7'3	ins. 0'81	ins. 0'19	24th	11	0	0	0	0	16	0	1	8	4	8	3	0	0	0	7	
'324	89	7'3	0'77	0'15	2nd	15	0	0	1	4	16	1	1	0	1	9	13	2	0	2	3	
'361	93	7'8	4'36	0'78	28th	19	0	0	0	1	19	0	1	0	5	11	8	4	1	0	1	
'325	83	6'5	0'82	0'26	21st	11	0	0	0	4	11	0	0	2	7	1	0	0	2	0	19	
'304	87	7'1	1'32	0'26	28th	10	0	0	0	0	15	1	2	4	9	7	6	0	1	1	1	
'309	82	7'7	1'36	0'34	28th	14	0	0	2	1	17	0	0	6	9	7	1	2	2	1	3	
'320	88	8'0	1'47	0'42	27th	13	0	0	0	1	17	0	5	4	3	2	5	3	1	1	7	
'345	87	6'8	3'66	1'50	10th	15	0	0	1	7	16	0	9	4	5	5	3	2	1	2	0	
'325	86	6'9	2'69	0'66	27th	13	0	2	4	2	14	0	6	9	4	4	5	2	0	0	1	
'361	91	4'7	2'93	0'94	10th	17	0	0	2	15	7	0	6	4	1	6	4	5	1	1	3	
'376	88	7'2	4'13	1'12	11th	18	0	2	4	3	16	0	11	1	2	1	6	5	0	4	3	
'351	86	8'4	3'67	0'99	11th	16	0	0	5	1	19	0	3	10	3	3	4	2	2	3	1	
'341	85	8'2	3'22	1'43	26th	17	0	2	4	4	22	0	3	6	3	2	7	5	1	2	2	
'357	80	8'2	3'66	0'90	25th	16	0	1	4	1	19	0	2	7	2	2	4	7	2	2	3	
'351	85	7'4	2'32	0'59	27th	10	0	0	2	2	13	0	1	2	6	1	3	11	4	1	2	
'392	91	6'9	2'20	1'65	26th	14	0	1	1	0	8	2	3	6	2	2	4	7	5	2	0	
'342	85	6'8	3'10	0'70	11th	16	0	0	0	1	13	0	0	11	8	1	4	1	2	1	3	
'316	87	7'1	3'90	0'91	30th	18	1	2	4	5	18	0	1	5	7	6	6	0	1	1	4	
'341	88	7'5	3'83	0'75	5th	17	0	0	2	1	15	2	2	9	3	8	0	4	0	5	0	
'322	77	6'5	2'46	0'55	30th	16	0	0	3	8	16	0	3	2	3	12	5	1	1	4	0	
'342	87	7'0	1'82	0'60	5th	17	0	0	1	1	13	0	1	2	2	2	11	7	0	2	4	
'349	94	6'9	2'63	0'80	17th	16	0	0	0	0	13	5	2	0	2	6	8	3	3	7	0	
'355	84	6'2	1'70	0'39	16th	16	0	0	3	5	13	3	4	2	5	3	5	3	4	3	2	
'344	89	8'3	3'22	0'67	23rd	18	0	0	4	2	22	1	1	1	3	5	15	2	1	1	2	
'347	92	6'2	2'41	0'52	9th	18	0	0	3	0	5	2	1	4	2	9	9	4	1	1	0	
'325	83	7'4	4'56	0'64	23rd	25	0	0	1	3	13	4	1	0	6	8	7	4	2	1	2	
'348	90	8'7	3'69	0'44	27th, 28th	21	0	0	0	0	22	0	0	1	1	7	7	6	5	4	0	
'319	81	8'1	3'22	0'75	5th	21	0	0	0	0	19	0	0	1	1	6	0	2	0	0	21	
'334	82	7'6	6'58	1'07	2nd	24	0	0	0	0	14	1	4	1	1	7	4	4	3	4	3	
'332	84	6'2	4'10	0'70	2nd	17	0	0	0	0	8	3	4	1	0	3	8	8	3	4	0	
'351	86	7'2	1'90	0'28	4th	16	0	0	0	2	14	5	3	1	3	1	4	5	7	7	0	
'357	81	6'4	1'54	0'30	6th	12	0	0	3	5	12	2	1	3	3	4	2	7	3	7	1	

barometrical observations at this station are not reduced for altitude.

TABLE X.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of MAY 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Per-centages of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STONKOWAY	*	*	*	*	*	*	*	*	*	*	*	151'4	30
LAIRG	43'4	62'2	52'8	37	27th	70	19th, 21st, 22nd	13	0'79	0'17	30th	—	—
GLENCARRON	45'5	62'5	54'0	38	16th, 26th	74	6th, 7th	16	1'90	0'36	28th	103'0	20
FORT AUGUSTUS	—	—	—	—	—	—	—	—	—	—	—	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	197'9	39
BRAEMAR	42'7	61'1	51'9	36	13th	71	6th, 21st	9	1'33	0'43	14th	180'0	36
OCHTERTYRE	44'4	63'0	53'7	36	1st	76	21st	16	3'85	1'01	14th	—	—
MARCHMONT	44'4	61'8	53'1	39	30th	75	21st	15	2'20	0'63	24th	161'0	32
ALNWICK CASTLE	45'3	56'6	51'0	39	25th	68	22nd, 24th	12	2'16	0'69	10th	—	—
DURHAM	44'7	62'6	53'7	37	26th	75	21st, 22nd, 23rd	13	1'50	0'33	27th	144'5	29
SCARBOROUGH	46'2	56'7	51'5	41	2nd	70	22nd, 23rd	15	2'41	0'63	27th	143'6	29
YORK	*	*	*	*	*	*	*	*	*	*	*	134'4	27
HILLINGTON	47'0	63'7	55'4	39	3rd	81	23rd	15	2'67	0'99	10th	177'7	37
GELDESTON	47'0	63'0	55'0	41	3rd, 5th	78	23rd	12	2'69	0'66	27th	197'2	41
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	165'1	34
ROTHAMSTED	47'0	62'6	54'8	37	2nd	78	23rd	15	4'85	2'11	26th	—	—
INGATESTONE	47'3	63'3	55'3	38	2nd	78	23rd	14	3'05	1'06	11th	—	—
BAWTRY	46'5	64'4	55'5	38	2nd	80	22nd	16	3'71	0'76	10th	126'6	26
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	129'6	27
CHEADLE	46'4	61'5	54'0	39	2nd	74	22nd	17	3'64	0'79	5th	—	—
CHURCHSTOKE	44'9	62'7	53'8	38	2nd	75	22nd, 23rd	19	4'08	0'82	9th	143'2	29
HEREFORD	47'3	64'3	55'8	41	1st	80	23rd	17	3'08	0'71	24th	—	—
CIRENCESTER	45'6	62'1	53'9	39	2nd	75	24th	14	3'69	1'57	24th	139'3	29
OXFORD	*	*	*	*	*	*	*	*	*	*	*	124'1	26
LONDON	*	*	*	*	*	*	*	*	*	*	*	134'0	28
STRATHFIELD TURGIS-	47'7	64'5	56'1	40	2nd	79	23rd, 24th	20	3'36	1'70	26th	—	—
HASTINGS	49'8	61'8	55'8	42	2nd	73	23rd, 24th, 25th	11	1'42	0'40	26th	200'3	42
SOUTHAMPTON	49'9	65'0	57'5	44	11th	80	23rd	16	2'71	1'21	26th	152'6	32
STOWELL	47'1	61'2	54'2	41	1st, 11th	72	23rd, 24th	17	2'32	0'46	26th	128'3	27
LAUDALE	47'8	61'8	54'8	40	6th	73	6th	20	4'35	0'91	7th	—	—
GLASGOW	46'8	61'0	53'9	41	2nd	74	21st	18	3'80	0'71	14th	127'1	25
GLENLEE	44'5	62'4	53'5	36	27th	75	21st	20	4'37	0'58	10th, 13th	—	—
DOUGLAS	46'4	58'9	52'7	40	16th, 26th	69	21st	16	2'64	0'37	5th, 9th	209'0	43
NEWTON REIGNY	44'3	63'0	53'7	35	2nd	76	21st	15	3'20	0'74	18th	194'8	39
STONYHURST	46'5	62'0	54'3	39	26th	72	20th, 21st, 22nd	16	2'93	0'44	30th	145'5	30
BLACKPOOL	47'2	62'6	54'9	38	2nd	71	7th	17	4'05	0'70	30th	170'9	35
MANCHESTER	47'6	63'0	55'3	40	2nd	74	22nd	14	3'33	0'61	11th	—	—
LLANDUDNO	47'5	59'9	53'7	41	2nd	68	21st	15	2'53	0'47	16th	141'9	29
LLANDOVERY	45'2	64'0	54'6	34	10th	80	21st	19	3'91	0'86	17th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	178'2	37
ARLINGTON	45'2	59'0	52'1	35	11th	70	21st	16	3'68	0'90	31st	—	—
CULLOMPTON	46'8	62'9	54'9	34	11th	73	21st, 23rd	20	2'86	0'37	16th	146'2	31
FALMOUTH	47'8	58'3	53'1	43	2nd, 14th	65	21st, 24th	18	4'04	0'72	8th	184'5	39
PLYMOUTH	49'0	62'8	55'9	40	14th	70	19th, 23rd, 27th	14	2'58	0'68	17th	171'5	36
JERSEY	*	*	*	*	*	*	*	*	*	*	*	195'7	42
LONDONDERRY	47'4	62'6	55'0	42	15th, 25th	74	21st	14	2'71	0'56	5th	—	—
MARKREE CASTLE	45'3	59'1	52'2	37	25th	69	21st	21	4'76	0'67	23rd	136'1	28
BROOKEBOROUGH	45'1	60'1	52'6	36	12th, 25th	72	21st	13	3'68	0'87	5th	—	—
ARMAGH	46'2	60'3	53'3	38	25th	72	21st	20	3'06	0'61	5th	127'7	26
EDGEWORTHSTOWN	44'9	61'1	53'0	37	1st, 11th, 15th, 25th	73	21st	21	3'84	0'57	14th	—	—
DUBLIN	48'4	60'7	54'6	41	11th	73	21st	17	2'13	0'51	5th	158'4	33
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	145'9	30
KILKENNY CASTLE	46'4	60'2	53'3	38	25th	71	21st	20	3'03	0'67	5th	—	—
WATERFORD	46'1	60'2	53'2	38	25th, 27th	68	27th	16	3'32	0'62	5th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	168'6	35
KILLARNEY	45'1	58'2	51'7	34	12th	66	21st	18	5'04	0'86	2nd	—	—
FOYNES	47'3	58'9	53'1	40	6th	70	21st	16	3'00	0'49	7th	—	—

* For information see Table IX.

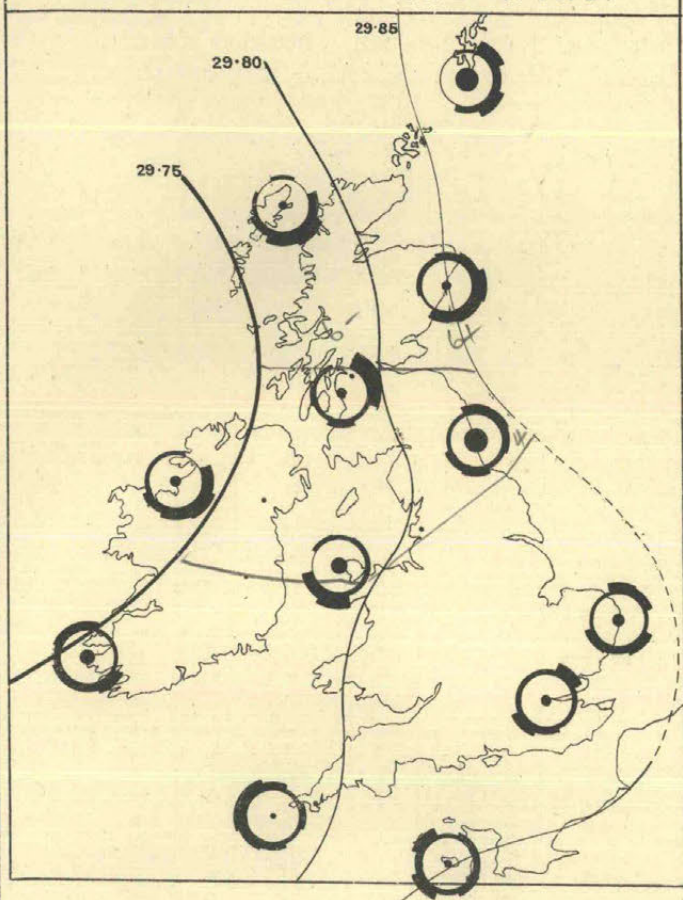
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Thurstaston.

MONTHLY WEATHER CHART. MAY 1889.

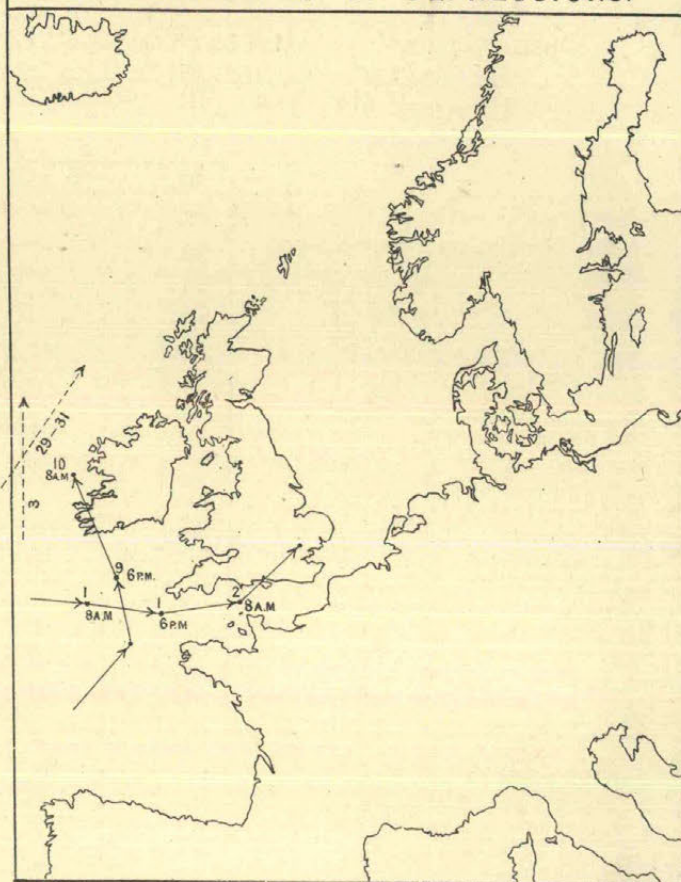
Monthly Summary.

Plate v.

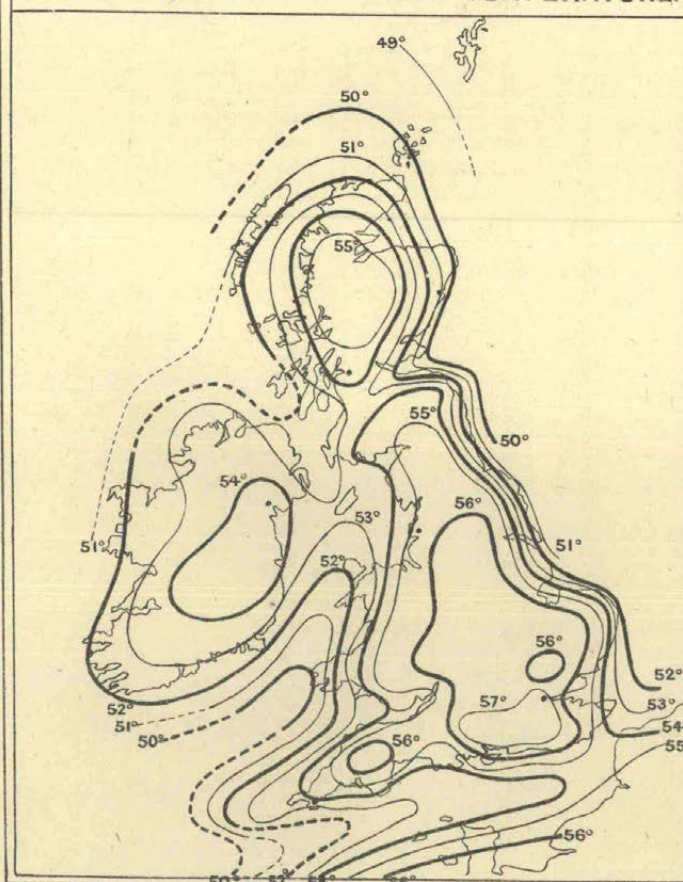
1. BAROMETER AND WIND.



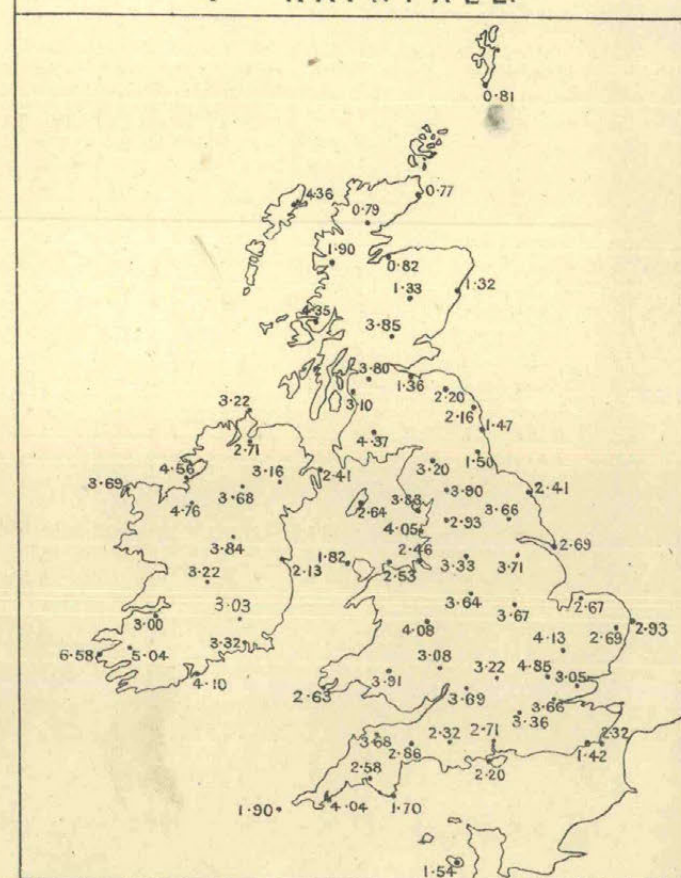
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE.



4. RAINFALL.



SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

JUNE 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The month of June was fine, quiet, and warm. Pressure was very uniform and in excess of the average, especially at the northern stations. Temperature was high, but the maxima were not at all excessive. The winds were light and variable, gales rare, and calms frequent. Rainfall was very slight except over some parts of the eastern counties, and the amount of bright sunshine was large, especially in the west and north.

Pressure.—*Mean for the Month* varied between 30·00 ins. and 30·07 ins. over nearly the whole of England and Wales, the southern and eastern parts of Scotland, and the southern and eastern parts of Ireland, to a little less than 30·00 ins. in the Hebrides, and to about 30·00 ins. over the extreme south-east of England and north-east of France. The distribution was therefore anticyclonic, and gradients were very slight. It largely exceeded that for May in all parts of the kingdom, and was in excess of the average* for June by about 0·12 in. over Ireland, 0·14 in. over central England, and 0·16 in. to 0·20 in. over the Hebrides, the north of Scotland and the Shetland Isles. *Highest* values were recorded very generally on the 5th, when the readings exceeded 30·5 ins. over many districts. *Lowest* were registered at the most western stations on the 1st, and at the eastern stations on the 7th. *Range* was small—less than an inch in most places.

Depressions were very few in number, the most important being those which moved in a northerly direction outside our extreme western coasts during the first few days of the month, and whose movements are shown approximately on Map 2, Plate VI.

Anticyclones.—Anticyclonic conditions were very prevalent in our neighbourhood during the month, but the only systems which passed directly over the kingdom were those of the 4th–6th, 16th–23rd, and the 25th–26th.

Wind was chiefly South-westerly in the Hebrides and north-west of Scotland, and chiefly North-easterly in the east and south; elsewhere it was very variable, but a predominance of local wind from North-East is shown on the north-western coast of England and the south-west of Scotland. Gales were very few in number, but calms numerous, especially at Parsonstown, Nairn, Holyhead, Sumburgh Head, and Ardrossan.

Temperature.—*Mean, at Sea Level*, ranged from between 60° and 63° over the inland counties of England, and from between 58° and 60° over central Scotland, to about 53° at Sumburgh Head, 56° to 58° along our east coast, and to about 57° at Holyhead, Pembroke, and Scilly. In Ireland it ranged from above 59° in the neighbourhood of Dublin, to less than 56° at Markree Castle as well as off the extreme north-coast. The summer type of distribution was very strongly developed, especially over the extreme north-eastern and eastern parts of Great Britain, where the effects of the cool winds coming, from the sea, into contact with the heated air over the land, caused the isotherms to be crowded very closely together. It was much higher than that for May in all districts, the change being as much as four to five degree over Ireland, six to seven degrees over central Scotland, and five to six degrees over England. *Highest* values were recorded on very variable dates, the maxima having occurred on the 2nd or 3rd over our eastern and south midland counties, on the 19th in the extreme west, on the 20th or 21st in the north-west, and on the 26th or 27th at our southern and north-eastern stations. *Lowest* occurred in nearly all districts on the 10th or 11th, but on the 8th low values were recorded over the central and southern parts of Ireland, and also on the 5th at the Welsh stations, and on the 13th over the west midlands. *Range* was not large as a rule, but amounted to 45° at Ochertyre and 43° at Leith. *Vapour Tension* was as high as 0·40 in. to 0·44 in. on the coasts of the English Channel and over the eastern counties of England, and exceeded 0·38 in. in the south of Ireland and on the shores of the Irish Channel, as well as in the Hebrides. It was, however, less than 0·35 in. in the east of Scotland and the Shetlands, and was as low as 0·34 in. at Aberdeen. *Relative Humidity* was as high as 90 per cent. in the Hebrides, but as low as 75 in London and at Leith, and 72 at Bidston and Aberdeen observatories. Its distribution was very irregular.

Rainfall was very deficient, the total amounts recorded being less than an inch at the majority of the stations, and as low as 0·09 in. at Collumpton, 0·10 in. at Dublin, 0·17 in. at Spurn Head, 0·25 in. at Shields, 0·26 in. at Armagh, 0·34 in. at Hurst Castle, 0·36 in. at York and Malin Head. Over Norfolk and the home counties the fall was largely in excess of that in surrounding regions, owing to the heavy thunderstorms which occurred there between the 6th and 9th.

Bright Sunshine was greatly in excess of the average over the western and north-western parts of Great Britain, no less than 64 per cent. of the possible duration having been recorded at Pembroke, 55 per cent. at Douglas, Isle of Man, 52 at Dublin, 51 at Newton Reigny, and 50 at Stonyhurst; even at Aberdeen the per-centage was 47; there were only six stations (viz., Stornoway, Glen Carron, London, Stowell, Markree Castle, and Parsonstown) at which the per-centage was less than 40; at Hastings also the per-centage (54) was very large.

* The averages employed are—*Pressure and Temperature*, for the 20 years 1861–80; *Rainfall* for 20 years 1866–85.

TABLE XI.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Numbers of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head - - -	ins. 30°027	53°4	47°6	57°7	52°7	42	9th, 10th, 11th, 17th, 22nd.	62	5th
	Wick - - -	30°032	56°8	47°6	62°3	55°0	36	10th	71	28th
	Stornoway - - -	29°993	55°2	46°9	59°3	53°1	34	10th	67	6th
1. SCOTLAND, E.	Nairn - - -	30°019	56°8	49°3	65°8	57°6	38	10th	79	26th
	Aberdeen - - -	30°064	56°8	48°4	62°4	55°4	41	10th	74	26th
	Leith - - -	30°058	57°5	49°2	65°5	57°4	37	11th	80	26th
2. ENGLAND, N.E.	Shields - - -	30°055	57°0	49°9	62°3	56°1	43	11th	75	26th
	York - - -	30°052	58°5	50°6	71°6	61°1	46	11th	81	27th
	Spurn Head - - -	30°052	56°8	52°2	61°9	57°1	48	1st	72	3rd
3. ENGLAND, E.	Yarmouth - - -	30°034	57°9	52°9	62°7	57°8	49	11th, 13th, 14th	70	3rd
	Cambridge - - -	30°052	59°4	50°2	70°1	60°2	44	1st	83	2nd
4. MIDLAND COUNTIES	Loughborough - - -	30°073	58°2	51°2	72°3	61°8	45	16th	84	2nd
	Oxford - - -	30°057	57°5	51°6	69°2	60°4	48	1st, 10th, 11th, 18th, 19th.	79	27th
5. ENGLAND, S.	London - - -	30°037	60°3	53°4	71°9	62°7	47	1st	83	6th
	Dungeness - - -	30°004	60°0	53°9	65°8	59°9	46	25th	74	2nd, 26th
	Hurst Castle - - -	30°038	60°4	54°2	68°9	61°6	49	13th	80	26th, 27th
6. SCOTLAND, W.	Ardrossan - - -	30°051	57°5	50°4	64°5	57°5	43	11th	75	21st
7. ENGLAND, N.W.	Hawes Junction* - - -	28°838	54°9	46°0	64°9	55°5	37	11th	74	22nd
	Barrow-in-Furness - - -	30°051	56°5	52°6	64°6	58°6	42	11th	72	20th
	Liverpool - - -	30°069	59°0	52°3	66°6	59°5	46	1st	74	2nd
	Holyhead - - -	30°062	58°3	51°7	62°8	57°3	48	5th, 11th	71	21st
8. ENGLAND, S.W.	Pembroke - - -	30°051	57°3	52°5	61°8	57°2	49	5th, 11th, 16th	73	22nd
	Prawle Point - - -	30°038	59°1	51°1	64°6	57°9	46	9th, 11th, 13th	76	27th
9. IRELAND, N.	Malin Head - - -	30°027	55°0	51°4	60°5	56°0	48	10th, 11th, 13th	67	24th
	Donaghadee - - -	30°073	56°4	53°0	62°8	57°9	49	10th	72	21st
	Mullaghmore - - -	30°043	56°3	50°6	62°5	56°6	45	5th, 11th	71	19th
	Belmullet - - -	30°035	56°6	51°6	61°0	56°3	46	11th, 14th	71	18th, 19th, 23rd
10. IRELAND, S.	Parsonstown - - -	30°065	55°9	47°9	67°0	57°5	38	8th	78	21st
	Valencia - - -	30°061	58°5	50°6	63°1	56°9	42	11th	70	21st, 22nd
	Roche's Point - - -	30°054	57°6	51°7	63°7	57°7	47	8th	71	22nd, 26th
CHANNEL ISLANDS	Scilly (St. Mary's) - - -	30°024	58°5	53°8	61°9	57°9	49	3rd	67	17th, 22nd, 23rd, 25th.
	Jersey - - -	30°022	60°2	54°6	66°5	60°6	44	1st	77	25th

* Hawes Junction is 1.135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, JUNE 1889.

xxiii

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of JUNE 1889.

Thunderstorms, and Gales are counted irrespective of the hours at which they occurred,
beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calm.
ins. 0.348	% 85	7.8	ins. 0.43	ins. 0.18	14th	8	0	0	0	1	16	0	3	6	0	4	3	5	3	1	5
*370	80	6.2	1.03	0.50	2nd	11	0	1	3	8	13	0	2	0	6	5	8	0	1	6	2
*390	90	7.0	0.90	0.20	11th	14	0	0	0	3	12	4	2	2	2	1	6	9	5	0	3
*364	78	4.6	0.45	0.23	2nd	7	0	0	2	6	3	0	0	0	5	0	0	7	6	0	12
*335	72	5.6	0.65	0.42	6th	9	0	0	3	3	6	0	6	4	4	5	6	1	2	2	0
*356	75	6.8	1.12	0.45	6th	4	0	0	2	2	12	0	2	4	8	0	1	3	9	0	3
*364	78	7.0	0.25	0.12	9th	3	0	0	0	2	10	0	7	3	7	0	3	4	3	1	2
*386	78	5.1	0.36	0.25	8th	3	0	0	0	10	6	0	8	5	4	1	2	1	5	3	1
*391	84	6.7	0.17	0.12	2nd	4	0	0	2	5	15	1	6	11	2	3	1	3	2	0	2
*428	89	4.7	2.24	1.10	9th	6	0	0	2	11	5	1	8	10	2	2	1	0	2	2	3
*419	84	7.1	2.58	0.82	6th	6	0	0	3	4	17	0	12	6	3	1	3	1	2	2	0
*396	81	7.8	0.82	0.36	28th	6	0	0	2	2	15	0	2	9	3	2	1	3	3	4	3
*391	82	6.2	1.86	1.06	7th	9	0	1	4	9	13	0	5	12	2	1	5	2	2	1	2
*391	75	7.0	2.18	0.84	9th	7	0	1	2	7	16	0	2	10	7	2	1	2	3	2	1
*417	81	6.5	0.41	0.32	9th	5	0	0	1	0	5	3	5	9	6	2	1	4	2	0	1
*450	87	6.3	0.34	0.11	15th	8	0	0	1	1	4	1	4	12	6	0	0	4	2	2	0
*372	78	5.1	1.12	0.75	2nd	4	0	0	1	10	12	0	1	9	1	1	5	2	3	4	4
*350	82	5.2	1.59	1.43	2nd	4	0	0	1	9	12	0	2	7	6	4	1	5	1	1	3
*384	84	5.6	1.29	0.45	9th	7	0	0	1	1	8	0	4	10	4	3	1	4	0	4	0
*357	72	5.4	0.85	0.50	2nd	6	0	0	1	9	8	0	2	3	4	7	2	1	7	4	0
*386	79	4.0	0.76	0.31	2nd	8	0	0	1	7	5	0	3	5	3	0	4	3	1	4	7
*401	85	4.7	0.39	0.21	8th	4	0	0	1	2	2	3	5	6	3	5	6	1	1	2	1
*409	82	5.2	0.41	0.12	19th	9	0	0	3	8	9	0	8	8	3	0	2	3	4	1	1
*359	83	6.9	0.36	0.12	13th	8	0	0	0	4	17	1	2	1	3	5	6	7	4	2	0
*391	86	5.5	0.48	0.25	2nd	9	0	0	0	3	1	1	2	9	3	4	3	2	3	4	0
*356	78	5.8	1.05	0.32	13th	9	0	0	0	10	9	4	3	2	4	6	5	3	4	3	0
*373	81	7.3	0.88	0.27	1st	8	0	0	0	5	18	2	3	2	2	1	6	8	6	2	0
*361	81	7.7	1.20	0.24	2nd	12	0	0	1	0	15	0	0	2	0	4	0	2	0	4	18
*392	79	6.1	1.29	0.57	1st	11	0	0	0	1	9	3	4	2	0	5	3	3	3	3	7
*379	80	4.7	2.01	1.10	1st	6	0	0	0	0	6	3	10	0	3	4	2	3	2	6	0
*406	82	6.7	0.38	0.13	2nd	7	0	0	0	5	11	2	5	10	2	1	3	3	2	3	1
*423	82	6.4	3.50	1.92	19th	6	0	0	5	5	16	0	2	8	7	0	2	2	4	4	1

barometrical observations at this station are not reduced for altitude.

TABLE XII.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of JUNE 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentages of possible Duration.
	Minima.	Maxima.	Max. and Min. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	179'8	34
LAIRG	46'2	65'0	55'6	29	10th	77	26th	7	0'56	0'16	2nd	—	—
GLENCARRON	47'8	64'0	55'9	35	10th	77	21st	15	1'71	0'50	8th	158'4	30
FORT AUGUSTUS	48'9	65'6	57'3	34	10th	79	26th	9	0'80	0'50	2nd	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	244'6	47
BRAEMAR	45'8	67'4	56'6	38	5th, 11th	78	21st	8	0'74	0'38	2nd	217'0	41
OCHTERTYRE	47'8	69'6	58'7	37	10th	82	22nd	8	0'93	0'56	2nd	—	—
MARCHMONT	47'4	66'2	56'8	37	11th	77	26th	9	0'86	0'48	2nd	253'3	49
ALNWIKE CASTLE	49'0	62'2	55'6	38	10th	71	27th	5	0'59	0'25	8th	—	—
DURHAM	48'1	68'1	58'1	40	11th	80	26th	6	0'37	0'23	9th	214'1	42
SCARBOROUGH	52'0	64'2	58'1	48	1st, 7th	74	26th	7	0'37	0'12	2nd	†225'2	45
YORK	*	*	*	*	*	*	*	*	*	*	*	238'0	47
HILLINGTON	49'8	68'7	59'3	43	13th	85	2nd	5	2'09	1'23	6th	206'9	41
GELDESTON	50'7	67'1	58'9	46	4th, 19th	77	2nd	4	1'71	0'95	9th	213'6	43
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	214'4	43
ROTHAMSTED	50'6	68'3	59'5	45	1st, 18th	80	2nd	6	1'28	0'46	10th	—	—
INGATESTONE	50'6	69'6	60'1	45	1st	80	6th	3	1'62	0'83	10th	—	—
BAWTRY	50'7	71'7	61'2	45	15th	83	2nd	3	0'40	0'16	9th, 28th	†205'6	41
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†208'7	42
CHEADLE	50'1	67'3	58'7	45	1st, 24th	75	2nd, 6th, 27th, 28th.	6	0'57	0'24	1st	—	—
CHURCHSTOKE	47'4	68'6	58'0	40	13th	77	22nd, 27th	4	0'41	0'22	1st	216'1	43
HEREFORD	50'0	71'3	60'7	43	13th	80	22nd	5	0'48	0'30	1st	—	—
CIRENCESTER	49'4	68'3	58'9	41	13th	77	26th, 27th	6	1'01	0'53	1st	205'6	42
OXFORD	*	*	*	*	*	*	*	*	*	*	*	208'2	42
LONDON	*	*	*	*	*	*	*	*	*	*	*	190'0	39
STRATHFIELD TURGIS	50'7	70'6	60'7	42	10th	81	27th	11	1'12	0'42	2nd	—	—
HASTINGS	54'0	68'0	61'0	49	14th, 19th	80	6th	5	0'43	0'30	9th	265'0	54
SOUTHAMPTON	53'3	71'0	62'6	48	1st, 19th	84	27th	7	0'41	0'16	7th	229'0	47
STOWELL	51'6	67'4	59'5	45	13th	77	26th	8	0'99	0'37	1st	177'3	36
LAUDALE	50'8	64'8	57'8	41	10th	74	21st	12	1'75	0'82	2nd	—	—
GLASGOW	49'8	66'6	58'2	42	11th	78	22nd	5	0'98	0'74	2nd	211'9	41
GLENLEE	46'4	67'6	57'0	33	11th	77	18th, 21st	10	0'86	0'38	2nd	—	—
DOUGLAS	49'7	64'6	57'2	40	11th	74	18th, 22nd	8	0'40	0'13	6th	276'9	55
NEWTON REIGNY	45'5	68'1	56'8	33	11th	77	2nd, 21st	5	0'92	0'53	1st	262'2	51
STONYHURST	50'0	68'1	59'1	44	16th	76	22nd	5	2'00	1'40	2nd	253'8	50
BLACKPOOL	50'8	67'8	59'3	43	11th	78	21st	5	0'66	0'24	2nd	245'9	49
MANCHESTER	50'6	68'5	59'6	45	16th	78	22nd	3	0'86	0'62	1st	—	—
LLANDUDNO	51'9	65'6	58'8	46	16th	74	22nd	5	0'62	0'30	8th	208'2	42
LLANDOVERY	47'9	72'1	60'0	41	12th, 15th	83	26th	7	0'73	0'40	9th	—	—
PMBROKE	*	*	*	*	*	*	*	*	*	*	*	316'5	64
ARLINGTON	49'9	66'5	58'2	42	12th	73	5th, 6th, 22nd, 26th.	7	0'49	0'13	14th	—	—
CULLOMPTON	50'2	69'6	59'9	43	19th	78	26th, 27th	4	0'09	0'03	14th	220'7	45
FALMOUTH	52'9	64'7	58'8	48	12th	73	22nd, 26th	8	0'80	0'41	19th	228'5	47
PLYMOUTH	54'6	70'5	62'6	48	12th	81	6th	10	0'91	0'39	19th	207'4	43
JERSEY	*	*	*	*	*	*	*	*	*	*	*	219'5	46
LONDONDERRY	49'3	68'9	59'1	45	8th, 14th	80	23rd, 24th	7	0'43	0'14	14th	—	—
MARKREE CASTLE	46'5	63'9	55'2	38	8th, 14th	74	18th, 19th, 23rd	9	0'89	0'32	13th	184'8	37
BROOKBOROUGH	47'1	66'2	56'7	38	8th	77	21st	6	0'53	0'21	1st	—	—
ARMAGH	47'7	66'4	57'1	39	8th	75	21st	7	0'26	0'08	13th	224'9	45
EDGEWORTHSTOWN	46'7	66'4	56'6	39	8th	74	18th, 21st, 22nd	9	0'98	0'41	1st	—	—
DUBLIN	52'0	67'0	59'5	41	11th	75	22nd	6	0'10	0'03	8th	260'9	52
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	190'9	38
KILKENNY CASTLE	48'1	66'9	57'5	37	11th	77	22nd	6	0'86	0'59	1st	—	—
WATERFORD	47'5	68'6	†58'1	36	11th	76	6th, 22nd, 26th	5	1'15	0'95	1st	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	242'6	49
KILLARNEY	48'3	65'7	57'0	37	8th	76	18th	9	1'96	1'25	1st	—	—
FOYNES	50'7	65'2	58'0	43	7th, 9th	76	18th	10	0'66	0'25	1st	—	—

* For information see Table

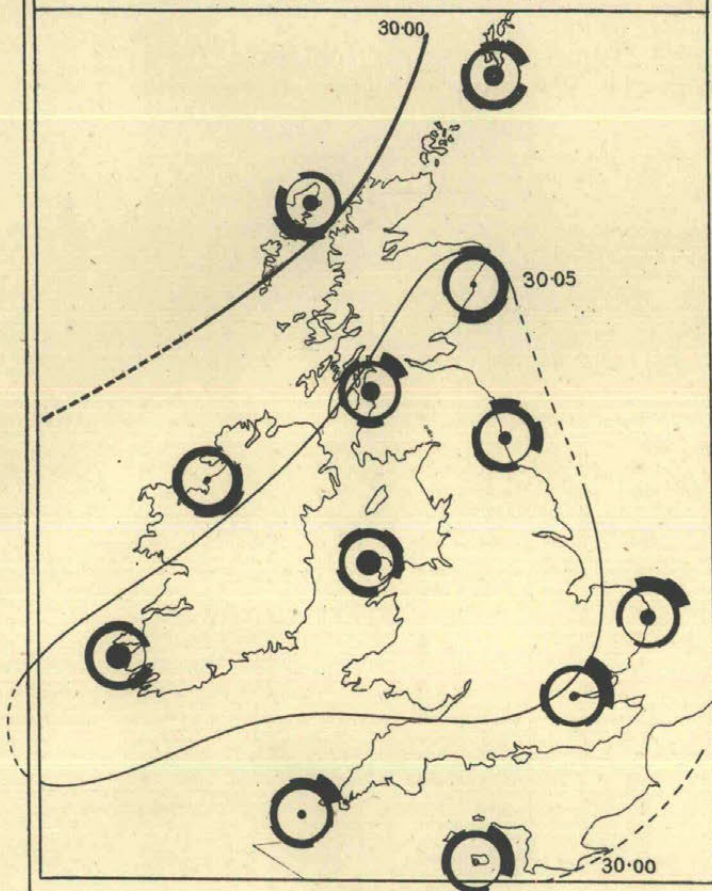
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those to Bawtry at Worksop, and those to Loughborough at Thurstaston.

MONTHLY WEATHER CHART JUNE 1889.

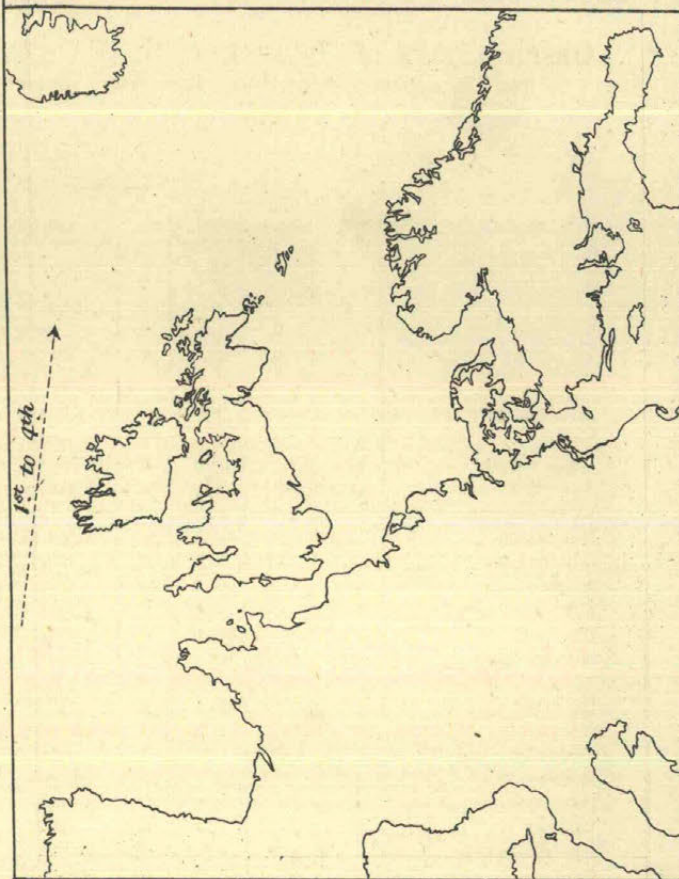
Monthly Summary

Plate VI.

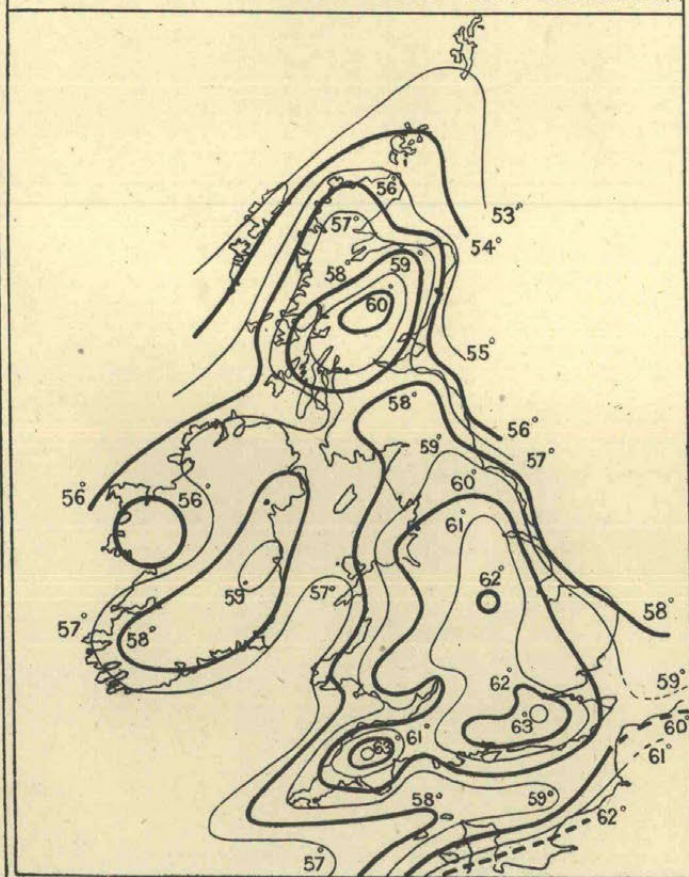
1. BAROMETER AND WIND.



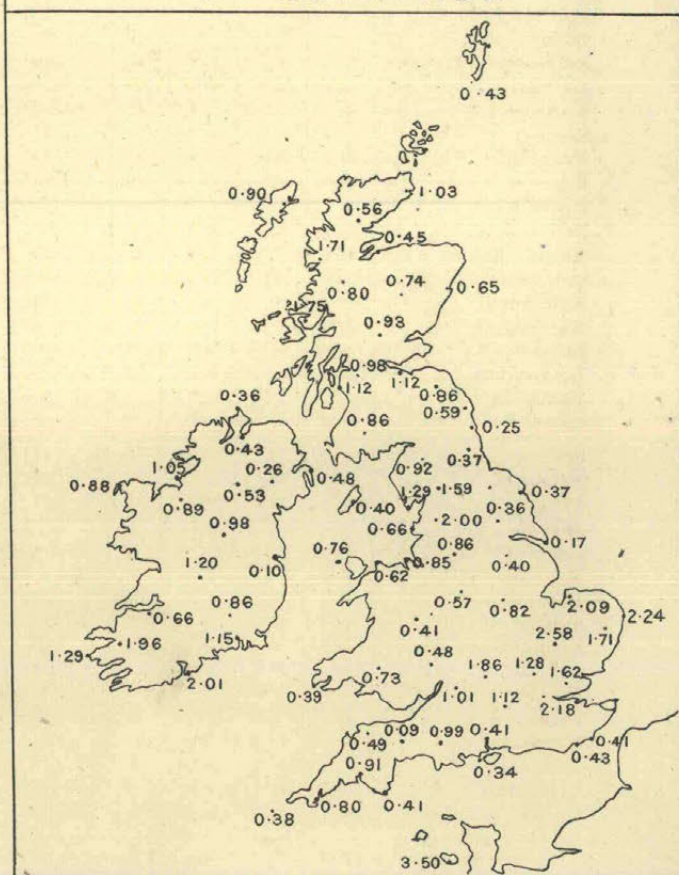
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE.



4 RAINFALL.



SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS for the CALENDAR MONTH,

JULY 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of July was fine and bright at first, then colder, very changeable, and showery; thunderstorms were of frequent occurrence over England, and some of the local showers were exceedingly heavy (see fall at Rothamsted on the 12th). Pressure was slightly below the average, but the means were very uniform in value; depressions were not deep, nor were the anticyclones of great intensity. Wind was light and variable, and gales few in number, except at Dungeness.

Pressure.—*Mean for the month, at 8 a.m.,* varied from between 29·95 ins. and 30·0 ins. over the Channel, and from 29·96 ins. in the south of Ireland, to 29·89 ins. at Malin Head and the Scotch stations, and to 29·85 ins. at Sumburgh Head. Gradients were therefore very slight (*nil* over Scotland), and were favourable for Westerly winds over Ireland and England. Readings were lower than those for June by 0·14 in. to 0·17 in. over Scotland, and by 0·07 in. over the south of England, but by only a few thousandths of an inch in the Channel Islands; they were very slightly below the average* values for July, in all the southern districts, and equally little in excess in the north, the difference in each case being only a few hundredths of an inch. *Highest values* were recorded very generally between the 1st and 3rd, when the readings varied between 30·3 ins. and a little above 30·5 ins. *Lowest* were recorded on the 25th, when the barometer fell to less than 29·4 ins. on our north-eastern coasts and to less than 29·7 ins. all over the kingdom. *Range* was moderate—less than an inch in many places.

Depressions were moderately numerous but not deep. Those which passed directly over our Islands moved in an easterly or a north-easterly direction, the most important being that of the 24th to 26th; most of them, however, took a more northerly course on reaching Europe. One depression was first detected over northern Russia on the 3rd; it moved south-westward till the 5th, when it reached Prussian Poland, and then moved north-westwards to the south of Scandinavia. At 8 a.m. 8th it was near Skudesnaes, whence it travelled northwards and north-eastwards, passing out of our area on the 8th. (See Plate VII.)

Anticyclones.—Two well-marked anticyclonic systems passed directly over our area: one at the commencement of the month, the other between the 29th and 31st. The former gave us the highest pressures. Other such systems approached very near to the British Islands (*e.g.*, on the 18th), but did not advance over us.

Wind was chiefly North-westerly and Westerly over the southern half of the kingdom, but was very variable in the north. Its force was, as a rule, light to moderate, and calms were very numerous at Parsons-town and Nairn, rather so (for the regions) at Sumburgh Head, Stornoway, and Valencia. In the Channel the wind was stronger; the force of a gale was reported on seven days at Dungeness.

Temperature.—*Mean, at sea level,* over Great Britain ranged from rather above 62° over Hampshire, Surrey, and parts of Sussex and Devonshire, and from 60° and more over the southern half of England, to about 54° in the extreme north of Scotland, and to 53° at Sumburgh Head; in Ireland it ranged from 59° and more at Waterford and Foynes to 56°·4 at Markree Castle. It was slightly lower in almost all parts of the kingdom than that of June, and was lower than the average* for July in the 20 years 1861–80 by three or four degrees in Ireland, by one to two degrees over the greater part of England, but by still smaller values in Scotland. *Highest values* were recorded over Great Britain on the 30th or 31st, while the second anticyclonic system (referred to above) was passing over us; but in Ireland the maximum values were recorded more generally between the 4th and 6th. *Lowest values* occurred between the 8th and 11th over the western parts of the kingdom and between the 17th and 19th in most other places, but at several of the eastern and southern stations the lowest readings were observed on the 23rd or 24th. *Range* was not very considerable, amounting to 40° or more at a few inland stations only. *Vapour Tension* was less than 0·36 in. over the eastern half of Scotland and the north-west of England, and was less than 0·37 in. over the northern half of Ireland; further to the southward it was much larger, amounting to 0·43 in. at Dungeness and Prawle Point, to 0·47 in. at Scilly, and to nearly 0·50 in. at Hurst Castle. *Relative Humidity* at 8 a.m. varied from 74 to nearly 80 per cent. over the north-eastern and central parts of Great Britain, to 90 at the extreme northern and some of the extreme southern stations.

Rainfall was very slight during the earlier part of the month, but then became considerable, till by the end of the month it varied from less than 1·5 at several stations to more than 5·5 ins. at Rothamsted and Glenlee, and to more than 4·5 ins. at Arlington and Marchmont. The falls were mainly of a thunderstorm character, so that although in most regions the monthly totals were short of the average, those in other localities were largely in excess. At Rothamsted the great excess was due mainly to one heavy fall of 3·06 ins. on the 12th. Many of the stations had falls of more than an inch in one day, and Cambridge had 2·15 ins. on the 12th.

Bright Sunshine was less prevalent than in June, and was as usual greater at the southern and western coast stations than elsewhere. The largest amounts recorded were 49 per cent. of the possible duration at Jersey, 43 at Valencia, 42 at Douglas, Pembroke, and Falmouth, and 40 at Dublin and Hastings; the lowest were 20 at Glen Carron, 28 at Stornoway, Glasgow, and in London, and 29 at Oswald Kirk and Marchmont.

* The averages employed are—*Pressure* and *Temperature* for the 20 years, 1861–80; *Rainfall* for 20 years, 1866–85.

TABLE XIII.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the numbers of days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND N.	Sumburgh Head	ins. 29°854	53°1	48°5	57°1	52°8	43	13th	62	24th
	Wick	29°887	55°7	47°7	60°4	54°1	36	12th	66	2nd
	Stornoway	29°885	54°6	46°1	58°6	52°4	36	24th	69	31st
1. SCOTLAND, E.	Nairn	29°878	55°2	48°4	63°6	56°0	38	3rd	81	31st
	Aberdeen	29°889	55°5	49°5	61°1	55°3	41	23rd	68	22nd
	Leith	29°889	57°3	49°6	64°8	57°2	44	8th, 9th, 24th	75	1st, 6th
2. ENGLAND, N.E.	Shields	29°885	56°5	50°3	62°5	56°4	43	8th	75	6th
	York	29°918	58°0	50°4	68°5	59°5	42	8th	80	31st
	Spurn Head	29°901	58°3	53°7	63°3	58°5	48	8th	75	6th
3. ENGLAND, E.	Yarmouth	29°913	59°5	54°5	64°6	59°6	48	8th	72	11th
	Cambridge	29°937	60°2	51°2	69°3	60°3	43	19th, 24th	80	30th
4. MIDLAND COUNTIES	Loughborough	29°942	59°1	51°7	70°1	60°9	40	24th	82	30th
	Oxford	29°953	58°4	52°5	68°3	60°4	44	19th	80	30th
5. ENGLAND, S.	London	29°947	60°5	54°3	69°8	62°1	48	19th, 24th	80	31st
	Dungeness	29°935	60°3	55°3	66°3	60°8	50	2nd, 6th, 18th, 24th, 18th	74	6th
	Hurst Castle	29°967	61°1	56°2	68°3	62°3	51	18th	75	5th, 31st
6. SCOTLAND, W.	Ardrossan	29°893	57°3	51°1	63°9	57°5	40	17th	72	3rd, 4th, 30th, 31st.
7. ENGLAND, N.W.	Hawes Junction*	28°684	53°5	46°5	61°7	54°1	37	9th	75	31st
	Barrow-in-Furness	29°910	56°6	52°9	63°2	58°1	48	9th	73	31st
	Liverpool	29°930	58°0	53°2	64°9	59°1	48	8th	78	30th, 31st
	Holyhead	29°931	57°6	52°5	63°5	58°0	48	8th, 24th	76	31st
8. ENGLAND, S.W.	Pembroke	29°946	57°8	54°2	61°9	58°1	50	17th, 30th	67	2nd, 31st
	Prawle Point	29°965	59°0	53°3	63°5	58°4	49	22nd	70	2nd
9. IRELAND, N.	Malin Head	29°894	55°5	52°2	59°5	55°9	48	8th, 9th	71	30th, 31st
	Donaghadee	29°926	56°4	53°1	62°3	57°7	49	25th	70	31st
	Mullaghmore	29°915	57°4	52°9	63°3	58°1	45	25th	73	5th, 30th
	Belmullet	29°929	57°1	52°4	62°5	57°5	44	8th	75	30th
10. IRELAND, S.	Parsonstown	29°912	55°5	48°5	67°2	57°9	37	8th	77	5th, 6th
	Valencia	29°966	59°5	51°8	64°7	58°3	44	10th	73	2nd
	Roche's Point	29°955	59°2	52°2	64°8	58°5	48	8th	71	6th
CHANNEL ISLANDS	Scilly (St. Mary's)	29°958	60°0	55°8	64°3	60°1	53	19th, 23rd	68	31st
	Jersey	29°997	61°7	56°6	67°5	62°1	49	19th	80	31st

* Hawes Junction is 1,135 feet above Mean Sea Level and the barometric

REPORTING STATIONS in the BRITISH ISLANDS during the Month of JULY 1889.

Thunderstorms, and Gales are counted irrespective of the hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER.							WIND.								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Days of							No. of Observations of								
						Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins. 0.370	% 91	8.6	ins. 2.03	in. 0.71	6th	12	0	0	0	0	19	0	9	4	2	2	0	0	2	4	8
*368	83	8.0	2.03	0.52	14th	20	0	0	0	2	18	1	9	2	2	10	2	0	0	5	1
*383	90	7.3	1.58	0.60	24th	18	0	0	0	3	18	2	3	6	5	1	3	3	2	3	5
*360	83	5.8	1.64	0.42	15th	17	0	0	0	4	10	0	2	1	4	0	0	2	4	2	16
*344	78	7.1	3.31	0.95	21st	19	0	0	1	0	14	4	6	2	6	3	3	0	3	8	0
*356	76	6.8	3.09	0.60	9th	12	0	1	1	2	12	0	1	1	5	3	2	1	10	7	1
*366	80	7.5	2.72	0.57	25th	15	0	1	3	2	11	0	5	2	3	2	2	5	9	3	0
*370	77	5.6	1.42	0.36	10th	12	0	0	0	9	10	0	5	3	3	2	2	4	9	3	0
*392	80	6.7	1.34	0.26	13th	13	0	0	3	1	12	2	5	4	2	1	3	4	8	4	0
*445	88	4.4	3.72	1.88	13th	17	0	0	3	12	3	0	4	2	2	2	1	7	5	8	0
*407	78	7.0	3.55	2.15	12th	13	0	1	5	5	18	0	11	1	2	1	3	8	3	1	1
*390	77	7.3	1.85	0.43	26th	16	0	1	3	2	15	1	0	3	5	3	1	2	11	4	2
*396	81	5.9	2.66	0.58	12th	14	0	0	4	8	13	0	2	4	1	1	4	7	5	4	3
*392	75	6.9	1.92	0.47	21st	18	0	1	5	6	14	0	2	4	0	3	2	5	9	4	2
*428	82	7.1	2.63	0.66	15th	15	0	0	4	0	7	7	4	3	4	1	0	7	8	4	0
*498	92	6.5	2.70	0.44	16th	17	0	0	2	1	7	3	4	4	3	1	2	6	7	4	0
*382	81	6.0	2.51	0.70	10th	11	0	0	1	8	14	0	1	7	0	1	2	3	7	7	3
*348	85	7.1	4.02	0.75	20th	17	0	0	1	2	16	0	3	4	4	4	4	9	2	1	0
*383	83	6.5	3.82	0.86	26th	11	0	0	0	0	9	0	3	8	1	3	2	3	2	9	0
*355	74	7.9	2.01	0.52	24th	16	0	0	3	3	18	0	1	0	5	5	2	3	9	6	0
*390	82	5.8	2.42	0.85	10th	16	0	0	1	5	7	0	4	2	3	1	1	3	9	4	4
*424	88	6.8	2.06	0.52	9th	10	0	0	0	1	9	3	3	3	5	3	2	3	6	6	0
*430	87	6.3	3.70	0.50	9th	15	0	0	0	4	12	1	0	5	5	3	2	3	9	4	0
*380	86	7.5	2.94	0.76	10th	19	0	1	1	0	18	0	5	0	3	6	6	2	3	5	1
*391	86	6.0	3.41	1.34	10th	12	0	0	0	4	7	0	5	7	1	4	3	3	6	2	0
*381	81	7.0	2.37	0.52	22nd	17	0	0	0	3	9	2	2	2	7	2	2	4	6	6	0
*379	81	7.6	2.25	0.63	23rd	18	0	0	0	5	21	1	4	3	6	1	3	3	7	4	0
*367	83	7.5	1.90	0.52	24th	12	0	0	0	2	18	0	0	1	0	2	0	3	0	5	20
*401	79	7.3	2.33	0.35	20th, 22nd	17	0	0	0	2	15	1	5	2	2	3	1	3	4	6	5
*392	78	5.7	1.82	0.40	23rd	11	0	0	0	0	8	0	9	1	4	3	0	3	6	5	0
*466	90	8.1	2.98	0.94	7th	18	0	0	0	1	19	2	4	2	4	2	2	3	6	7	1
*437	80	6.4	2.39	0.53	16th	13	0	0	1	4	13	2	1	3	3	2	2	6	8	6	0

observations at this station are not corrected for altitude.

TABLE XIV.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT, during the Month of JULY 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Per-centages of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	147'3	28
LAIRG	45'7	62'1	53'9	35	12th	76	31st	17	1'81	0'63	23rd	—	—
GLENCARRON	47'1	62'3	54'7	42	12th, 23rd	79	31st	19	2'12	0'39	24th	104'2	20
FORT AUGUSTUS	48'1	64'0	56'1	42	8th, 10th	78	31st	15	1'41	0'33	24th	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	156'1	30
BRAEMAR	45'4	63'1	54'3	36	24th	76	4th	16	1'77	0'65	24th	154'0	29
OCHTERTYRE	47'9	68'1	58'0	39	17th	79	30th	11	1'97	0'64	24th	—	—
MARCHMONT	47'4	63'5	55'5	39	8th	78	31st	16	4'87	1'12	9th	149'8	29
ALNWICK CASTLE	50'3	61'8	56'1	42	23rd	71	6th	16	3'61	0'83	9th	—	—
DURHAM	49'0	66'7	57'9	41	8th, 9th	80	6th	16	2'68	0'66	21st	125'6	25
SCARBOROUGH	51'4	64'7	58'1	43	8th	77	6th	15	2'98	0'57	21st	†147'9	29
YORK	*	*	*	*	*	*	*	*	*	*	*	163'7	32
HILLINGTON	50'7	67'6	59'2	42	17th	77	30th, 31st	19	2'90	1'23	13th	169'6	34
GELDESTON	51'6	67'0	59'3	44	24th	77	6th	16	2'22	0'74	13th	170'8	35
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	168'8	34
ROTHAMSTED	51'5	67'4	59'5	44	19th	78	30th	16	5'58	3'06	12th	—	—
INGATESTONE	52'0	68'2	60'1	44	19th	77	6th, 30th	15	1'47	0'45	9th	—	—
BAWTRY	49'3	68'2	58'3	40	24th	81	31st	14	1'71	0'43	10th	†156'6	31
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†166'1	33
CHEADLE	49'8	65'4	57'6	43	17th	76	31st	17	2'75	0'49	13th	—	—
CHURCHSTOKE	48'2	66'8	57'5	40	17th	78	30th	17	4'17	1'65	13th	196'3	39
HEREFORD	50'7	69'5	60'1	41	8th, 17th	83	6th	17	3'76	1'34	13th	—	—
CRENCESTER	49'9	67'4	58'7	40	19th	78	6th	15	2'81	1'72	13th	189'1	38
OXFORD	*	*	*	*	*	*	*	*	*	*	*	180'1	36
LONDON	*	*	*	*	*	*	*	*	*	*	*	136'2	28
STRATHFIELD TURGISS	51'7	68'8	60'3	45	24th	79	6th, 30th	20	2'19	0'55	21st	—	—
HASTINGS	54'4	66'6	60'5	49	24th	74	5th	19	3'86	0'95	23rd	198'4	40
SOUTHAMPTON	54'2	70'0	62'1	49	19th, 22nd	80	6th	18	2'68	0'43	23rd	178'8	36
STOWELL	51'8	65'7	58'8	45	19th, 22nd	74	5th, 6th, 30th	16	3'46	0'74	10th, 23rd	148'4	30
LAUDALE	49'6	63'5	56'6	41	8th	75	4th, 31st	14	1'55	0'50	24th	—	—
GLASGOW	49'9	64'4	57'2	41	8th	75	31st	17	2'38	0'64	9th	143'9	28
GLENLEE	47'1	65'1	56'1	35	9th	73	6th, 30th	14	5'06	1'07	10th	—	—
DOUGLAS	50'2	63'7	57'0	40	24th	73	6th	10	2'49	0'61	9th	212'9	42
NEWTON REIGNY	46'6	65'6	56'1	37	3rd, 17th	77	31st	13	1'84	0'42	10th	179'7	35
STONHURST	50'4	64'8	57'6	43	8th, 9th	75	30th, 31st	16	3'04	0'84	24th	174'8	35
BLACKPOOL	52'1	67'0	59'6	46	9th, 30th	84	30th	15	1'90	0'35	24th	199'4	39
MANCHESTER	50'5	66'1	58'3	41	8th	77	30th, 31st	16	3'83	1'15	11th	—	—
LLANDUDNO	52'6	64'5	58'6	46	24th	79	31st	12	1'91	0'50	23rd	159'3	32
LLANDOVERY	49'8	70'2	60'0	38	16th	81	6th	17	3'50	0'49	20th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	209'3	42
ARLINGTON	50'6	64'6	57'6	45	17th, 19th	73	5th, 31st	17	4'59	1'12	9th	—	—
CULLOMPTON	50'7	68'3	59'5	41	19th	80	6th	17	3'47	1'00	9th	172'5	35
FALMOUTH	54'3	64'7	59'5	50	22nd, 23rd	71	6th	13	3'47	0'88	8th	201'6	42
PLYMOUTH	55'3	69'0	62'2	49	19th	78	4th	14	3'24	1'05	9th	187'1	39
JERSEY	*	*	*	*	*	*	*	*	*	*	*	233'4	49
LONDONDERRY	50'0	66'0	58'0	41	9th	80	5th	18	2'80	0'81	10th	—	—
MARKREE CASTLE	48'1	63'8	56'0	33	8th	76	5th	19	2'51	0'46	22nd	160'1	32
BROOKEBOROUGH	47'9	64'9	56'4	35	8th	76	5th	14	2'68	0'62	20th	—	—
ARMAGH	48'3	65'4	56'9	32	8th	77	6th	17	2'92	0'86	10th	167'2	33
EDGEWORTHSTOWN	47'1	66'3	56'7	31	8th	73	6th	15	2'40	0'48	22nd	—	—
DUBLIN	51'7	65'7	58'7	44	8th	78	6th	15	2'57	0'62	22nd	198'9	40
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	179'3	36
KILKENNY CASTLE	48'6	66'7	57'7	40	11th	79	6th	14	2'12	0'34	19th	—	—
WATERFORD	49'5	69'1	59'3	43	11th	78	6th	15	2'42	0'58	19th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	212'9	43
KILLARNEY	49'0	65'6	57'3	38	10th	75	5th	15	1'39	0'36	23rd	—	—
FOYNES	52'2	64'9	58'6	46	9th	76	5th	18	3'20	0'78	22nd	—	—

* For information see Table XIII.

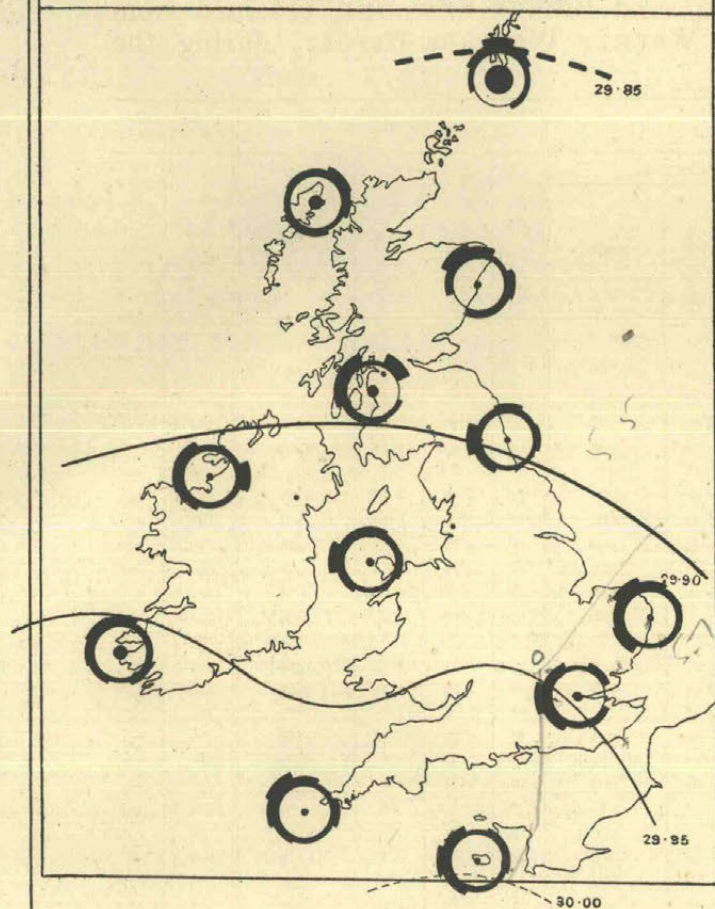
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those to Loughborough at Thurstaston.

MONTHLY WEATHER CHART JULY 1889.

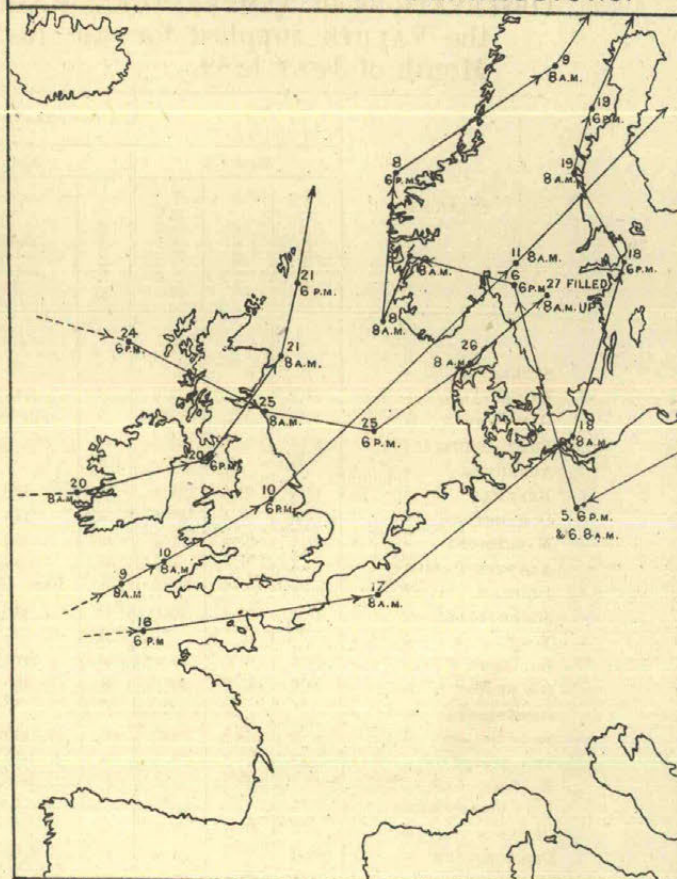
Monthly Summary

Plate VII.

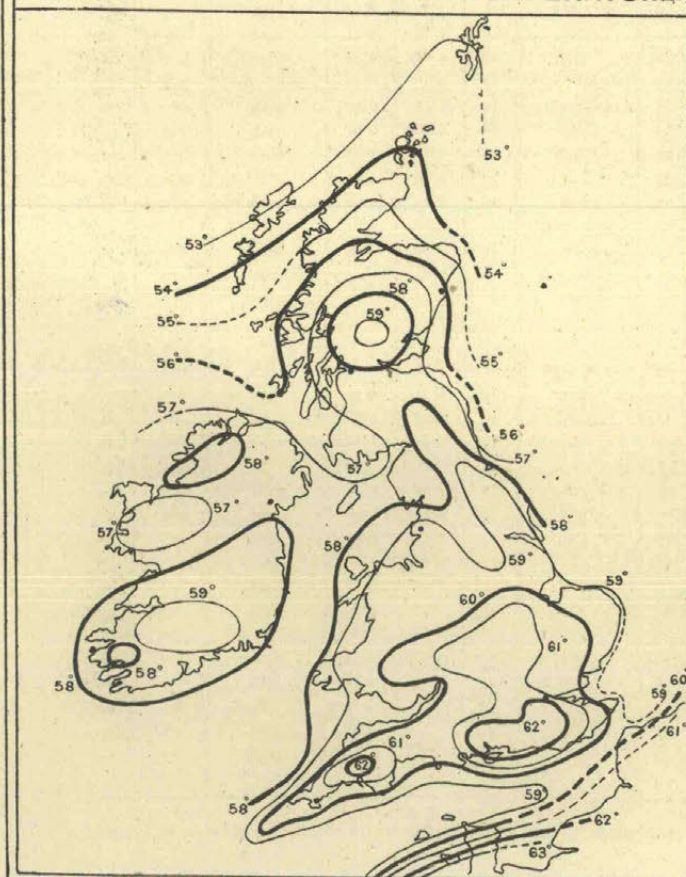
1 BAROMETER AND WIND.



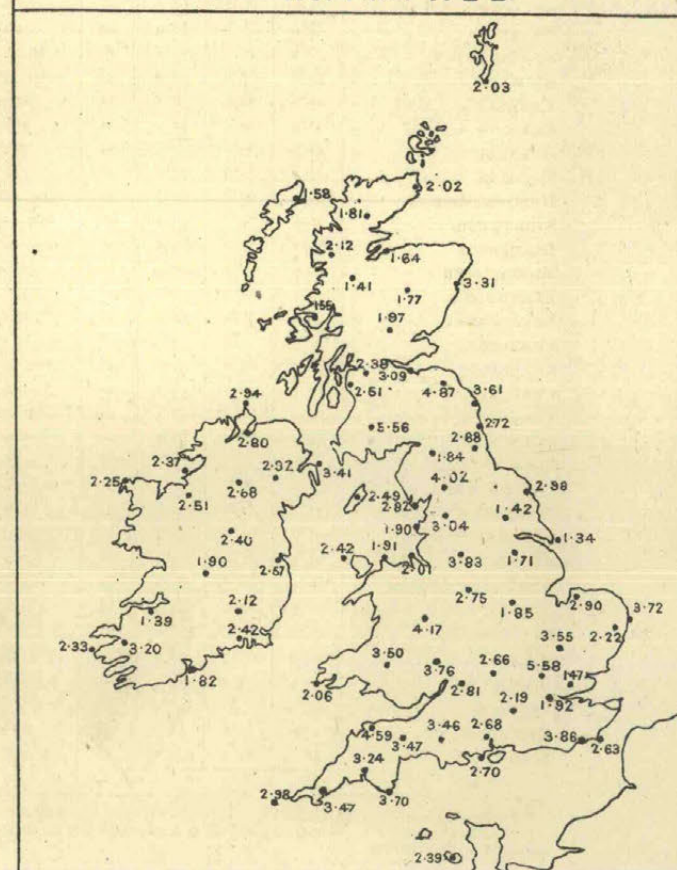
2. MOVEMENTS OF DEPRESSIONS.



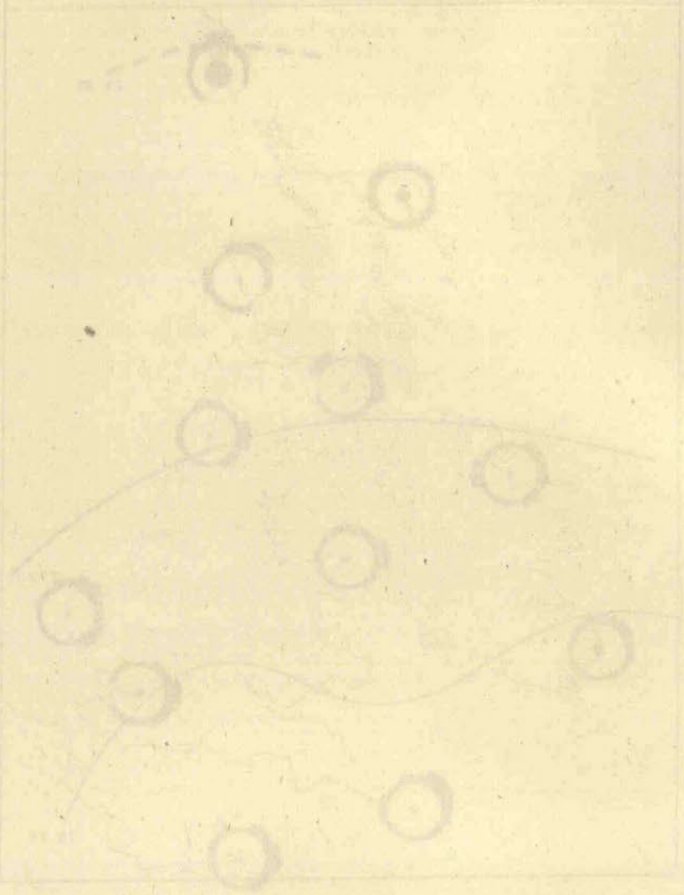
3. DISTRIBUTION OF MEAN TEMPERATURE.



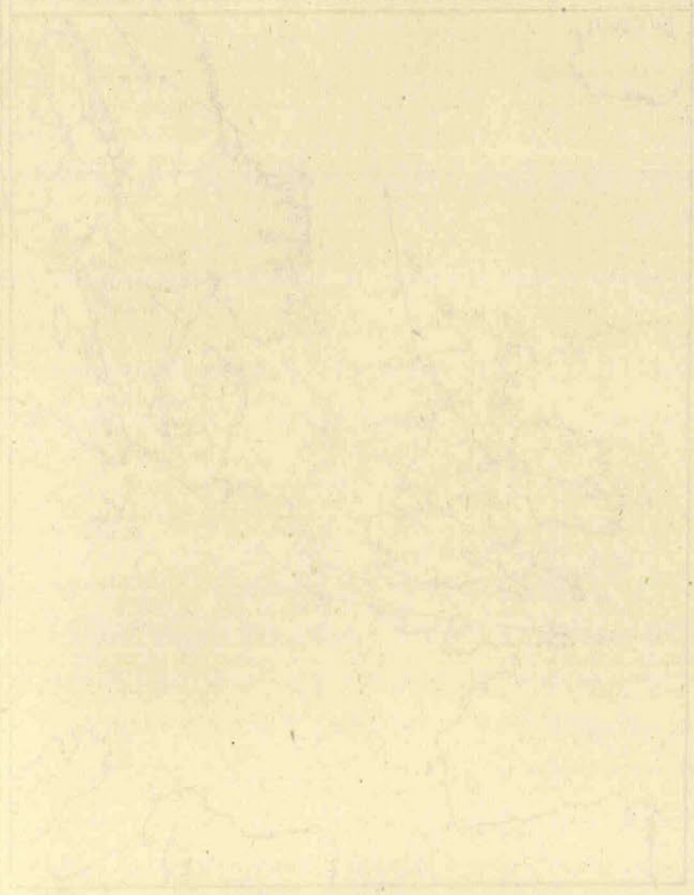
4 RAINFALL.



1. BAROMETER AND WIND



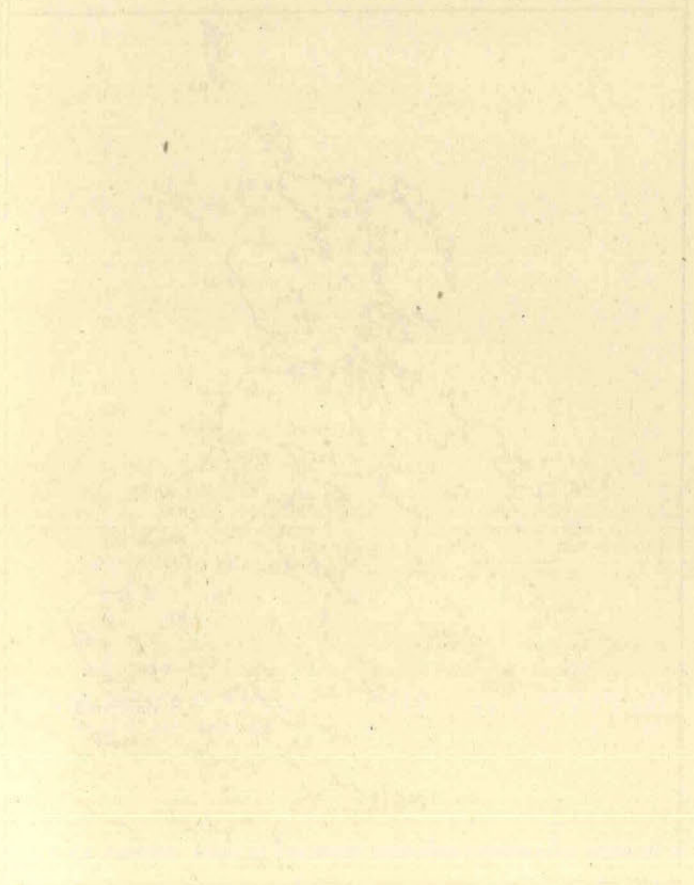
2. MOVEMENTS OF DEPRESSIONS



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL



SUMMARY of OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS, for the CALENDAR MONTH,

AUGUST 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of August was cool, windy, and wet. Pressure was considerably below the average in the north and gradients (for Westerly winds) steep for the time of year. Temperature was below the average generally; the range being small in Ireland, moderate elsewhere. The prevailing winds were Westerly or South-westerly; on our western and southern coasts they were frequently strong in force. Rainfall was largely in excess of the average, and thunderstorms were very prevalent during the earlier part of the month.

Pressure.—*Mean for the Month* varied from 29·65 ins. and less in the neighbourhood of the Shetlands to 29·9 ins. and upwards over England and the southern parts of the English Channel. In the latter region the values agreed fairly well with the average,* but in the extreme north they were nearly two tenths of an inch below the normal; and the mean gradient was therefore considerably steeper than is usual in August. *Highest* values were recorded generally on the 31st, when the readings over the United Kingdom and its immediate neighbourhood varied between 30·1 ins. and 30·2 ins. or a little above. *Lowest* were observed during the passage of some well-marked depressions over our Islands on the 20th and 21st, when the barometer fell in most districts to between 29·1 ins. and 29·5 ins. *Range* was moderate—less than an inch in many places.

Depressions were unusually numerous for the time of year, and in many cases their centres passed eastwards and north-eastwards directly across the kingdom. (See Map 2, Plate VIII.) The two most important were those of the 19th–20th and 21st–22nd; on the former date the centre travelled north-eastwards from the Bristol Channel to the west coast of Norway, while in the latter case it moved in about an east-north-easterly direction from the west of Ireland to the extreme south of Norway, after which it travelled northwards.

Anticyclones.—The highest pressures lay as a rule to the southward or south-westward of our Islands, but on the 26th and 27th an anticyclonic system extended northwards over the southern parts of the kingdom, while at the close of the month another area was in process of formation directly over us.

Wind.—The prevailing winds were Westerly in the west and south, South-westerly in the north and north-east, but in the Shetland Islands there was a somewhat large admixture of breezes from the eastward. Gales were unusually frequent for the time of year, especially on our southern coasts; at Pembroke and Hurst Castle there were nine such occurrences.

Temperature.—*Mean at Sea Level* ranged from 60° to 61°, and a little more, over the central and south-eastern parts of England and from 58° and a little more over the east and south of Ireland and some isolated parts of central Scotland, to a little below 54° in the Shetlands. The values were below the average* for August in all parts excepting the extreme north of Scotland, the deficit being from two to three degrees over England and a little above three degrees in many parts of Ireland. *Highest* readings were recorded either on the 1st of the month or on the 30th or 31st; in the western and northern parts of the kingdom the earlier date was as a rule the warmer, while in the south the absolute maxima were registered at the close of the period. *Lowest* readings occurred at varying times during the concluding week. *Range* was small in Ireland (only 17° at Valencia and 22° at Armagh), greater over England (42° at Hillington). *Vapour Tension* varied from 0·36 inch in the north-east of Scotland and 0·38 inch over the central parts of southern Ireland to between 0·46 inch and 0·49 inch over the central portion of the English Channel. *Relative Humidity* was least in the east of Scotland (77 at Aberdeen), but in other districts the value differed considerably; the highest were observed respectively in the Shetlands, the Hebrides, the north-east of Ireland, and the north-west and extreme south of England, in each of which localities the humidity exceeded 90.

Rainfall was least in the east and south-east of England (Dungeness 1·77 ins., Cambridge 1·86 ins.), greatest over the northern and western parts of the kingdom; more than 11 inches at Hawes Junction, nearly 9 inches at Glencarron, and more than 7 inches at several stations in the west of Ireland, as well as at Laudale and Braemar. Over Ireland, the north of England, and the south of Scotland the largest daily fall was observed on the 19th, but elsewhere the heaviest amount occurred on varying dates. The aggregate fall for the month was slightly less than the average* in some parts of central and southern England, but considerably more in all the western and north-eastern districts. At some of the northern Irish stations and also at Hillington the amount was more than double the average.

Bright Sunshine varied from less than 20 per cent. of the possible duration in some of the central parts of Ireland and Scotland to 40 per cent. and upwards in the east and south of England. The lowest per-centages were 6 at Glencarron and 17 at Armagh; the highest were 48 at Jersey and 47 at Hastings.

* The averages employed are—*Pressure* and *Temperature*, for 20 years 1861–80; *Rainfall* for 20 years 1866–85.

xxx SUMMARY OF OBSERVATIONS, AUGUST 1889.

TABLE XV.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC

Observations are made at 8 a.m. daily, but the Number of Days of Rain, Snow, Hail,

(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			Means of				Absolute Extremes.			
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	29° 626	54° 2	49° 0	57° 9	53° 5	40	23rd	62	1st, 2nd
	Wick	29° 674	56° 5	49° 1	61° 7	55° 4	40	23rd	70	28th
	Stornoway	29° 688	55° 0	49° 5	59° 6	54° 6	43	23rd	64	1st, 3rd, 28th
1. SCOTLAND, E.	Nairn	29° 687	55° 9	50° 8	62° 6	56° 7	41	14th	73	1st
	Aberdeen	29° 709	56° 8	51° 1	62° 3	56° 7	43	24th	72	2nd
	Leith	29° 728	57° 5	51° 3	64° 5	57° 9	42	31st	75	1st
2. ENGLAND, N.E.	Shields	29° 742	55° 6	51° 7	62° 7	57° 2	47	23rd, 25th, 26th	71	1st, 3rd
	York	29° 802	56° 8	51° 1	66° 3	58° 7	43	25th	74	1st
	Spurn Head	29° 796	58° 5	54° 3	64° 4	59° 4	49	23rd, 25th	72	2nd, 3rd
3. ENGLAND, E.	Yarmouth	29° 841	58° 8	53° 2	65° 3	59° 3	45	25th	73	2nd, 29th
	Cambridge	29° 869	58° 7	49° 9	69° 5	59° 7	42	25th	83	1st, 30th
4. MIDLAND COUNTIES	Loughborough	29° 851	57° 4	51° 9	68° 0	60° 0	44	25th	81	30th
	Oxford	29° 892	56° 6	51° 7	67° 5	59° 6	43	25th	82	30th
5. ENGLAND, S.	London	29° 894	59° 0	52° 5	69° 8	61° 2	44	25th	85	1st
	Dungeness	29° 890	60° 9	54° 3	66° 4	60° 4	44	27th	74	31st
	Hurst Castle	29° 930	59° 7	54° 9	66° 7	60° 8	46	25th	76	30th
6. SCOTLAND, W.	Ardrossan	29° 746	56° 6	52° 3	61° 4	56° 9	44	31st	65	1st
7. ENGLAND, N.W.	Hawes Junction*	28° 565	52° 3	48° 6	58° 0	53° 3	40	23rd	65	1st
	Barrow-in-Furness	29° 774	56° 6	54° 1	61° 0	57° 6	40	21st	64	2nd, 31st
	Liverpool	29° 820	57° 9	53° 9	63° 6	58° 8	50	21st, 24th, 25th	69	1st, 16th, 30th
8. ENGLAND, S.W.	Holyhead	29° 827	57° 1	53° 7	62° 8	58° 3	49	25th	68	15th
	Pembroke	29° 887	57° 5	55° 0	60° 8	57° 9	50	11th	66	30th
	Prawle Point	29° 940	58° 2	53° 3	62° 7	58° 0	47	24th	72	30th
9. IRELAND, N.	Malin Head	29° 750	55° 3	52° 6	59° 3	56° 0	48	21st	65	1st
	Donaghadee	29° 789	56° 2	53° 7	62° 6	58° 2	45	21st	69	15th
	Mullaghmore	29° 800	56° 4	52° 7	60° 9	56° 8	47	21st	67	1st
10. IRELAND, S.	Belmullet	29° 817	56° 2	52° 8	59° 7	56° 3	47	25th, 30th	64	1st
	Parsonstown	29° 850	55° 5	50° 4	63° 8	57° 1	41	25th	69	1st
	Valencia	29° 896	58° 7	53° 9	62° 5	58° 2	51	25th, 26th	68	31st
CHANNEL ISLANDS	Roche's Point	29° 88	57° 5	52° 5	62° 8	57° 7	4	25th, 27th	66	1st, 4th, 14th, 15th.
	Seilly (St Mary's)	29° 933	60° 3	55° 8	63° 6	59° 7	52	11th	68	1st
	Jersey	29° 987	62° 0	56° 0	66° 6	61° 3	47	28th	78	30th

Hawes Junction is 1,135 feet above Mean Sea Level and the

SUMMARY OF OBSERVATIONS, AUGUST 1889.

xxxix

REPORTING STATIONS in the BRITISH ISLANDS during the Month of AUGUST 1889.

Thunderstorms, and Gales are counted irrespective of the Hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
			ins.	ins.																	
0.388	93	7.9	5.79	2.05	20th	22	0	0	1	0	17	3	5	3	2	2	2	3	5	4	5
*379	83	7.1	5.49	1.88	20th	24	0	0	0	3	13	3	10	1	2	4	2	2	4	6	0
*397	92	8.9	5.05	0.82	20th	28	0	0	0	0	21	1	2	3	1	2	3	10	4	3	3
*371	83	7.0	4.10	1.34	20th	23	0	0	0	0	11	0	0	0	3	0	0	7	12	1	8
*357	77	6.4	5.44	1.22	10th	24	0	0	0	1	8	3	1	2	2	0	6	6	7	6	1
*369	78	7.1	4.56	0.92	19th	24	0	0	3	1	8	0	1	2	2	1	1	4	17	3	0
*379	85	7.7	4.21	0.89	19th	21	0	0	2	0	14	0	1	0	0	1	3	12	9	4	1
*385	83	6.5	4.49	0.49	19th	20	0	1	2	9	14	0	3	0	0	3	4	5	14	2	0
*408	83	6.5	2.59	0.88	11th	21	0	0	5	3	12	5	2	1	1	1	4	13	9	0	0
*430	87	4.1	2.62	0.47	11th	19	0	0	4	14	2	0	0	0	1	1	2	8	12	6	1
*411	84	6.9	1.86	0.35	21st	21	0	0	1	1	14	0	1	0	1	1	3	14	10	1	0
*400	85	7.4	3.25	1.01	21st	18	0	0	4	1	13	1	0	0	0	2	3	6	17	2	1
*391	85	6.1	2.27	0.54	9th	15	0	0	4	8	9	0	0	0	0	1	6	11	8	4	1
*402	81	6.7	2.23	0.34	5th	17	0	0	3	7	14	1	0	0	0	1	2	11	10	5	2
*426	81	5.6	1.77	0.40	19th	15	0	0	1	2	1	6	2	0	0	1	2	3	14	9	0
*477	94	6.1	3.06	0.51	7th	16	0	0	0	1	5	9	3	2	2	0	0	6	11	7	0
*403	87	8.0	4.48	1.09	19th	22	0	0	0	2	19	3	1	4	1	0	2	9	5	7	2
*371	95	9.3	11.62	4.16	7th	29	0	0	1	0	26	0	3	3	1	3	9	10	0	1	1
*408	88	8.0	5.72	0.98	14th	22	0	0	0	0	18	5	1	6	1	0	3	11	3	6	0
*373	78	7.4	3.98	0.82	23rd	20	0	0	2	2	14	0	1	0	0	3	3	7	13	4	0
*407	87	7.5	3.46	0.85	19th	17	0	0	0	0	14	1	1	2	0	0	5	8	7	7	1
*416	88	6.6	3.34	0.54	8th	17	0	0	0	0	7	9	1	2	0	1	5	11	7	4	0
*439	90	6.5	2.28	0.33	1st	20	0	0	0	2	10	4	3	1	2	0	3	8	11	3	0
*389	88	8.5	6.36	1.02	16th	28	0	0	2	1	22	1	4	1	1	2	9	2	4	8	0
*413	91	6.7	7.29	1.84	19th	24	0	0	0	1	10	0	1	3	0	1	1	10	12	3	0
*400	86	7.5	7.16	1.16	16th	25	0	0	0	2	11	4	2	1	1	2	4	7	5	7	2
*388	86	7.9	7.41	1.53	28th	24	0	0	0	3	21	1	2	1	2	3	1	7	8	7	0
*375	85	7.9	4.83	2.20	19th	20	0	0	0	0	17	0	0	0	0	1	1	10	1	1	17
*423	85	8.1	7.09	1.66	19th	25	0	0	0	0	18	4	3	2	0	2	4	7	7	6	0
*396	84	6.2	5.98	1.85	19th	18	0	1	3	0	7	1	4	0	0	1	2	7	9	8	0
*458	88	7.4	1.90	0.40	2nd	18	0	0	2	2	15	3	3	0	0	2	4	8	5	9	0
*439	79	6.8	2.63	0.85	4th	17	0	0	0	3	11	4	0	0	1	0	0	8	12	8	2

barometrical observations at this station are not reduced for altitude.

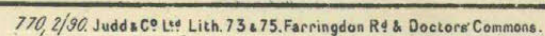
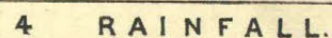
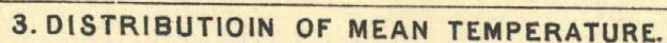
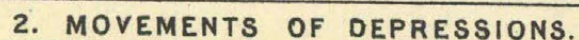
TABLE XVI.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of AUGUST 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentage of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	124°	27
LAIRG	47°4	60°5	54°0	39	8th	75	1st	23	4°17	0°67	9th, 20th	—	—
GLENCARRON	48°6	58°3	53°5	42	8th	65	1st, 3rd	29	8°94	1°13	27th	28°6	6
FORT AUGUSTUS	50°2	60°9	55°6	42	14th, 24th	70	1st	25	6°26	1°34	20th	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	132°9	29
BRAEMAR	47°0	59°3	53°2	35	31st	70	1st	27	7°59	2°13	10th	84°7	18
OCHTERTYRE	48°6	65°2	56°9	39	23rd, 30th	73	1st, 31st	19	4°91	1°12	16th	—	—
MARCHMONT	48°7	62°7	55°7	41	31st	72	1st	22	4°32	1°00	19th	101°8	22
ALNWICK CASTLE	50°4	62°2	56°3	44	10th, 25th, 31st	72	1st	22	4°93	1°30	19th	—	—
DURHAM	50°7	65°0	57°9	43	25th	74	1st	20	3°22	0°42	19th	120°5	26
SCARBOROUGH	51°6	64°1	57°9	44	25th, 26th	72	2nd	22	4°53	0°66	14th	†102°4	23
YORK	*	*	*	*	*	*	*	*	*	*	*	†114°1	†25
HILLINGTON	50°8	68°1	59°5	39	25th	81	1st	22	5°48	1°31	11th	167°4	37
GELDESTON	51°2	68°1	59°7	42	25th	81	30th	18	2°66	0°44	10th	180°1	40
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	176°4	40
ROTHAMSTED	51°0	67°4	59°2	44	25th, 30th	80	1st	19	2°02	0°40	21st	—	—
INGATESTONE	51°1	68°3	59°7	44	25th	82	1st, 30th	17	2°50	0°58	21st	—	—
BAWTRY	51°3	67°2	59°3	42	24th	78	1st, 30th	18	2°76	0°48	9th	†134°5	30
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†145°0	32
CHEADLE	49°4	63°3	56°4	41	10th	75	30th	21	3°97	0°73	6th	—	—
CHURCHSTOKE	48°8	64°9	56°9	38	25th	77	30th, 31st	18	3°02	0°68	21st	144°8	32
HEREFORD	50°2	68°3	59°3	39	25th	78	30th	14	2°01	0°49	19th	—	—
CIRENCESTER	48°3	65°1	56°7	39	25th	77	31st	16	3°55	0°71	2nd	169°3	38
OXFORD	*	*	*	*	*	*	*	*	*	*	*	179°0	40
LONDON	*	*	*	*	*	*	*	*	*	*	*	163°3	17
STRATHFIELD TURGIS-	50°4	68°2	59°3	40	20th	81	30th	17	2°47	0°77	21st	—	—
HASTINGS	53°9	66°2	60°1	47	25th, 27th	77	31st	14	2°06	0°38	19th	209°7	47
SOUTHAMPTON	52°4	69°1	60°8	45	27th	81	30th	18	2°13	0°32	2nd, 19th	189°0	43
STOWELL	50°5	64°7	57°6	44	27th, 28th	78	30th	21	3°38	0°58	21st	161°9	36
LAUDALE	50°9	60°9	55°9	41	24th	66	1st, 9th	26	7°10	1°55	27th	—	—
GLASGOW	51°2	61°7	56°5	43	31st	69	1st	21	4°89	0°99	19th	113°9	25
GLENLEE	48°8	61°8	55°3	37	31st	70	1st	24	5°37	1°30	19th	—	—
DOUGLAS	51°0	62°5	56°8	44	31st	67	1st	22	5°78	1°26	19th	125°7	28
NEWTON REIGNY	49°4	62°5	56°0	42	26th, 31st	72	1st	22	3°66	1°59	5th	89°4	20
STONYHURST	51°4	61°9	56°7	48	30th	70	1st	23	6°91	1°87	14th	109°7	24
BLACKPOOL	53°2	64°2	58°7	48	30th	72	2nd, 4th, 5th	21	4°17	0°70	14th	113°2	25
MANCHESTER	51°2	63°6	57°4	43	25th	73	30th	23	6°59	1°46	5th	—	—
LLANDUDNO	54°0	63°6	58°8	47	11th	70	1st	17	3°85	0°97	19th	101°3	23
LLANDOVERY	49°5	66°8	58°2	41	24th	80	30th	25	4°19	0°62	21st	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	192°2	43
ARLINGTON	50°0	63°7	56°9	44	25th	76	30th	19	4°82	0°80	14th	—	—
CULLOMPTON	48°8	67°0	57°9	41	25th, 28th, 29th	78	30th	22	3°72	0°81	21st	161°2	36
FALMOUTH	53°3	63°6	58°5	49	11th, 28th, 29th	69	31st	18	3°77	0°84	2nd	204°1	46
PLYMOUTH	53°8	67°0	60°4	46	10th, 27th	74	29th	21	3°47	0°66	2nd	179°0	40
JERSEY	*	*	*	*	*	*	*	*	*	*	*	210°5	48
LONDONDERY	50°8	62°3	56°6	45	21st	73	31st	27	6°77	0°93	16th	—	—
MARKREE CASTLE	49°1	61°2	55°2	38	31st	67	1st, 31st	26	5°96	0°78	19th	101°4	22
BROOKEBOROUGH	49°0	61°1	55°1	41	11th	67	31st	25	5°67	1°00	19th	—	—
ARMAGH	50°2	62°6	56°4	45	26th	67	1st, 31st	24	6°66	1°58	19th	78°0	17
EDGEWORTHSTOWN	48°4	62°8	55°6	41	31st	70	30th	25	5°11	1°42	19th	—	—
DUBLIN	52°7	64°6	58°7	46	25th	72	1st	22	5°75	1°94	19th	134°6	30
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	131°0	29
KILKENNY CASTLE	50°0	64°2	57°1	42	26th	68	15th, 29th, 30th	18	6°42	1°63	19th	—	—
WATERFORD	49°9	66°3	58°1	43	26th	70	30th	18	4°78	1°23	19th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	137°4	31
KILLARNEY	51°0	62°4	56°7	42	26th	67	1st, 31st	23	6°75	2°25	19th	—	—
FOYNES	52°5	62°4	57°5	46	24th, 31st	69	1st	22	5°54	1°90	19th	—	—

* For information see Table XV.

† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Thurstaston.



SUMMARY of the OBSERVATIONS made at the STATIONS included in the DAILY and WEEKLY WEATHER REPORTS for the CALENDAR MONTH,

SEPTEMBER 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of September was fine, mild, and quiet during the earlier half of the month, but changeable, cold, and gusty during the latter part of the time. Pressure was in excess of the average, especially in the north. Temperature was below the average in Great Britain, but a little above the normal in Ireland. The winds were light and variable during the first half of the month, but occasionally strong from between West and North during the remainder of the period. Rainfall was generally slight, and the amount of bright sunshine fairly normal. Severe thunderstorms occurred over England on the 2nd.

Pressure.—*Mean for the month* varied from 29·91 ins. in the Shetlands and 29·94 ins. in the Hebrides to 30·05 ins. and upwards over all the more southern parts of England and Ireland. The values were everywhere in excess of the average* for September, the difference being as much as 0·15 in. in the extreme north. The distribution had a cyclonic tendency at the northern stations, but an anticyclonic tendency in the south, and the mean gradient was less steep than usual. *Highest*, values 30·3 ins. to 30·4 ins. and upwards, were recorded during the prevalence of an anticyclone on the 14th and 15th. *Lowest* values were recorded over the northern part of the kingdom on the 19th and 20th, when the barometer ranged between 29·1 ins. and 29·5 ins.; but in the south the absolute minima (29·5 ins. and less) were observed on the 24th. *Range* was moderate.

Depressions.—The only depressions of importance were—one, which advanced from the westward over the southern parts of the kingdom on the 24th, and travelling southwards to the Bay of Biscay, filled up rapidly; another was developed over the east of England on the 24th, and travelled thence to Denmark and the south of Sweden. During its passage across the North Sea the latter depression increased rapidly in depth, but on reaching the Danish coasts it gradually filled up.

Anticyclones.—During the early part of the month anticyclonic conditions were very prevalent. The three most important observed were those of the 1st (when a large system moved eastwards across the kingdom), of the 3rd to 7th (when another extended over Great Britain from Scandinavia), and of the 13th to 16th, when a third system travelled slowly across our Islands in a south-easterly direction.

Wind was extremely light and variable during the earlier half of the month. On the 19th, however, a strong breeze from the Westward was experienced generally; on the 24th a fresh gale from the Northward blew at the mouth of the Channel, while on the 28th there was a North-westerly gale in the extreme north of Scotland.

Temperature.—*Mean for the month* varied from a little below 50° in the Shetlands to a little below 61° at Jersey. The distribution was mainly of an autumnal character, but patches of relative cold over the north of Ireland and the south-west of Scotland indicated the early appearance in those regions of more wintry conditions. It was a little above the average* in Ireland, but below it over Great Britain, the deficit being greatest (about 2°) in the south-east of England. *Highest* values were recorded mostly between the 10th and 12th, but in Scotland they were reached between the 4th and 6th. *Lowest* values were registered between the 22nd and 26th, excepting in the central and eastern parts of England, where the weather was coldest on the 17th and 18th. Slight frost was experienced at these times at several of the inland stations. *Range* was large (45° or more) over England; at Cirencester it was as large as 52°. *Vapour Tension* varied from about 0·32 in. in the north and east of Scotland and over the north-west of England to between 0·40 in. and 0·44 in. on our extreme south and south-west coasts. *Relative Humidity* ranged from about 80 per cent. in the south-east of Scotland, the south-east of England, and the Channel Islands, to 95 or more in the Hebrides.

Rainfall was upon the whole considerably less than the average,* especially in some of the central parts of Ireland and Scotland, where the total fall was less than an inch. In the east of England, however, where heavy rains accompanied the formation of the depression of the 24th, the aggregate fall was slightly more than the normal.

Bright Sunshine amounted in most cases to about 30 per cent. of the possible duration. At some of the Irish stations, however, the per-centage was below 25, while the extreme south of England had, on the other hand, more than 40 per cent.; the largest proportion was at Jersey, where the value was as high as 53.

* The averages employed are—*Pressure* and *Temperature* for the 20 years, 1861–80; *Rainfall* for 20 years, 1866–85.

TABLE XVII.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the numbers of days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 82° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			Means of				Absolute Extremes.			
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29°907	49°3	45°4	53°4	49°4	37	24th	61	4th
	Wick	29°956	51°7	45°1	56°4	50°8	31	24th	69	9th
	Stornoway	29°936	52°1	45°6	56°7	51°2	35	24th, 25th, 26th.	65	7th
1. SCOTLAND, E.	Nairn	29°957	50°9	44°6	59°4	52°0	33	26th	70	2nd
	Aberdeen	29°985	51°4	46°8	57°6	52°2	35	26th	70	9th
	Leith	30°002	53°2	46°8	60°3	53°6	35	22nd	72	10th
2. ENGLAND, N.E.	Shields	29°997	52°5	47°2	58°8	53°0	34	22nd	70	10th
	York	30°032	53°3	46°6	62°2	54°4	33	22nd	74	10th
	Spurn Head	30°010	54°7	51°0	59°6	55°3	42	21st, 23rd, 25th	74	11th
3. ENGLAND, E.	Yarmouth	30°012	54°9	49°7	60°3	55°0	35	23rd	75	11th
	Cambridge	30°047	54°6	47°1	64°5	55°8	35	17th	80	11th
4. MIDLAND COUNTIES	Loughborough	30°051	53°2	48°0	63°8	55°9	34	18th, 26th	78	11th, 12th
	Oxford	30°070	52°9	47°7	63°9	55°8	35	18th, 23rd	80	11th
5. ENGLAND, S.	London	30°057	55°1	48°9	65°3	57°1	35	23rd	81	11th
	Dungeness	30°035	56°2	50°7	63°2	57°0	35	23rd	76	12th
	Hurst Castle	30°078	57°1	51°5	64°9	58°2	40	23rd	74	12th, 13th
6. SCOTLAND, W.	Ardrossan	30°003	53°4	48°7	59°8	54°3	37	22nd	67	5th, 6th
7. ENGLAND, N.W.	Hawes Junction*	28°793	48°3	44°0	56°0	50°0	30	22nd, 23rd	67	10th
	Barrow-in-Furness	30°017	53°5	50°1	59°6	54°9	39	22nd	68	5th, 6th, 10th
	Liverpool	30°045	54°6	51°1	61°1	56°1	42	18th	73	10th
	Holyhead	30°043	55°4	52°1	60°7	56°4	45	23rd	68	1st, 6th, 12th
8. ENGLAND, S.W.	Pembroke	30°061	55°9	53°2	60°2	56°7	46	18th, 25th	67	6th
	Prawle Point	30°082	57°4	51°3	62°5	56°9	41	25th	76	13th
9. IRELAND, N.	Malin Head	29°984	54°0	51°3	58°2	54°8	43	20th, 23rd	69	10th, 12th
	Donaghadee	30°035	53°9	51°2	59°1	55°2	42	24th	70	9th, 10th
	Mullaghmore	30°022	55°8	52°3	61°1	56°7	42	23rd	76	12th
	Belmullet	30°018	56°0	52°6	60°5	56°6	43	23rd	75	12th
10. IRELAND, S.	Parsonstown	30°053	53°8	49°5	62°4	56°0	36	25th	75	12th
	Valencia	30°063	57°6	53°5	61°9	57°7	47	1st	71	1st
	Roche's Point	30°067	56°7	53°1	61°1	57°1	45	23rd, 25th	65	13th
CHANNEL ISLANDS	Scilly (St. Mary's)	20°066	58°4	54°9	62°3	58°6	50	23rd, 25th, 29th.	67	8th, 9th, 11th, 12th.
	Jersey	30°089	60°0	53°8	65°9	59°9	43	23rd, 26th	78	12th

* Hawes Junction is 1,135 feet above Mean Sea Level and the barometric

SUMMARY OF OBSERVATIONS, SEPTEMBER 1889.

XXXV

REPORTING STATIONS in the BRITISH ISLANDS during the Month of SEPTEMBER 1889.

Thunderstorms, and Gales are counted irrespective of the hour at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER.							WIND.								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Days of							No. of Observations of								
						Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins.	%		ins.	in.																	
0.308	88	8.6	2.81	0.36	19th	17	0	0	0	0	18	2	8	1	2	4	3	2	2	3	5
329	86	8.1	2.36	0.55	10th	14	0	1	1	1	19	3	5	0	2	1	8	2	3	7	3
374	96	7.9	4.51	0.70	10th	20	0	1	0	1	17	2	2	1	0	3	4	7	2	6	5
314	85	7.0	0.99	0.20	19th	16	0	1	0	2	7	1	1	0	0	1	3	5	5	3	12
311	82	7.5	1.04	0.50	18th	13	0	0	0	0	13	3	2	0	1	3	0	4	3	8	0
320	79	6.6	0.74	0.35	18th	8	0	1	0	2	8	0	0	3	6	2	1	4	8	4	2
354	89	7.5	1.27	0.29	11th	9	0	1	0	3	14	1	2	1	2	2	3	8	5	4	3
338	83	6.0	0.97	0.30	23rd	13	0	0	0	8	11	0	4	4	4	0	5	3	2	8	0
369	87	6.1	1.24	0.36	24th	12	0	0	1	6	12	6	2	6	4	0	2	7	5	4	0
371	87	4.2	3.58	1.49	24th	14	0	1	2	11	3	0	2	3	4	0	1	4	7	7	2
367	86	7.1	3.10	1.03	24th	11	0	1	2	3	18	0	7	3	2	2	4	3	6	3	0
355	88	7.3	2.28	0.92	23rd	13	0	0	0	3	12	0	2	6	4	2	0	4	8	3	1
351	88	7.1	1.71	0.92	24th	7	0	0	0	7	16	0	2	8	1	3	2	3	8	2	1
348	80	6.4	1.61	0.76	24th	9	0	0	1	8	14	0	2	9	1	2	1	6	6	3	0
370	82	5.8	1.10	0.30	24th	9	0	0	1	3	4	0	5	5	2	3	2	3	4	6	0
439	93	6.4	1.21	0.59	24th	5	0	0	0	1	4	2	4	4	5	0	1	4	5	5	2
347	85	7.0	1.97	0.66	18th	10	0	0	0	3	16	3	3	7	2	0	4	2	3	7	2
313	93	7.8	3.34	0.76	18th	16	0	2	0	1	18	0	3	6	5	4	6	5	0	1	0
359	87	6.6	3.84	0.73	20th	15	0	0	0	0	14	2	4	13	1	3	2	0	2	5	0
346	81	6.3	1.97	0.45	23rd	16	0	1	0	7	13	0	1	2	4	8	2	1	8	4	0
374	86	7.0	1.85	0.58	23rd	17	0	0	0	0	10	3	4	2	3	2	4	6	2	3	4
398	89	7.2	2.28	1.39	23rd	15	0	0	0	1	10	6	3	1	6	5	4	3	2	6	0
397	84	5.9	1.06	0.33	23rd	12	0	0	0	2	7	0	4	5	5	1	4	1	4	6	0
357	85	7.6	2.68	1.00	26th	13	0	0	1	2	19	4	5	0	0	5	9	4	2	5	0
381	92	6.4	1.63	0.48	11th	15	0	1	0	0	8	0	4	4	2	5	0	6	7	2	0
365	81	6.9	2.81	0.87	26th	20	0	0	0	4	8	9	4	2	3	5	4	4	2	5	1
383	85	8.4	2.88	0.56	26th	22	0	0	0	3	23	2	5	1	2	5	3	6	4	4	0
358	86	7.6	0.88	0.20	18th	14	0	0	0	0	14	0	0	0	0	7	0	4	0	4	15
406	85	8.2	3.47	0.71	10th, 23rd	22	0	0	1	0	20	3	3	1	3	6	3	5	5	2	2
393	85	6.8	1.91	0.65	23rd	16	0	0	0	0	12	0	6	1	3	3	7	3	4	3	0
442	90	8.3	1.17	0.38	2nd	14	0	0	0	0	17	3	4	2	4	5	3	2	3	5	2
395	76	5.5	0.86	0.32	21st	10	0	0	1	7	9	2	2	2	6	3	2	1	5	7	2

observations at this station are not corrected for altitude.

TABLE XVIII.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT, during the Month of SEPTEMBER 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentage of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	112.1	30
LAIRG	43.7	57.3	50.5	28	26th	68	4th	10	1.79	0.45	11th	—	—
GLENCARRON	44.4	57.8	51.1	31	25th	73	6th	18	6.35	1.09	18th	49.9	13
FORT AUGUSTUS	45.0	59.7	52.4	31	25th	71	5th	15	1.75	0.58	18th	—	—
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	105.4	28
BRAEMAR	41.3	56.9	49.1	30	24th	70	6th	13	1.13	0.27	18th	111.3	30
OCHTERTYRE	45.9	61.1	53.5	29	23rd	73	13th	12	0.82	0.25	18th	—	—
MARCHMONT	43.9	58.4	51.2	33	22nd	68	6th, 9th	12	1.52	0.45	18th	119.8	32
ALNWICK CASTLE	46.8	57.2	52.0	36	21st, 25th	67	10th	13	1.93	0.48	27th	—	—
DURHAM	46.1	60.3	53.2	33	21st, 22nd, 23rd	71	10th	11	0.84	0.26	24th	117.4	31
SCARBOROUGH	48.2	59.0	53.6	36	23rd	73	10th	16	1.00	0.27	24th	100.8	27
YORK	*	*	*	*	*	*	*	*	*	*	*	102.8	27
HILLINGTON	46.7	62.6	54.7	32	23rd	77	11th	8	2.35	0.80	24th	113.6	30
GELDESTON	47.2	62.7	55.0	33	17th	79	11th	11	3.48	1.23	24th	136.6	37
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	125.6	34
ROTHAMSTED	46.5	62.2	54.4	33	17th	78	11th	14	2.31	0.76	2nd	—	—
INGATESTONE	48.2	63.2	55.7	36	23rd	78	11th	9	2.54	1.14	2nd	—	—
BAWTRY	47.1	62.5	54.8	32	21st, 22nd	75	10th, 11th	10	1.24	0.62	23rd	101.8	27
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	112.0	30
CHEADLE	47.1	59.9	53.5	35	25th	73	11th, 12th	16	3.43	1.01	23rd	—	—
CHURCHSTOCKE	46.1	61.9	54.0	31	18th	77	12th	14	1.75	0.87	23rd	110.0	29
HREEFORD	48.2	63.3	55.8	32	18th	78	12th	10	1.28	0.73	23rd	—	—
CIRENCESTER	46.3	64.1	55.2	31	23rd	83	13th	8	1.72	0.70	23rd	111.5	30
OXFORD	*	*	*	*	*	*	*	*	*	*	*	121.1	32
LONDON	*	*	*	*	*	*	*	*	*	*	*	115.0	31
STRATHFIELD TURGISSE	46.3	65.4	55.9	31	17th, 18th, 23rd	80	12th	11	1.39	0.83	24th	—	—
HASTINGS	51.0	63.2	57.1	38	23rd, 26th	78	12th	6	1.73	1.10	2nd	171.9	46
SOUTHAMPTON	49.2	66.5	57.9	35	23rd	84	12th	6	1.05	0.46	24th	137.7	37
STOWELL	48.0	62.5	55.3	34	23rd	77	12th	9	1.87	0.59	24th	119.5	32
LAUDALE	48.8	60.1	54.5	33	22nd	70	6th	18	3.70	0.97	18th	—	—
GLASGOW	46.9	58.5	52.7	34	22nd	68	10th	12	1.88	0.72	18th	108.9	29
GLENLEE	44.1	59.7	51.9	30	21st, 22nd	70	1st, 4th, 6th	14	2.07	0.68	18th	—	—
DOUGLAS	48.2	59.4	53.8	38	23rd, 25th	66	6th, 12th	17	3.00	0.97	18th	129.4	35
NEWTON REIGNY	43.2	60.1	51.7	28	22nd	71	5th	11	1.90	0.54	18th	149.9	40
STONYHURST	47.6	59.0	53.3	34	22nd	71	12th	14	5.16	2.06	26th	118.3	32
BLACKPOOL	49.1	61.0	55.1	39	22nd	73	10th	15	3.16	0.57	18th	117.5	31
MANCHESTER	47.8	61.3	54.6	35	22nd	72	10th	14	3.00	0.68	26th	—	—
LLANDUDNO	51.1	62.4	56.8	42	18th	72	10th, 12th	13	2.22	0.45	18th	105.7	28
LLANDOVERY	46.1	65.8	56.0	31	22nd, 25th	84	12th	15	2.82	1.17	23rd	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	113.7	30
ARLINGTON	48.6	62.0	55.3	36	26th	79	12th	14	2.36	0.82	23rd	—	—
CULLOMPTON	46.6	64.8	55.7	32	23rd	80	12th	11	1.55	0.80	23rd	119.5	32
FALMOUTH	52.3	61.7	57.0	44	25th, 26th	73	11th	13	1.88	0.80	2nd	137.7	37
PLYMOUTH	51.6	64.4	58.0	40	26th	72	4th, 12th	13	1.78	1.03	23rd	139.4	37
JERSEY	*	*	*	*	*	*	*	*	*	*	*	196.1	53
LONDONDERRY	49.3	61.4	55.4	39	22nd, 23rd	76	12th	19	3.76	1.20	26th	—	—
MARKREE CASTLE	48.6	60.9	54.8	35	23rd	75	12th	22	3.18	0.68	19th	83.5	22
BROOKBOROUGH	47.7	60.2	54.0	34	23rd	71	12th	17	3.11	0.59	26th	—	—
ARMAGH	48.1	60.9	54.5	36	25th	70	12th	15	2.11	0.50	11th	94.9	25
EDGEWORTHSTOWN	47.8	61.5	54.7	35	23rd	74	12th	17	2.39	0.51	18th	—	—
DUBLIN	50.6	60.9	55.8	39	25th	70	11th	13	1.04	0.35	23rd	98.1	26
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	114.0	30
KILKENNY CASTLE	49.1	61.5	55.3	37	25th	70	1st, 12th	10	0.66	0.16	18th	—	—
WATERFORD	50.1	62.9	56.5	39	18th, 23rd, 25th, 26th.	70	3rd	10	0.85	0.35	23rd	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	88.6	24
KILLARNEY	51.4	62.5	57.0	34	25th	72	12th	13	3.08	0.79	23rd	—	—
FOYNES	51.5	62.7	57.1	42	24th	73	12th	16	1.98	0.46	17th	—	—

* For information see Table XVII.

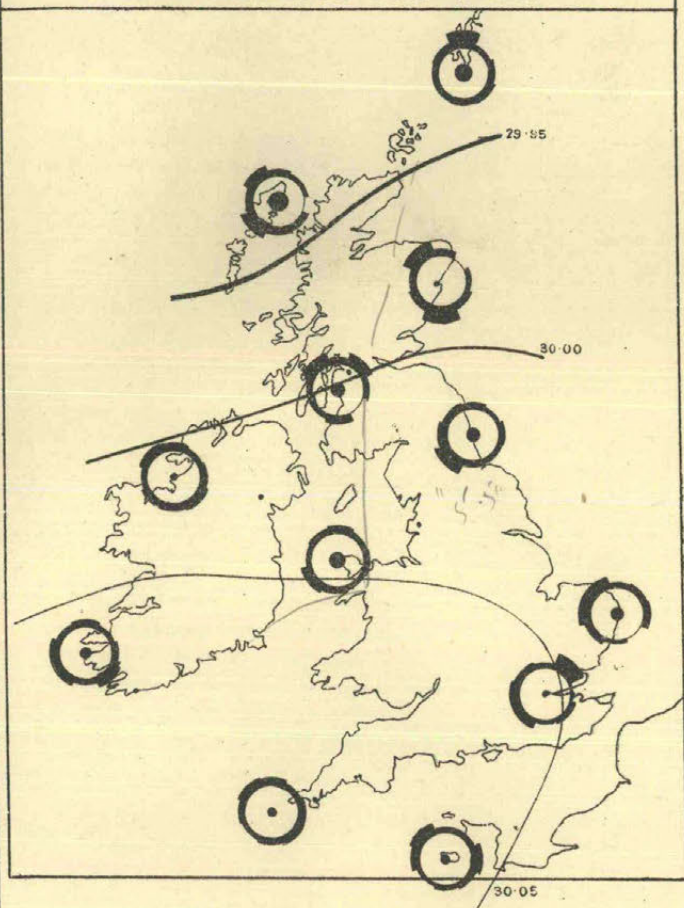
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksoy, and those to Loughborough at Thurstaston.

MONTHLY WEATHER CHART SEPTEMBER 1889.

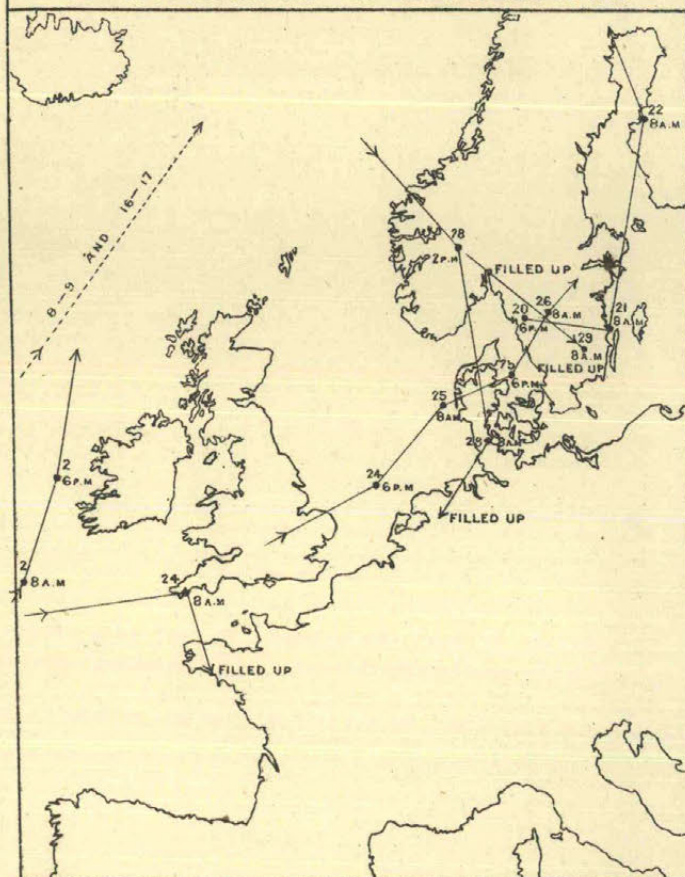
Monthly Summary

Plate IX.

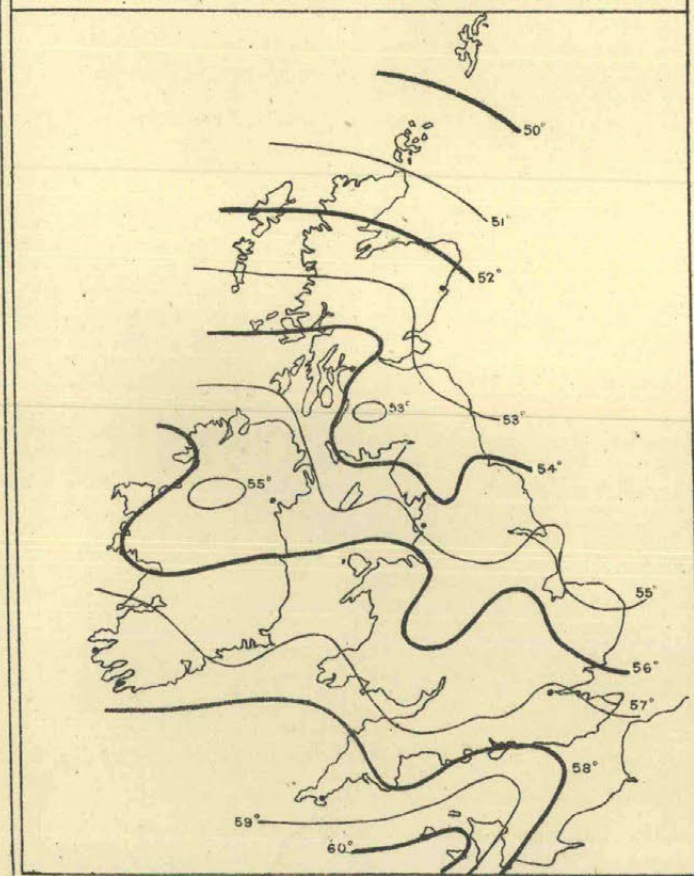
1. BAROMETER AND WIND.



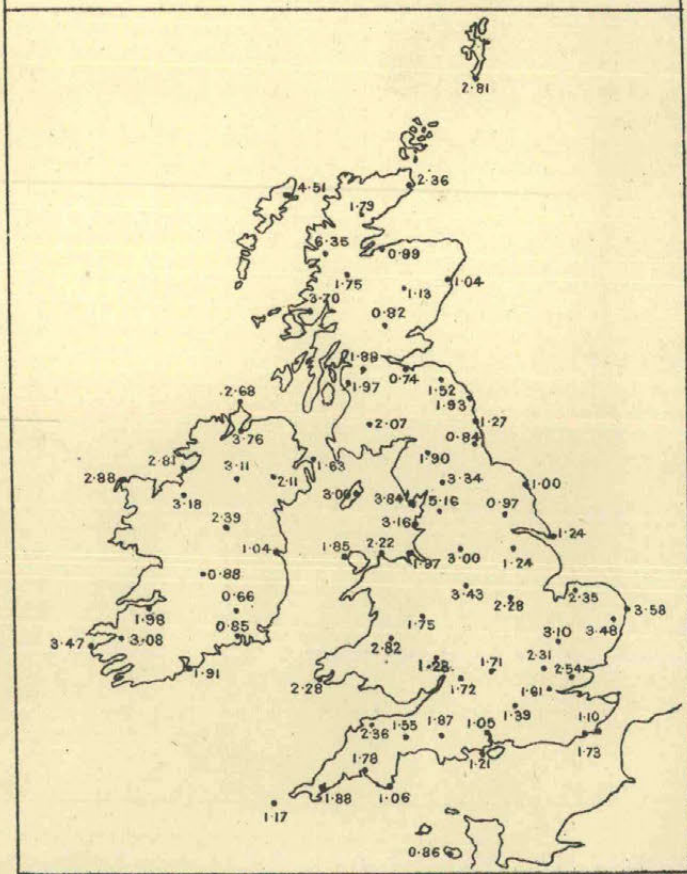
2. MOVEMENTS OF DEPRESSIONS.

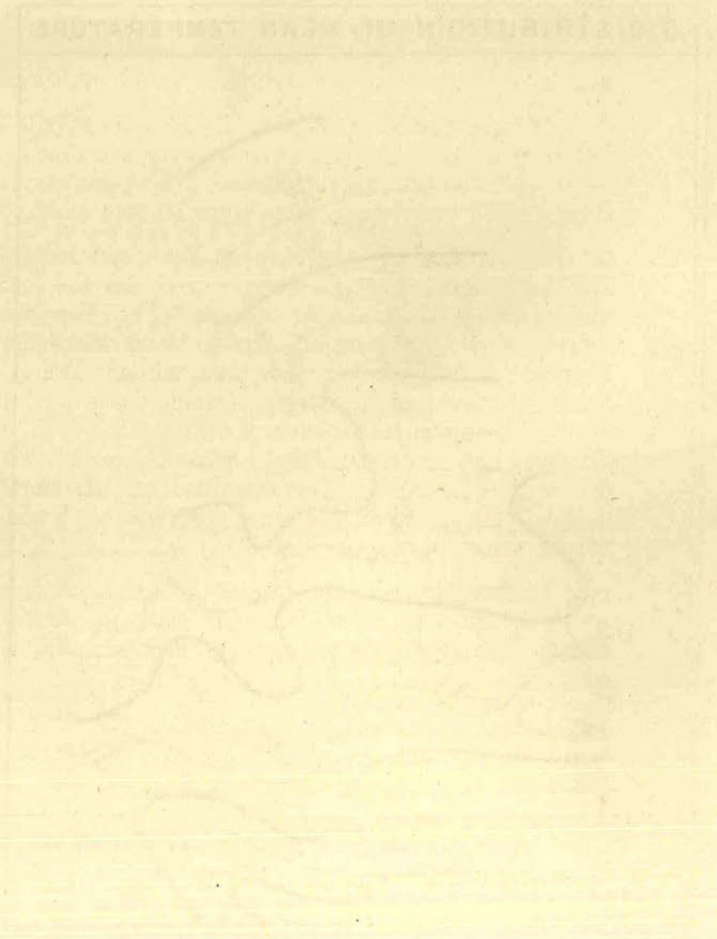
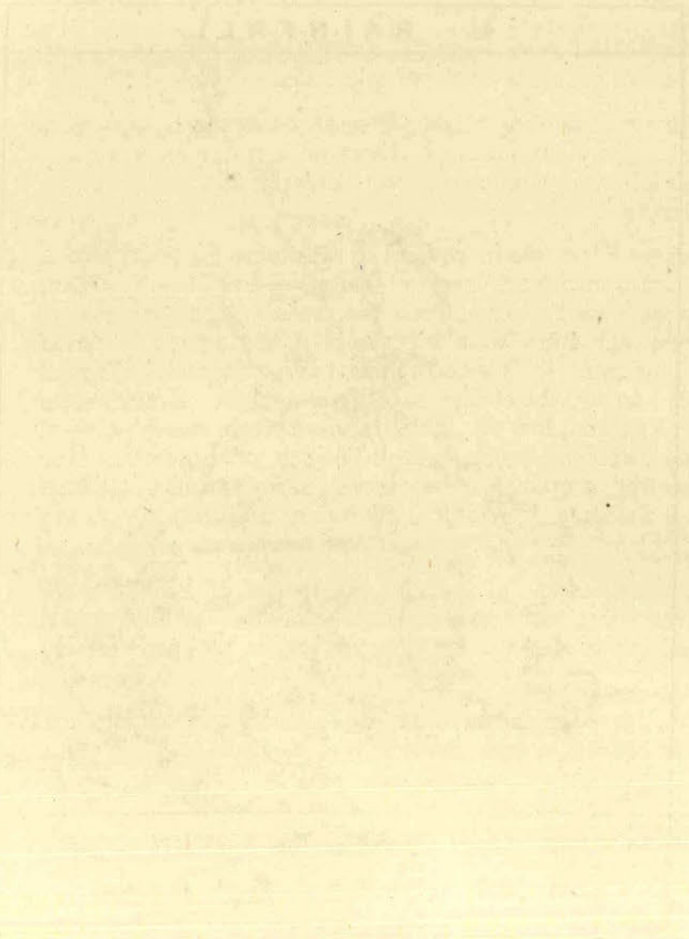
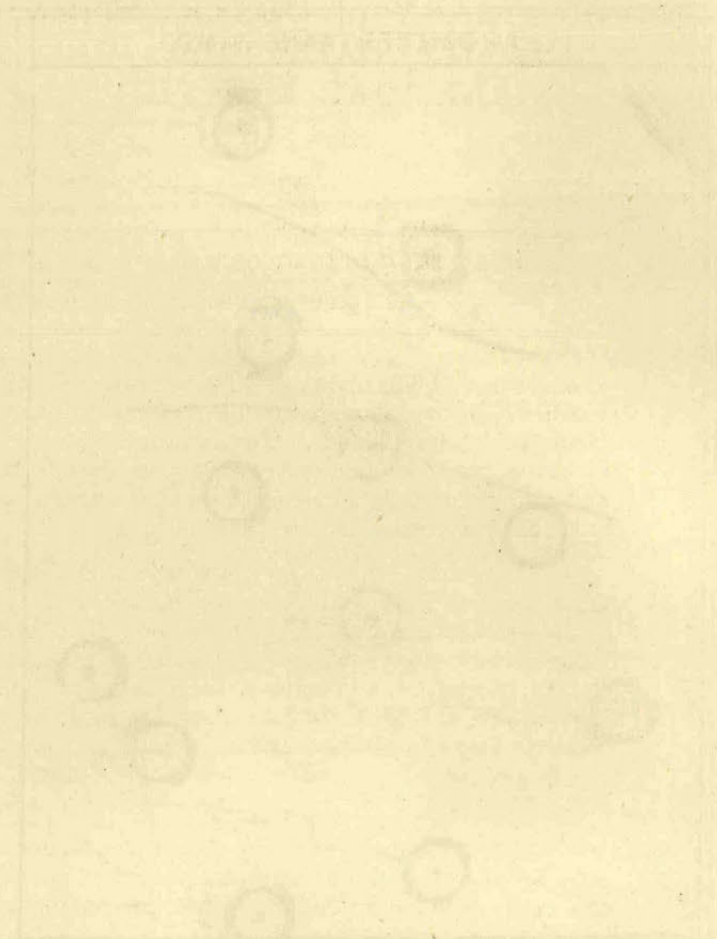
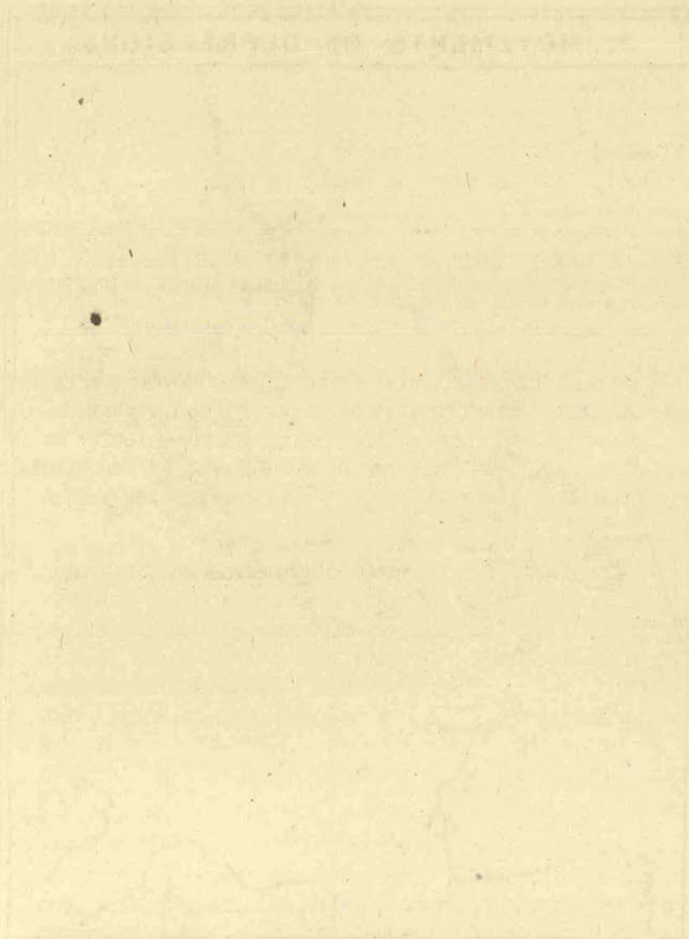


3. DISTRIBUTION OF MEAN TEMPERATURE.



4. RAINFALL.





**SUMMARY of OBSERVATIONS made at the STATIONS included
in the DAILY and WEEKLY WEATHER REPORTS, for the
CALENDAR MONTH,**

OCTOBER 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH
BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of October was cold, unsettled, and wet. Pressure was everywhere below the average and deep cyclonic disturbances appeared at times over or in the immediate neighbourhood of our Islands. Temperature was low and its range moderate. The wind varied greatly in direction, but was frequently strong in force, a severe gale being experienced in most places on the 7th. Rainfall was as a rule in excess of the average, especially in the extreme south. The amount of bright sunshine was somewhat less than usual.

Pressure.—*Mean for the Month at 8 a.m.*, varied from 29·60 ins. and less, off the west of Scotland, to about 29·70 ins. and more over the North Sea, the greater part of the English Channel, and the extreme south-west of Ireland. Gradients were therefore slight, and the distribution of pressure was irregular. The mean was everywhere less than the average,* the difference varying from about 0·20 inch in the south-eastern parts of England to a very few hundredths in the north of Scotland. *Highest* values were recorded on the 25th or 26th, when the readings varied from about 30·1 ins. on our extreme south-west coasts to 30·4 ins. in the east of Scotland. *Lowest* were observed on the 9th, when the barometer in the extreme north of Ireland fell below 28·6 ins. *Range* was somewhat large, especially on our extreme north-west coasts.

Depressions were very numerous and moved in various directions. The two most important were:—(1) a deep disturbance which passed across our northern districts on the 7th, occasioning a general and severe gale; and (2) a somewhat serious, though less deep, depression which advanced northwards across the Bay of Biscay on the 26th–27th, producing a strong Easterly gale on our southern coasts. Between the 12th and 15th two well-defined systems travelled *northwards* from central Europe to the north of Scandinavia.

Anticyclones.—No complete anticyclonic system passed over us, but a well-marked ridge extended south-westwards from Scandinavia to our northern districts between the 23rd and 25th.

Wind varied greatly in direction. In the south-west it was chiefly Westerly and North-westerly, in the south-east of England Southerly and South-westerly, but in the north there was a large proportion of wind from the Eastward and North-eastward. Gales were numerous over Ireland and England; at Spurn Head and Jersey there were 10, and at Mullaghmore 13.

Temperature.—*Mean at Sea Level* ranged from 46° or less in several of the more central parts of Ireland and Scotland to 51° or more on the south and south-west coasts of England, to 52°·5 at Scilly, and to 54° in the Channel Islands. The distribution was fairly normal, but the mean values were everywhere below the average.* In Scotland the deficit was not more than a degree, but in England it varied from one and a half to two degrees, while in Ireland it amounted to two and a half or three degrees. *Highest* values were recorded on very variable dates, but mostly during the earlier half of the month. *Lowest* were registered as a rule between the 11th and 15th over England, but on the 25th or 29th in many parts of Scotland and Ireland. *Range* was not large. *Vapour Tension* varied from 0·26 inch or rather less over the central parts of Ireland, Scotland, and the north-west of England to between 0·32 inch and 0·34 inch over the Channel and the south and east of England. *Relative Humidity* was fairly uniform, the values ranging from 83 per cent. at Scilly and Jersey to 95 at Stornoway and 96 at Hawes Junction.

Rainfall was more than the average* in all localities excepting the north-west of England, the north of Ireland, and the west of Scotland, where there was a marked deficiency. At most of the Channel stations the aggregate fall ranged from six and a quarter to eight and a quarter inches, and was nearly twice as much as the average for October.

Bright Sunshine amounted to 38 per cent. of the possible duration at Valencia, and 42 per cent. at Stornoway, but to only 13 per cent. at Durham, Scarborough, and Bawtry, and 14 per cent. at Fort Augustus, Marchmont, York, and Glasgow.

* The averages employed are—*Pressure and Temperature*, for 20 years 1861–80; *Rainfall* for 20 years 1866–85.

TABLE XIX.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Number of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			Means of				Absolute Extremes.			
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29°686	47°3	43°1	51°0	47°1	36	14th	55	11th
	Wick	29°675	47°3	41°5	52°1	46°8	32	28th, 29th	55	2nd, 3rd, 5th, 6th, 7th, 12th, 14th, 5th
	Stornoway	29°629	45°8	39°2	51°8	45°5	28	28th	55	5th
1. SCOTLAND, E.	Nairn	29°657	42°5	37°1	52°5	44°8	26	25th	57	6th, 30th
	Aberdeen	29°686	45°2	41°2	51°6	46°4	33	10th, 29th	58	6th
	Leith	29°662	46°0	41°2	52°3	46°8	35	11th	59	6th, 10th
2. ENGLAND, N.E.	Shields	29°663	47°0	43°1	52°3	47°7	39	11th 15th	59	6th
	York	29°677	46°0	41°2	53°6	47°4	34	11th	58	2nd
	Spurn Head	29°691	49°1	45°6	53°1	49°4	41	9th, 10th	58	2nd
3. ENGLAND, E.	Yarmouth	29°682	49°3	44°9	53°6	49°3	38	14th	57	8th
	Cambridge	29°692	46°5	40°7	55°8	48°3	31	14th	62	16th
4. MIDLAND COUNTIES	Loughborough	29°686	44°5	40°3	55°0	47°7	29	14th	60	3rd, 21st
	Oxford	29°693	44°9	41°5	55°1	48°3	32	14th, 15th	59	3rd, 6th, 10th, 16th.
5. ENGLAND, S.	London	29°691	47°1	43°0	56°0	49°5	35	13th	61	15th, 16th
	Dungeness	29°682	49°5	45°5	56°5	51°0	36	13th, 14th	60	7th
	Hurst Castle	29°690	50°3	46°4	56°1	51°3	39	13th	59	14th
6. SCOTLAND, W.	Ardrossan	29°650	46°5	41°8	54°2	48°0	36	13th, 26th, 27th	64	4th
7. ENGLAND, N.W.	Hawes Junction*	28°428	42°4	38°7	48°1	43°4	33	11th, 26th	54	11th
	Barrow-in-Furness	29°664	47°3	44°0	52°4	48°2	38	26th	57	1st
	Liverpool	29°665	46°3	43°3	52°8	48°1	38	1th, 13th	56	5th, 6th, 10th, 30th, 5th
	Holyhead	29°651	49°3	46°7	53°8	50°3	42	14th, 25th	58	5th
8. ENGLAND, S.W.	Pembroke	29°670	49°8	46°9	54°0	50°5	42	25th, 26th	57	1st, 6th
	Prawle Point	29°724	50°6	45°2	56°0	50°6	40	28th	62	13th
9. IRELAND, N.	Malin Head	29°608	47°4	44°8	52°0	48°4	40	9th, 25th	55	5th, 10th, 15th, 16th, 10th, 11th
	Donaghadee	29°652	47°0	44°1	53°3	48°7	34	14th	58	10th, 11th
	Mullaghmore	29°640	48°0	44°2	53°6	48°9	37	24th, 25th	58	15th, 16th
	Belmullet	29°655	48°5	45°4	53°1	49°3	36	28th	57	6th
10. IRELAND, S.	Parsonstown	29°680	42°5	37°9	53°2	45°6	28	25th, 26th	58	15th
	Valencia	29°715	49°0	44°5	55°2	49°9	36	25th	59	6th
	Roche's Point	29°698	47°3	43°3	54°5	48°9	38	11th, 29th	62	1st
CHANNEL ISLANDS	Scilly (St Mary's)	29°688	52°4	48°9	55°5	52°2	46	9th, 20th	60	15th
	Jersey	29°721	52°9	48°1	58°1	53°1	40	14th	65	24th

* Hawes Junction is 1,135 feet above Mean Sea Level and the

REPORTING STATIONS in the BRITISH ISLANDS during the Month of OCTOBER 1889.

Thunderstorms, and Gales are counted irrespective of the Hours at which they occurred.

beginning in each case with the Station lying furthest North.)

	TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER, No. of Days of							WIND, No. of Observations of									
				Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.	
	ins.	%		ins.	ins.																		
	0.289	90	7.9	4.41	0.97	9th	25	0	1	1	1	18	1	3	4	2	6	6	0	2	0	8	
	289	90	6.8	4.04	0.85	9th	25	0	0	0	3	14	4	2	2	1	7	6	6	3	3	1	
	291	95	7.5	2.67	0.60	7th	17	0	0	0	0	13	3	3	6	2	5	1	6	2	1	5	
	241	89	6.6	2.05	0.63	7th	19	0	0	0	1	9	0	2	1	4	2	0	4	2	1	15	
	264	88	7.3	3.52	0.54	17th	25	0	0	0	0	12	6	1	2	4	3	4	4	7	6	0	
	274	89	7.1	2.97	0.53	21st	23	0	0	0	1	8	1	1	4	4	4	5	2	6	3	2	
St. Louis	291	91	8.6	4.10	0.97	12th	24	0	0	1	0	20	3	2	4	5	1	2	11	3	3	0	
	280	91	8.5	4.12	0.57	11th	23	0	0	1	2	20	1	8	2	3	3	6	4	1	4	0	
	311	89	6.5	3.54	0.63	16th	21	0	0	0	1	11	10	2	6	4	2	9	3	4	1	0	
	321	92	4.9	4.16	0.62	16th	26	0	0	1	9	7	7	3	2	4	3	5	6	5	1	2	
	297	94	5.9	3.12	1.06	16th	21	0	0	1	8	13	0	8	2	1	2	9	6	2	0	1	
ox	274	94	8.2	2.71	0.68	27th	22	0	0	0	2	19	3	3	4	1	6	3	4	6	3	1	
	272	92	7.1	2.44	0.53	27th	18	0	0	1	8	18	0	5	4	2	3	6	5	2	1	3	
17	295	91	7.2	3.86	0.71	19th	24	0	0	0	8	20	2	3	1	3	1	6	3	7	1	6	
11	310	88	8.1	6.28	0.98	8th	23	0	0	4	0	13	9	3	1	4	0	4	7	5	7	0	
	341	94	6.4	7.29	1.15	3rd	24	0	3	1	0	5	6	3	9	3	1	3	5	6	1	0	
	274	87	8.0	3.40	0.54	30th	18	0	0	0	1	19	2	2	11	4	2	3	2	2	2	3	
11	260	96	9.0	8.86	1.48	9th	25	0	0	0	0	25	2	3	4	10	3	7	2	1	1	0	
	283	88	7.3	5.06	0.94	9th	20	0	0	0	0	13	4	6	11	2	5	2	3	1	1	0	
11	272	88	8.0	3.02	0.48	12th	20	0	0	0	4	22	2	1	7	5	5	4	4	3	2	0	
11	304	87	7.2	5.13	1.13	3rd	25	0	0	0	0	10	5	1	6	6	2	3	4	3	2	4	
11	325	91	6.6	4.09	0.73	18th	23	0	0	0	0	7	4	4	6	5	1	2	4	6	3	0	
11	315	86	6.9	6.59	2.07	21st	24	0	0	3	0	15	6	5	4	3	1	3	3	7	4	1	
	286	88	7.5	3.59	0.73	8th	20	0	0	0	2	18	4	5	1	4	7	8	2	1	3	0	
	301	94	6.2	2.59	0.44	4th	22	0	0	0	2	10	5	0	8	4	2	2	7	5	3	0	
	295	89	6.7	5.64	0.86	6th	21	0	1	0	4	8	13	4	3	6	3	2	6	3	3	1	
	299	88	6.8	7.39	1.18	6th	24	0	0	0	5	16	2	4	2	1	3	2	6	4	4	0	
	243	90	7.1	3.20	0.69	18th	24	0	0	0	0	10	0	0	0	0	1	0	6	1	1	22	
	303	87	7.1	5.96	1.19	17th	23	0	1	0	1	11	2	3	4	3	1	2	3	8	5	2	
	283	88	4.7	4.98	1.05	21st	19	0	1	0	0	5	5	8	3	2	1	2	1	10	4	0	
	325	83	7.9	4.79	0.82	22nd	26	0	2	1	1	13	9	7	4	2	2	2	3	6	5	0	
	333	83	7.0	8.24	1.21	8th	26	0	1	2	1	11	10	2	1	2	3	4	8	6	5	0	

barometrical observations at this station are not reduced for altitude.

TABLE XX.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of OCTOBER 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Per-centages of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	129.7	42
LAIRG	36.5	51.2	43.9	22	28th	55	1st, 5th	19	2.96	0.89	7th	—	—
GLENCARRON	38.2	51.0	44.6	26	28th	57	16th	19	4.56	0.70	6th, 30th	66.2	21
FORT AUGUSTUS	38.8	51.3	45.1	25	25th	57	19th	19	2.22	0.46	30th	44.2	14
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	78.4	25
BRAEMAR	36.3	48.3	42.3	24	14th	55	2nd	22	3.58	0.61	19th	49.0	16
OCHTERTYRE	38.0	52.7	45.4	31	28th	62	2nd	22	4.03	0.57	19th	—	—
MARCHMONT	39.9	50.3	45.1	33	9th	57	6th, 10th	29	5.70	0.95	12th	43.3	14
ALNWICK CASTLE	42.1	51.5	46.8	35	24th	57	5th, 29th	24	4.97	0.62	12th	—	—
DURHAM	41.4	52.1	46.8	34	11th	59	11th	25	3.71	0.58	22nd	42.1	13
SCARBOROUGH	43.9	51.8	47.9	36	11th	58	15th	22	5.13	1.11	11th	140.7	13
YORK	*	*	*	*	*	*	*	*	*	*	*	45.9	14
HILLINGTON	41.9	53.8	47.9	33	14th	59	16th	21	3.16	1.10	16th	81.3	25
GELDESTON	42.9	55.6	49.3	22	15th	60	15th	20	3.77	0.51	16th	91.2	28
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	91.6	28
ROTHAMSTED	40.5	54.1	47.3	31	13th	59	17th	24	3.51	0.58	19th	—	—
INGATESTONE	41.8	55.0	48.4	33	13th	59	17th	22	3.38	0.65	16th	—	—
BAWTRY	39.7	53.3	46.5	30	11th, 15th	59	10th	25	2.99	0.42	11th, 27th	142.6	13
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	169.8	22
CHEADLE	40.3	51.7	46.0	34	11th	55	9th, 14th, 17th	25	3.08	0.50	19th	—	—
CHURCHSTOKE	39.6	52.8	46.2	29	14th	57	2nd, 6th, 10th, 12th, 13th, 17th.	23	3.61	0.37	19th	83.1	26
HEREFORD	40.9	55.2	48.1	30	14th	62	10th	23	2.40	0.35	19th	—	—
GIRENCESTER	39.1	53.5	46.3	29	13th	58	10th	23	2.25	0.35	27th	84.0	26
OXFORD	*	*	*	*	*	*	*	*	*	*	*	92.0	28
LONDON	*	*	*	*	*	*	*	*	*	*	*	65.7	20
STRATHFIELD TURGISSE	40.5	55.8	48.2	30	13th	60	2nd	23	3.16	0.44	20th	—	—
HASTINGS	46.0	56.6	51.3	42	12th, 14th, 25th, 31st.	60	7th	23	6.45	1.33	8th	104.2	32
SOUTHAMPTON	43.5	57.2	50.4	32	13th	62	17th	20	5.37	1.08	3rd	87.0	27
STOWELL	41.3	53.5	47.4	30	13th	58	6th	24	4.66	0.82	18th	68.3	21
LAUDALE	40.9	54.3	47.6	29	28th	60	20th	16	5.22	1.04	8th	—	—
GLASGOW	41.2	50.9	46.1	34	29th	55	6th	17	3.33	0.60	6th	43.8	14
GLENNIE	37.8	51.7	44.8	26	26th	56	2nd, 6th, 11th	23	5.71	1.45	6th	—	—
DOUGLAS	42.0	53.6	47.8	33	14th	58	11th	23	3.97	0.93	6th	86.9	27
NEWTON REIGNY	39.5	51.2	45.4	26	26th	56	5th, 11th	25	5.25	1.07	8th	54.8	17
STONYHURST	41.9	51.6	46.8	34	11th, 14th	55	2nd, 31st	21	3.41	0.75	6th	50.0	16
BLACKPOOL	42.0	53.4	47.7	34	14th	58	7th	20	3.84	0.84	9th	66.0	21
MANCHESTER	42.2	52.2	47.2	35	14th	57	31st	23	2.89	0.44	6th	—	—
LLANDUDNO	44.2	53.7	49.0	38	25th	59	7th, 30th	20	3.36	0.57	6th	54.2	17
LLANDOVERY	39.0	55.3	47.2	28	12th, 13th	62	2nd	27	5.31	0.65	6th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	103.2	32
ARLINGTON	41.2	53.2	47.2	32	14th	58	13th	27	7.67	0.74	4th	—	—
CULLOMPTON	40.1	55.3	47.7	29	13th	62	6th	27	4.64	0.59	18th	71.4	22
FALMOUTH	45.1	54.4	49.8	40	25th	59	6th	26	5.99	1.36	18th	109.6	34
PLYMOUTH	43.4	55.2	49.3	35	14th	60	2nd	24	5.27	0.77	18th	87.4	27
JERSEY	*	*	*	*	*	*	*	*	*	*	*	113.7	35
LONDONDERRY	40.8	53.7	47.3	33	25th	58	12th	23	4.75	0.92	6th	—	—
MARKREE CASTLE	38.9	52.9	45.9	25	25th	58	15th, 16th	21	6.15	1.84	18th	87.4	27
BROOKBOROUGH	37.8	52.3	45.1	27	28th	57	1st, 5th, 13th	21	4.81	0.85	18th	—	—
ARMAGH	39.8	53.0	46.4	31	28th	58	5th, 13th	19	3.14	0.58	6th	78.1	24
EDGEWORTHSTOWN	38.8	52.0	45.4	31	14th, 25th	57	4th	21	4.55	0.92	18th	—	—
DUBLIN	43.3	52.9	48.1	35	14th	57	6th, 7th, 15th, 16th, 30th.	22	4.85	0.94	19th	77.9	24
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	80.9	25
KILKENNY CASTLE	38.9	53.4	46.2	29	29th	59	16th	22	4.49	1.67	18th	—	—
WATERFORD	40.6	54.7	47.7	30	14th	61	2nd	24	5.05	2.06	18th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	122.8	38
KILLARNEY	39.0	53.7	46.4	27	26th	59	7th	22	6.41	1.03	18th	—	—
FOYNES	42.9	52.9	47.9	36	13th, 23rd, 28th	57	15th	23	3.90	0.55	2nd	—	—

* For information see Table XIX.

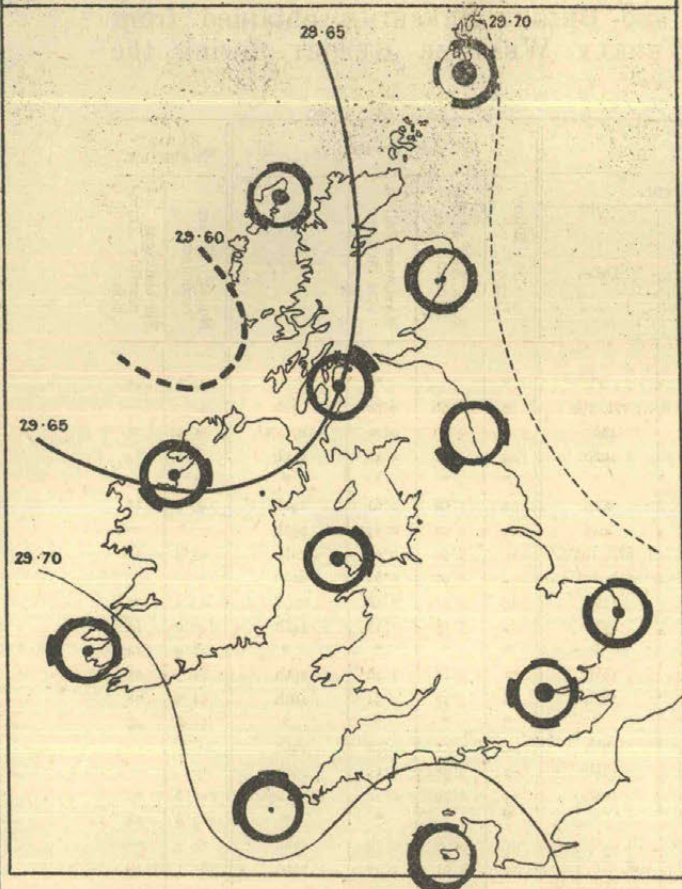
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Thurstaston.

MONTHLY WEATHER CHART OCTOBER 1889.

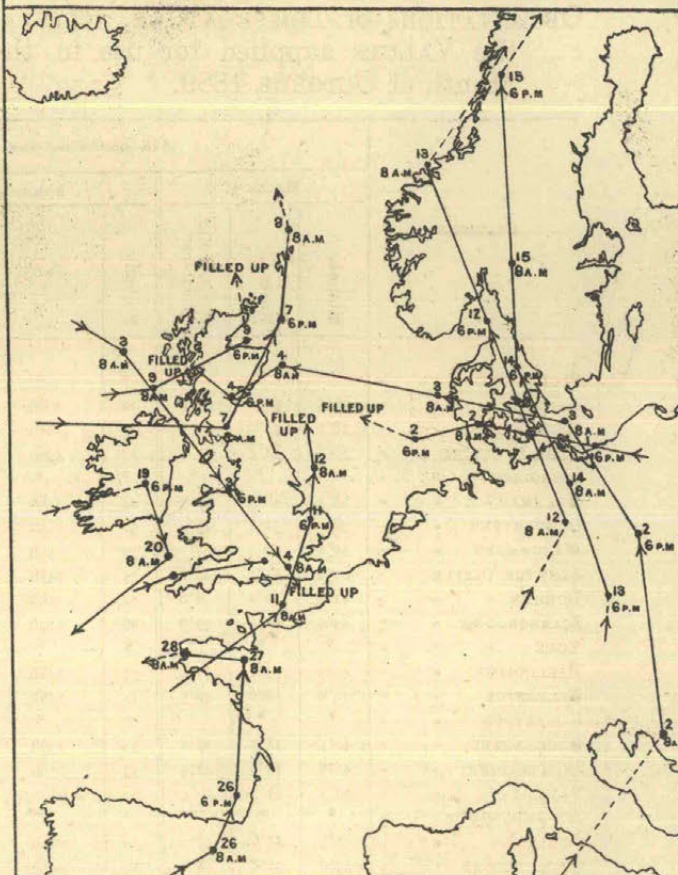
Monthly Summary.

Plate X.

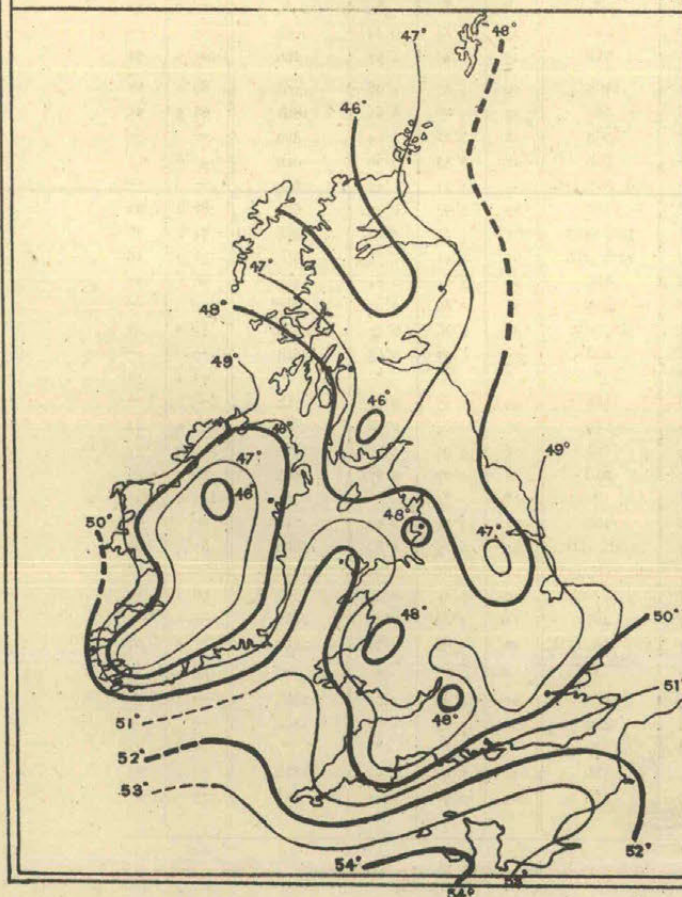
1. BAROMETER AND WIND.



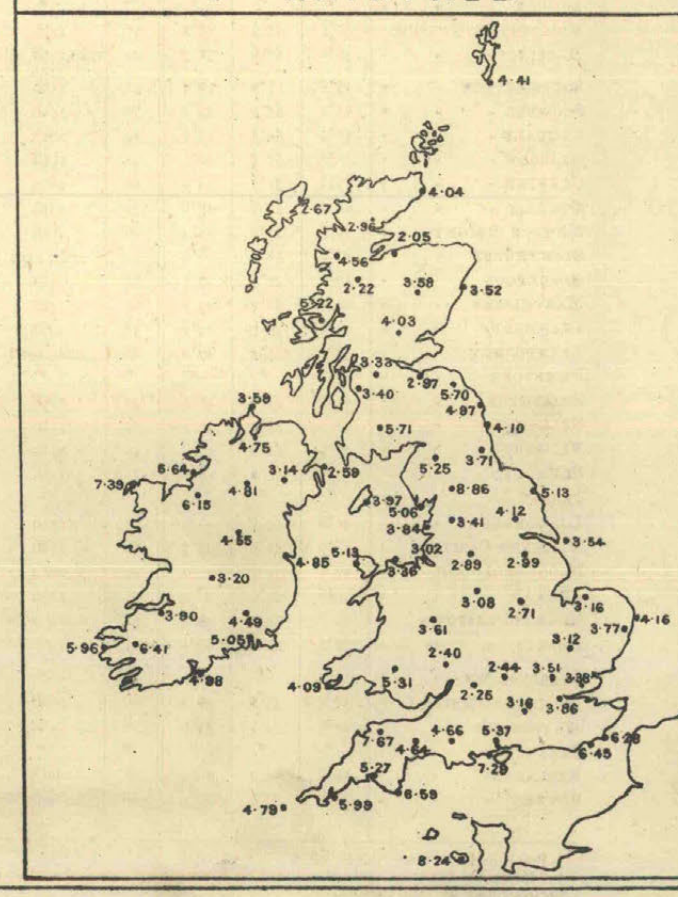
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE.



4. RAINFALL.



OFFICIAL COPY.

SUMMARY of the OBSERVATIONS made at the STATIONS included
in the DAILY and WEEKLY WEATHER REPORTS for the
CALENDAR MONTH,

NOVEMBER 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH
BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The weather of November was upon the whole fair, dry, and quiet, but mists and fog were of frequent occurrence, especially at the inland stations. Snow and hail showers were experienced towards the close of the month. Pressure and temperature were everywhere in excess of the average, but the amount of rainfall was considerably less than the normal; in many parts of Great Britain the aggregate fall was less than an inch. Bright sunshine was somewhat deficient, especially in the extreme north, where, as well as in London, the per-centage of the possible duration was 10 or less.

Pressure.—*Mean for the Month at 8 a.m.* varied from a little below 29·90 ins. in the Shetlands to a little above 30·20 ins. over the southern parts of England, and a little above 30·25 ins. in the Channel Islands. The distribution was fairly normal, but readings were everywhere in excess of the average, the difference varying from about 0·15 in. in the extreme north to 0·30 in. or a little more in the south. The mean gradient over the United Kingdom was twice as steep as is usual in November. *Highest values*, 30·4 ins. to 30·6 ins. and upwards, were recorded between the 17th and 20th. *Lowest*, which ranged from 28·9 ins. or a little less in the north to about 29·7 ins. in the south, were recorded as a rule on the 1st, but pressure was almost as low on the 25th. Range was somewhat large (1·5 ins. or more) in the north, moderate in the south.

Depressions were few in number, and moved as a rule outside the limits of our Islands. On the 1st, however, a deep disturbance travelled north-eastwards across the northern parts of the kingdom.

Anticyclones.—Between the 10th and the 14th a large anticyclone, which had previously advanced from the southward, moved slowly to the eastward across the country, while from the 16th to the 21st another large system extended from Central Europe over the greater part of our Islands. On the 28th an anticyclone extended over us, temporarily, from the westward.

Wind was chiefly from a South-westerly or Westerly quarter, but on our south-west coasts there was a somewhat large admixture of breezes from the South-eastward. Strong gales from the Westward were experienced pretty generally on the 1st, and also between the 24th and 25th, while on the 27th a slight gale from the Northward was reported on exposed parts of our coasts.

Temperature.—*Mean at Sea Level* ranged from a little below 43° at Aberdeen and a little below 44° in nearly all the more eastern parts of Great Britain, to 50° or more in the extreme south-west of England. The distribution was fairly normal, but the values were everywhere in excess of the average,* the difference in most cases being about 2°. In the south-west of Scotland, however, the excess amounted to more than 3°. *Highest readings* were recorded mostly on the 7th and 8th, but at some of the eastern stations the 10th was the warmest day, while in the north-west of England the actual maxima were registered on varying dates. *Lowest readings* were recorded between the 27th and 30th. Range was moderate generally, but large (47°) at Llandovery, where intense frost was reported on the morning of the 27th. *Vapour Tension* ranged from 0·22 in. at Aberdeen, 0·26 in. in the north-west of England, and 0·26 in. in Central Ireland, to 0·30 in. or more in the south-western parts of the kingdom. *Relative Humidity* was above 90 per cent. in most places, and as high as 96 at Stornoway and Donaghadee, but in the north-east of Scotland it did not exceed 85 per cent.

Rainfall varied from less than an inch in the south-east of Scotland and many parts of England (only 0·41 in. at Bawtry) to 3 ins. or more on the south-west coasts of Ireland and England, to 6·3 ins. at Laudale, and to 9·2 ins. at Glencarron. The values were considerably less than the average in all places; at Bawtry the amount was less than one fifth of the normal quantity.

Bright Sunshine.—The amount was in most cases less than 20 per cent. of the possible duration; in London and the north of Scotland it was as low as 10 per cent. or less. At Hillington, however, the per-centage was 27, at Dublin 28, and at Aberdeen 30.

* The averages employed are—Pressure and Temperature for 20 years, 1861–80; Rainfall for 20 years, 1866–85.

TABLE XXI.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
Observations are made at 8 a.m. daily, but the Number of Days of Rain, Snow, Hail,
(The Stations are grouped in Districts, and then arranged in order of Latitude,

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 82° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.						
			Means of				Absolute Extremes.		
			At 8 a.m.	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.
1. SCOTLAND, N.	Sumburgh Head	ins. 29°880	44°9	41°0	48°4	44°7	28	26th, 28th	52
	Wick	29°964	43°3	38°3	48°5	43°4	29	26th, 27th	58
	Stornoway	29°947	45°6	40°3	48°0	44°6	27	27th	54
2. SCOTLAND, E.	Nairn	29°988	43°3	38°0	49°5	43°8	29	26th, 27th	59
	Aberdeen	30°030	41°5	37°2	48°2	42°7	29	26th, 27th	62
	Leith	30°063	44°1	39°4	50°4	44°9	29	17th	59
2. ENGLAND, N.E.	Shields	30°108	43°2	38°5	48°8	43°7	28	27th	60
	York	30°154	42°1	37°5	48°8	43°2	27	13th, 14th, 27th	60
	Spurn Head	30°144	44°3	40°7	48°2	44°5	30	28th	57
3. ENGLAND, E.	Yarmouth	30°178	43°6	39°4	48°1	43°8	28	27th	56
	Cambridge	30°212	42°5	37°4	50°0	43°7	26	28th	61
4. MIDLAND COUNTIES	Loughborough	30°198	42°1	38°7	49°6	44°2	26	13th, 28th	62
	Oxford	30°227	42°7	39°4	49°1	44°3	28	13th, 14th, 28th, 29th.	59
5. ENGLAND, S.	London	30°222	43°2	39°3	50°2	44°8	28	27th, 29th	60
	Dungeness	30°211	44°9	40°9	50°3	45°6	26	27th	58
	Hurst Castle	30°244	47°5	43°7	52°1	47°9	30	28th, 29th	59
6. SCOTLAND, W.	Ardrossan	30°075	46°4	42°5	49°8	46°2	31	27th, 28th	55
7. ENGLAND, N.W.	Hawes Junction*	28°886	39°5	35°5	44°2	39°9	19	28th	51
	Barrow-in-Furness	30°125	45°2	42°2	48°6	45°4	31	27th	53
	Liverpool	30°172	44°3	41°3	49°2	45°3	33	13th, 27th	59
	Holyhead	30°164	47°4	44°3	51°1	47°7	35	27th	55
8. ENGLAND, S.W.	Pembroke	30°208	48°8	46°2	51°4	48°8	32	28th	56
	Prawle Point	30°239	47°9	44°7	51°5	48°1	29	28th	60
9. IRELAND N.	Malin Head	30°046	45°5	42°4	49°4	45°9	31	27th	55
	Donaghadee	30°120	44°3	40°6	50°5	45°6	31	17th	58
	Mullaghmore	30°104	46°6	43°4	51°1	47°3	33	27th	57
	Belmullet	30°120	46°8	44°2	50°4	47°3	33	27th	55
10. IRELAND, S.	Parsonstown	30°164	43°9	39°6	50°7	45°2	28	28th	57
	Valencia	30°184	49°2	44°9	52°5	48°7	33	27th	57
	Roche's Point	30°195	48°1	44°4	51°9	48°2	30	28th	55
CHANNEL ISLANDS	Scilly (St. Mary's)	30°211	50°7	47°8	52°7	50°3	36	28th	57
	Jersey	30°253	48°5	45°1	52°4	48°8	34	29th	59

* Hawes Junction is 1,135 feet above Mean Sea Level and the barometrical

SUMMARY OF OBSERVATIONS, NOVEMBER 1889.

xliii

REPORTING STATIONS in the BRITISH ISLANDS during the Month of NOVEMBER 1889.

Thunderstorms, and Gales are counted irrespective of the Hours at which they occurred.

beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER.							WIND.								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	Rain.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	No. of Observations of								
													North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calms.
ins. 0.261	88	8.6	ins. 2.83	in. 0.53	9th	20	2	0	0	0	21	0	3	1	1	1	2	4	8	2	7
*252	90	6.2	2.36	0.75	1st	19	2	1	0	4	10	3	1	0	0	1	5	6	3	11	5
*293	96	8.9	4.11	0.75	1st	27	3	1	0	0	22	10	2	0	0	0	0	19	2	5	2
*237	84	6.7	1.47	0.28	2nd	13	2	0	0	3	14	1	1	0	1	1	0	5	11	1	10
*220	85	5.8	1.32	0.24	24th	13	3	0	0	1	5	6	1	0	0	1	7	10	7	3	1
*254	87	6.4	0.57	0.17	3rd	6	1	0	0	3	10	1	0	0	1	2	5	3	14	2	3
*245	87	7.7	0.93	0.26	14th	9	2	0	0	0	12	1	0	0	0	0	7	10	9	3	1
*248	93	7.5	0.73	0.19	14th	13	1	0	0	5	18	0	3	0	1	5	8	2	9	2	0
*257	88	7.5	0.70	0.35	27th	13	2	0	0	2	16	3	1	0	1	2	8	7	8	2	1
*259	91	5.4	1.31	0.31	28th	16	1	4	0	10	7	1	0	1	2	2	2	8	9	5	1
*252	93	7.6	0.92	0.35	3rd	8	2	0	0	2	20	0	1	1	2	0	5	5	5	3	8
*248	93	8.2	0.66	0.18	24th	11	2	1	0	1	17	3	0	1	4	5	4	3	9	3	1
*248	90	7.3	0.95	0.43	3rd	8	0	0	0	8	19	0	0	0	2	5	6	4	6	5	2
*257	92	7.8	0.75	0.24	24th	9	2	0	1	6	21	2	0	1	3	3	4	5	6	5	3
*272	92	7.4	1.16	0.51	24th	7	1	0	0	1	9	4	3	1	3	4	3	4	4	8	0
*306	93	7.2	1.19	0.51	24th	7	0	0	0	0	10	3	3	5	7	1	1	3	6	4	0
*282	90	7.7	2.39	0.94	22nd	14	0	0	0	0	16	4	0	4	2	4	6	3	7	3	1
*237	97	8.9	2.39	0.72	1st	15	1	1	0	0	26	0	1	0	1	3	6	12	4	2	1
*266	89	8.2	1.80	0.26	2nd	19	0	0	0	0	19	2	2	2	6	5	2	2	0	11	0
*255	88	8.2	2.45	0.69	22nd	17	1	2	1	3	20	1	2	1	0	11	2	2	10	2	0
*295	91	8.3	2.93	0.62	24th	17	0	2	0	0	14	6	2	1	0	1	7	3	4	7	5
*315	91	7.4	2.48	0.59	2nd	20	1	2	0	0	7	7	4	0	3	5	5	3	5	5	0
*303	92	7.6	1.23	0.37	24th	13	1	0	0	0	14	3	3	3	6	1	4	3	4	6	0
*274	90	7.4	1.30	0.35	30th	19	0	2	0	3	17	6	1	0	0	2	14	3	3	7	0
*279	96	6.4	1.69	0.50	1st	18	2	0	0	0	7	2	0	1	0	1	5	9	10	4	0
*276	88	7.1	2.12	0.43	26th	21	2	4	0	3	10	8	1	0	1	3	8	6	4	7	0
*303	95	8.0	3.26	0.41	24th	25	1	1	0	2	20	4	1	0	2	4	5	10	2	5	0
*260	91	8.1	1.49	0.52	24th	18	1	0	0	0	17	0	0	0	0	2	1	4	0	0	23
*312	90	8.2	4.18	0.63	30th	21	0	2	0	1	19	5	1	2	4	7	4	2	4	4	2
*301	90	7.4	3.23	0.75	24th	23	0	1	0	0	16	5	4	0	0	6	6	3	5	6	0
*316	86	8.8	3.41	1.01	24th	20	0	1	0	0	21	5	6	1	3	6	3	2	4	4	1
*292	86	8.2	2.49	0.52	24th	16	2	1	0	2	20	3	2	1	2	6	3	0	4	2	0

observations at this station are not reduced for altitude.

TABLE XXII.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT, during the Month of NOVEMBER 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Per-centages of possible Duration.
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	24'1	10
LAIRG	36'0	48'8	42'4	25	17th	57	7th, 20th	18	2'05	0'45	8th	—	—
GLENCARRON	38'6	47'8	43'2	26	26th, 27th	58	22nd	23	9'16	3'47	1st	14'8	6
FORT AUGUSTUS	38'5	49'0	43'8	23	27th	57	9th, 10th	16	2'76	1'01	1st	19'9	8
ABERDEEN	*	1*	*	*	*	*	*	*	*	*	*	70'9	30
BRAEMAR	34'6	47'1	40'9	25	26th, 27th	60	9th	12	2'33	1'33	1st	49'5	21
OCHTERTYRE	36'2	49'3	42'8	25	16th	63	10th	16	1'43	0'40	22nd	—	—
MARCHMONT	36'8	47'9	42'4	26	28th	59	10th	11	0'77	0'15	1st	46'5	19
ALNWICK CASTLE	38'2	48'3	43'3	30	25th, 26th	59	10th	8	0'50	0'12	2nd, 14th	—	—
DURHAM	36'6	47'8	42'2	28	26th, 27th, 28th	59	10th	13	0'90	0'29	14th	53'7	22
SCARBOROUGH	38'9	48'0	43'5	31	26th, 27th	59	9th	14	2'20	0'98	27th	44'1	19
YORK	*	*	*	*	*	*	*	*	*	*	*	41'6	17
HILLINGTON	37'7	48'6	43'2	28	30th	57	7th, 10th	9	1'34	0'43	24th	67'7	27
GELDESTON	38'2	49'3	43'8	28	27th	59	7th, 8th	13	1'19	0'25	28th	67'1	26
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	64'5	25
ROTHAMSTED	37'5	48'8	43'2	26	28th	60	7th	7	1'12	0'45	24th	—	—
INGATESTONE	38'7	48'4	43'6	26	28th	59	8th	10	1'24	0'42	3rd	—	—
BAWTRY	38'1	49'4	43'8	27	28th	63	7th	12	0'41	0'08	2nd, 14th	44'2	17
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	48'0	19
CHEADLE	35'4	47'3	42'9	24	28th	59	7th	13	1'25	0'40	24th	—	—
CHURCHSTOCKE	37'3	49'7	43'5	26	28th	60	8th	11	1'22	0'29	22nd	51'7	20
HEREFORD	39'7	50'0	44'9	27	28th	62	8th	8	0'83	0'27	22nd	—	—
CIRENCESTER	37'8	48'7	43'3	25	29th	58	8th	8	1'58	0'54	24th	45'9	18
OXFORD	*	*	*	*	*	*	*	*	*	*	*	44'7	17
LONDON	*	*	*	*	*	*	*	*	*	*	*	27'1	10
STRATHFIELD TURGIS	39'1	49'7	44'4	26	29th	59	15th	6	0'84	0'36	24th	—	—
HASTINGS	42'1	50'0	46'1	30	27th, 28th	57	4th, 8th, 15th	11	1'23	0'41	24th	57'0	22
SOUTHAMPTON	41'1	51'5	46'3	28	28th	59	15th	6	1'51	0'66	24th	42'7	16
STOWELL	41'1	49'7	45'4	27	28th	57	15th	6	1'38	0'33	24th	27'9	11
LAUDALE	41'7	51'1	46'4	29	27th	59	7th	24	6'32	0'98	24th	—	—
GLASGOW	40'1	48'3	44'2	28	26th, 27th	55	7th	13	2'43	1'06	22nd	35'5	15
GLENLEE	37'4	48'8	43'1	20	28th	58	9th	21	4'26	1'25	1st	—	—
DOUGLAS	41'2	50'6	44'9	30	17th, 27th, 28th	56	15th	12	2'73	0'62	24th	53'0	21
NEWTON REIGNY	36'2	47'9	42'1	24	28th	58	7th	14	1'44	0'43	1st	56'7	24
STONYHURST	39'6	47'5	43'6	27	28th	55	7th	17	2'60	0'43	14th	38'6	15
BLACKPOOL	40'8	49'5	45'2	31	27th	57	22nd	17	1'54	0'35	14th	42'5	17
MANCHESTER	39'6	48'4	44'0	28	28th	58	7th, 10th	19	1'91	0'38	14th	—	—
LLANDUDNO	42'7	51'8	47'3	34	26th, 27th	62	22nd	12	1'39	0'77	22nd	42'2	17
LLANDOVERY	37'9	50'2	44'1	13	27th	60	8th	16	2'52	0'54	24th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	34'1	13
ARLINGTON	41'5	49'4	45'5	27	29th	57	17th	18	3'54	1'00	24th	—	—
CULLOMPTON	41'3	51'3	46'3	25	29th	59	8th	13	1'83	0'63	2nd	32'2	12
FALMOUTH	46'0	52'6	49'3	32	27th	57	7th, 16th, 22nd	19	3'93	0'96	24th	39'9	15
PLYMOUTH	43'9	52'4	48'2	30	28th, 29th	57	3rd, 8th, 22nd	12	2'28	0'83	2nd	33'6	13
JERSEY	*	*	*	*	*	*	*	*	*	*	*	46'7	17
LONDONDERRY	41'2	49'9	45'6	31	26th, 27th	56	7th	13	2'16	0'47	25th	—	—
MARKREE CASTLE	39'6	49'8	44'7	29	17th, 29th	56	7th, 8th	20	2'54	0'56	1st	35'1	14
BROCKBOROUGH	38'8	48'9	43'9	23	28th	55	7th	16	2'30	0'42	26th	—	—
ARMAGH	40'1	49'8	45'0	26	27th	56	7th	13	1'55	0'30	24th	46'9	19
EDGEWORTHSTOWN	38'6	49'3	44'0	23	28th	57	19th	24	2'05	0'54	24th	—	—
DUBLIN	41'7	51'1	46'4	30	28th	60	7th	9	0'93	0'36	22nd	71'5	28
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	45'0	18
KILKENNY CASTLE	39'6	50'6	45'1	25	29th, 30th	57	7th	14	1'86	0'48	24th	—	—
WATERFORD	41'2	51'1	46'2	24	29th	56	8th	15	1'92	0'49	24th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	41'9	16
KILLARNEY	42'5	52'4	47'5	26	27th, 28th	59	15th	19	3'59	0'61	21st	—	—
FOYNES	43'4	51'4	47'4	32	27th	57	7th	19	2'22	0'64	24th	—	—

* For information see Table XXI.

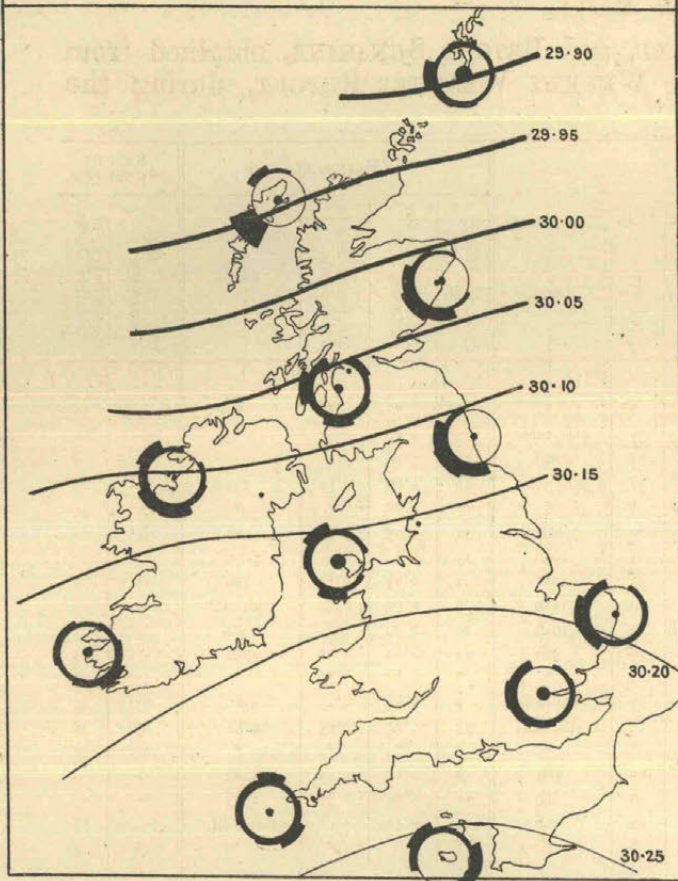
† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Thurcaston.

MONTHLY WEATHER CHART, NOVEMBER, 1889.

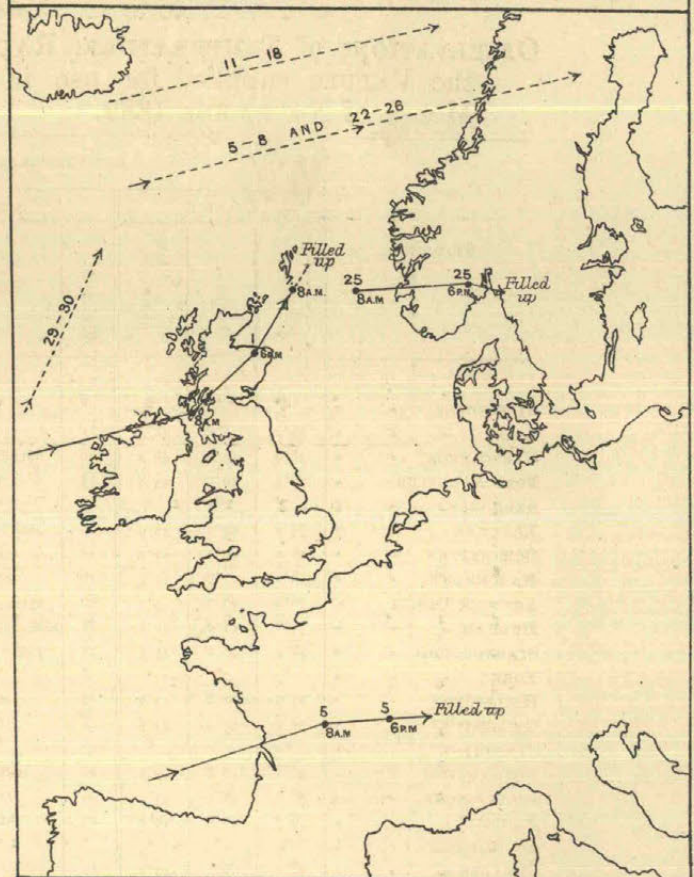
Monthly Summary

Plate XI.

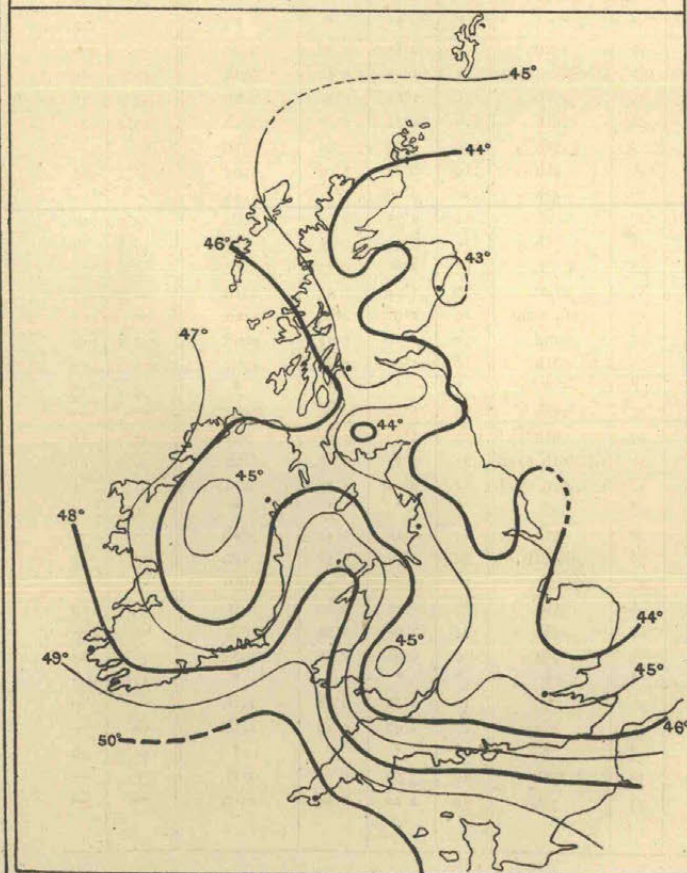
1. BAROMETER AND WIND.



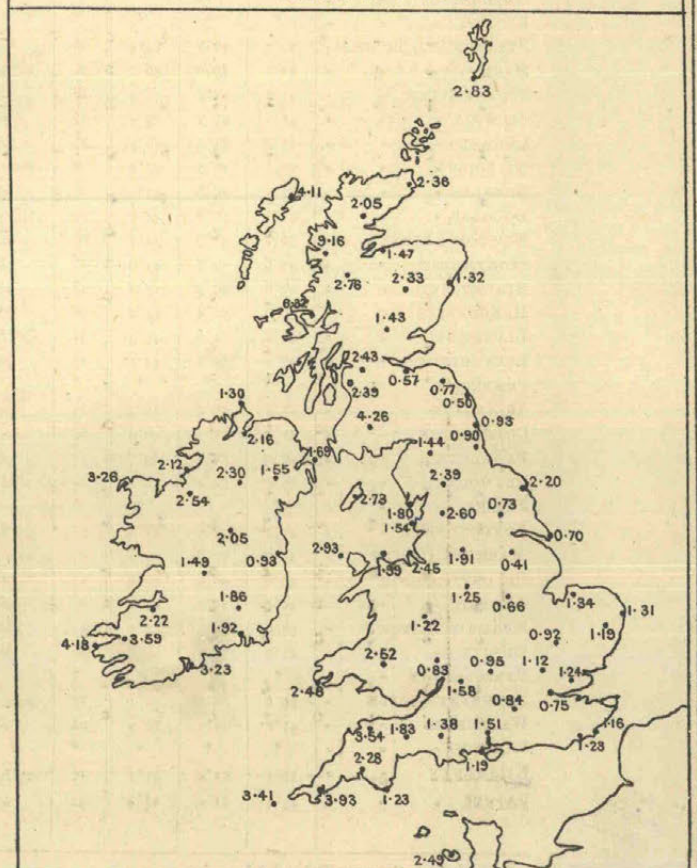
2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE.



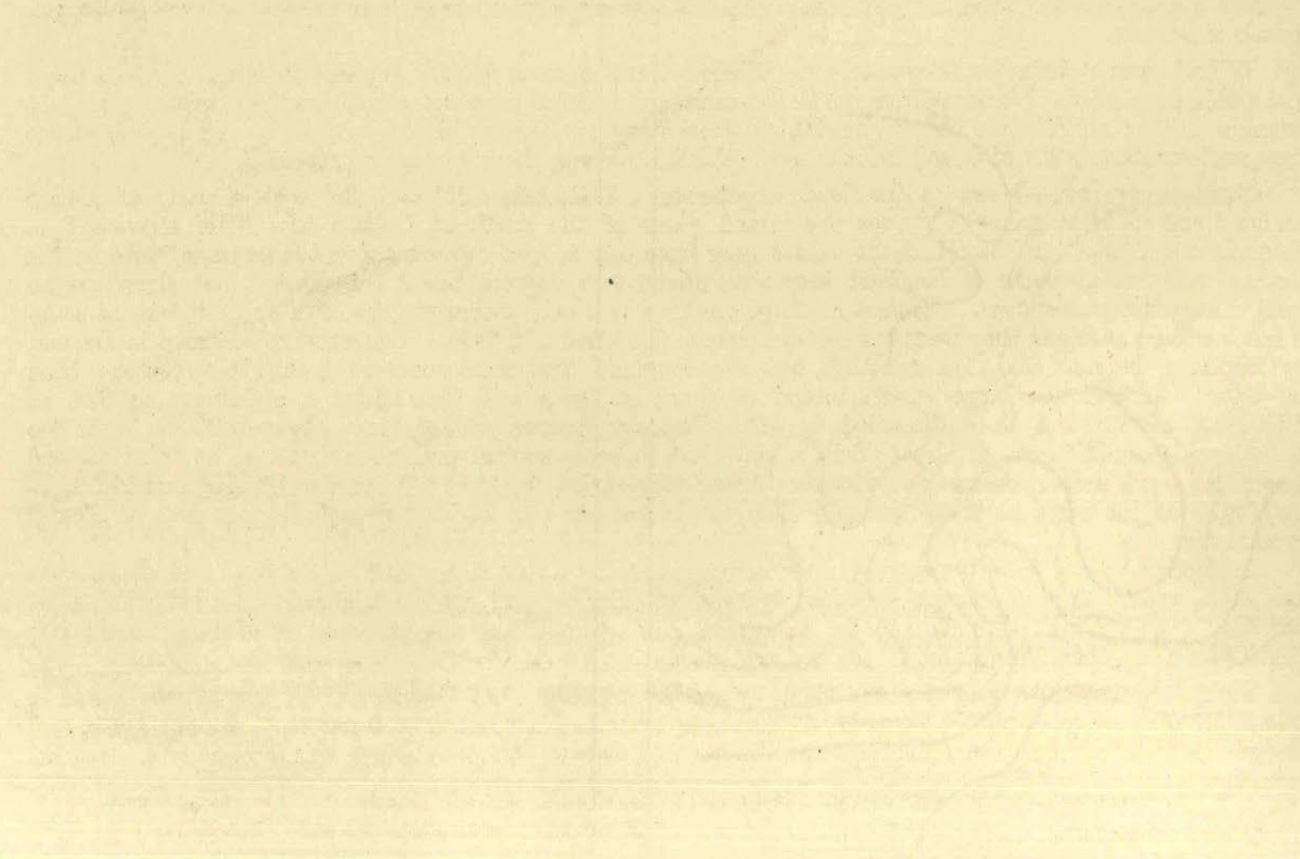
4. RAINFALL.



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SUMMARY of the OBSERVATIONS made at the STATIONS included
in the DAILY and WEEKLY WEATHER REPORTS, for the
CALENDAR MONTH,

DECEMBER 1889.

(Issued as a Supplement to the Weekly Weather Report, 1889.)

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON; R. H. SCOTT, F.R.S., SECRETARY.
PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; ADAM AND CHARLES BLACK, 6, NORTH
BRIDGE, EDINBURGH; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

General Summary.—The month of December was cloudy, changeable, and unsettled, but no gale of any general severity was experienced. In the eastern and southern parts of England the weather was in fact exceptionally quiet. Pressure was above the average in all places. Temperature was in excess of the normal over Scotland, but below it over the greater part of England. Rainfall was less than the average in all but the extreme western and northern districts. The amount of bright sunshine was generally small.

Pressure.—*Mean for the month at 8 a.m.* varied from a little below 29·8 ins. in the Shetlands and Hebrides to a little above 30·2 ins. over the greater part of the English Channel. The general distribution was of a fairly normal character, but the values were everywhere in excess of the average, the difference varying from about a tenth of an inch on our extreme north and north-west coasts to rather more than two tenths of an inch in the south and east of England. The mean gradient was therefore rather steeper than usual. *Highest* values, 30·5 ins. to 30·7 ins. or a little above, were recorded generally on the 5th, but pressure was almost equally high (30·3 ins. to 30·6 ins.) again on the 27th. *Lowest* values, which ranged from about 28·6 ins. in the extreme north to about 29·4 ins. in the south, were registered in the course of the 10th. *Range* was large (nearly 2 inches) on our extreme north and north-west coasts, but moderate duration elsewhere.

Depressions.—The only well-defined depression which advanced directly over the United Kingdom was a small and shallow system which moved eastwards across the south of England on the 7th. During the greater part of the month, however, large disturbances travelled north-eastwards outside our extreme north-western and northern coasts; and in many instances the main systems were accompanied or followed by "V-shaped" secondaries, which moved eastwards across our Islands.

Anticyclones.—Between the 1st and the 5th a large anticyclone of considerable height extended over the kingdom from northern Europe, while at the close of the month another large area spread over us from the eastward. The central portion of the system was in each case at a considerable distance from our Islands.

Wind was chiefly South-westerly or Westerly, but at some of the extreme southern stations there was a fair proportion of breezes from the South-eastward. Gales were somewhat frequent in the west and extreme north; at Valencia there were 10, at Stornoway 12, and at Mullaghmore 17. In several of the more eastern parts both of Great Britain and Ireland, however, there were none reported.

Temperature.—*Mean at Sea Level* ranged from a little below 37° over the eastern parts of central England and a little below 41° over the inland parts of the north of Ireland to a little above 47° at Valencia and Scilly. In Scotland the values were from one to two degrees above the average,* and in the eastern and central parts of England they were about two degrees below the normal, but elsewhere no great divergence was shown. *Highest* readings occurred as a rule either on the 17th or 18th, but at some of our southern stations they were registered between the 22nd and 24th. *Lowest* were recorded in Ireland and Scotland between the 11th and 13th, but over England they were observed mainly between the 28th and 30th. *Range* was large at the inland stations; at Lairg and Cirencester it amounted to 37°, at Hillington to 38°, and at Rothamsted to 41°. *Vapour Tension* ranged from about 0·20 in. over the central and eastern parts of Great Britain and 0·24 in. over central Ireland to 0·28 in. at Valencia and Scilly and 0·29 in. at Belmullet. *Relative Humidity* varied from 84 per cent. at Shields and Mullaghmore and 85 per cent. at Aberdeen and Scilly to 96 per cent. at Stornoway and 98 per cent. at Hawes Junction.

Rainfall varied from between an inch and an inch and a half in the east of England and the south-east of Scotland to 6·7 ins. at Valencia, 6·8 ins. at Glenlee, 9·6 ins. at Glencarron, and 11·7 ins. at Laudale. The values were slightly in excess of the average* in the extreme west and north, but considerably less than the normal in the east and south.

Bright Sunshine was upon the whole extremely deficient. At Glencarron the amount was equal to only 1 per cent. of the possible duration, at Fort Augustus and in London to 6 per cent., and at York and Stonyhurst to 9 per cent. At Hastings and Falmouth, however, the per-centage was 25, and at Dublin 26.

* The averages employed are—*Pressure* and *Temperature* for the 20 years, 1861–80; *Rainfall* for the 20 years, 1866–85.

TABLE XXIII.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC
 Observations are made at 8 a.m. daily, but the numbers of days of Rain, Snow, Hail,
 (The Stations are grouped in Districts, and then arranged in order of

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m.	AIR TEMPERATURE.							
			At 8 a.m.	Means of			Absolute Extremes.			
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29°799	42°8	35°2	45°8	42°0	26	12th	51	16th, 17th
	Wick	29°860	40°7	34°9	44°6	39°8	25	12th, 13th, 22nd, 30th	55	16th
	Stornoway	29°792	42°5	37°8	46°0	41°9	26	12th	53	16th
1. SCOTLAND, E.	Nairn	29°901	40°0	33°1	46°0	39°6	24	5th, 6th, 12th, 13th	55	16th, 17th
	Aberdeen	29°946	38°7	34°2	44°1	39°2	24	13th	55	17th
	Leith	29°988	40°6	34°6	46°2	40°4	27	4th, 12th	55	16th, 17th
2. ENGLAND, N.E.	Shields	30°053	39°8	34°5	44°1	39°3	27	29th	55	17th
	York	30°109	36°7	32°0	42°6	37°3	25	14th	54	17th, 18th
	Spurn Head	30°110	38°9	35°3	42°5	38°9	25	29th	52	18th
3. ENGLAND, E.	Yarmouth	30°161	37°6	33°4	41°5	37°4	26	29th, 30th	52	17th, 22nd
	Cambridge	30°184	35°6	29°9	42°8	36°4	20	29th, 30th, 31st	55	22nd
4. MIDLAND COUNTIES	Loughborough	30°154	35°8	31°1	43°3	37°2	20	29th, 30th	54	17th, 18th
	Oxford	30°189	35°7	31°3	42°7	37°0	19	30th	54	17th
5. ENGLAND, S.	London	30°193	36°9	32°6	43°6	38°1	23	4th	55	17th
	Dungeness	30°185	38°8	33°5	43°6	38°6	21	13th, 30th	54	23rd
	Hurst Castle	30°200	40°8	36°0	45°5	40°8	28	12th	53	23rd, 24th, 25th
6. SCOTLAND, W.	Ardrossan	29°993	42°1	37°7	46°4	42°1	27	28th, 29th	52	8th, 9th, 17th
7. ENGLAND, N.W.	Hawes Junction*	28°822	35°2	30°3	39°1	34°7	20	29th	48	16th, 17th, 23rd, 24th, 9th
	Barrow-in-Furness	30°068	39°4	35°8	43°3	39°6	29	28th	56	9th
	Liverpool	30°112	39°2	36°1	44°4	40°3	27	29th	54	17th
	Holyhead	30°096	43°3	40°0	47°1	43°6	31	4th, 5th, 28th	53	9th
8. ENGLAND, S.W.	Pembroke	30°145	44°8	41°4	47°7	44°6	32	6th, 28th, 29th	52	16th
	Prawle Point	30°194	43°0	38°9	47°3	43°1	30	29th	52	14th, 18th
9. IRELAND, N.	Malin Head	29°923	42°7	39°1	46°2	42°7	32	13th	52	16th
	Donaghadee	30°036	42°0	37°5	46°5	42°0	30	12th	55	17th
	Mullaghmore	29°970	44°8	41°5	48°6	45°1	35	21st	54	17th, 23rd
	Belmullet	29°975	45°7	42°3	49°2	45°8	36	11th	53	9th, 17th
10. IRELAND, S.	Parsonstown	30°054	41°0	36°6	47°5	42°1	26	5th	55	17th
	Valencia	30°075	47°9	43°2	51°0	47°1	34	12th	54	9th, 15th, 16th, 17th, 23rd, 9th
	Roche's Point	30°109	45°8	41°6	49°5	45°6	30	12th	55	9th
CHANNEL ISLANDS	Scilly (St. Mary's)	30°169	47°5	43°9	50°1	47°0	37	29th	54	25th
	Jersey (St. Aubin's)	30°232	42°2	38°1	47°1	42°6	30	3rd, 4th	54	23rd, 24th, 25th

* Hawes Junction is 1,135 feet above Mean Sea Level, and the

SUMMARY OF OBSERVATIONS, DECEMBER 1889.

xlvii

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of DECEMBER 1889.

Thunderstorms, and Gales are counted irrespective of the hour at which they occurred.

Latitude, beginning in each case with the Station lying furthest North.)

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.			WEATHER.							WIND.								
			Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Days of							No. of Observations of								
						Rain.	Show.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calm.
ins. 0°240	% 88	9°3	ins. 5°45	in. 0°85	6th	26	2	0	0	0	25	3	2	0	0	5	7	7	6	1	3
220	87	5°6	2°36	0°40	1st	25	1	1	0	9	9	7	1	0	0	0	9	11	5	4	1
261	96	8°7	5°65	0°52	6th, 8th	26	2	0	0	0	21	12	3	0	0	0	1	20	5	2	0
215	87	5°8	1°22	0°29	19th	15	1	0	0	7	9	0	0	0	0	0	1	10	11	0	9
198	85	6°3	2°29	0°53	24th	15	1	1	0	2	7	6	0	0	0	2	14	7	6	2	0
217	86	6°5	1°03	0°31	19th	12	1	0	0	1	8	0	2	1	2	2	1	7	10	4	2
205	84	8°2	1°40	0°49	6th	12	1	1	0	0	15	1	1	0	1	1	5	11	10	0	2
202	93	7°5	1°26	0°57	6th	15	2	0	0	6	20	0	2	0	3	5	13	1	3	3	1
210	89	7°3	0°96	0°32	8th	17	3	0	0	0	17	2	1	1	2	3	10	8	5	1	0
205	91	7°0	1°06	0°26	8th	20	2	0	0	3	13	0	0	0	3	3	3	8	8	5	1
195	94	8°1	1°17	0°40	21st	18	2	0	0	3	22	0	1	0	2	1	9	7	2	0	9
197	94	7°8	1°63	0°51	21st	13	4	0	0	2	17	2	0	0	7	4	4	7	4	4	1
192	92	6°8	1°21	0°23	6th, 21st	15	2	0	0	9	17	0	2	2	1	3	5	9	5	0	4
199	91	8°3	1°50	0°25	21st, 22nd	18	2	0	0	5	23	1	0	1	5	3	5	8	4	2	3
216	92	8°2	1°65	0°39	7th	15	0	0	0	0	17	5	7	1	3	4	2	5	6	2	1
233	92	7°4	1°85	0°28	22nd	18	1	0	0	0	12	5	3	6	4	2	1	5	7	2	1
242	90	7°6	3°62	0°47	6th	22	1	0	0	3	19	5	1	6	3	3	6	6	5	1	0
202	98	9°1	4°22	0°68	17th	18	6	0	0	0	26	0	1	3	4	4	4	12	1	0	2
218	91	7°6	3°78	0°64	19th	19	0	0	0	1	17	1	1	5	5	8	2	5	2	3	0
207	86	7°9	2°70	0°40	19th	17	0	1	0	5	20	0	1	0	2	9	4	9	4	2	0
244	87	7°5	4°13	0°86	19th	21	0	0	0	0	14	5	1	1	1	5	5	9	6	2	0
267	90	7°7	2°58	0°57	19th	21	0	0	0	0	13	8	1	2	3	4	3	9	7	2	0
249	90	6°8	2°93	0°79	21st	19	1	2	0	0	14	2	4	2	5	0	3	6	9	1	1
241	88	7°1	4°01	0°75	19th	23	1	2	0	3	18	3	2	0	0	3	14	7	2	3	0
252	94	5°6	2°11	0°54	6th	19	0	0	0	1	2	0	1	1	0	1	4	16	7	1	0
249	84	7°0	4°62	0°76	19th	22	0	4	1	5	10	17	1	1	1	3	8	13	2	2	0
289	94	7°6	5°53	0°78	6th	26	0	0	1	4	21	5	0	1	2	1	7	10	5	5	0
229	90	7°8	3°14	0°52	28th	20	0	0	0	1	16	0	0	0	0	5	0	10	0	0	16
284	86	8°5	6°68	0°76	23rd	26	0	1	0	0	19	10	3	0	2	6	8	3	5	3	1
271	88	7°4	6°56	1°05	19th	23	0	0	0	0	14	6	2	0	0	2	7	7	9	4	0
278	85	8°2	2°21	0°45	21st	18	0	2	0	0	17	7	2	2	2	3	7	6	5	4	0
233	87	7°0	3°27	0°45	10th	21	1	3	0	2	16	2	2	0	7	4	2	4	5	7	0

barometric observations at this station are not corrected for altitude.

TABLE XXIV.

OBSERVATIONS of TEMPERATURE, RAINFALL, and BRIGHT SUNSHINE, obtained from the VALUES supplied for use in the WEEKLY WEATHER REPORT during the Month of DECEMBER 1889.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				No. of Rainy Days.	Total Fall in the Month.	Maximum Fall in One Day.	Date.	No. of Hours recorded.	Percentage of possible Duration
	Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	22'5	12
LAIRG	31'9	44'2	38'1	16	12th	53	17th	19	2'62	0'46	19th	—	—
GLENCARRON	34'5	45'4	40'0	20	12th	54	24th	24	9'64	1'59	8th	2'8	1
FORT AUGUSTUS	33'9	45'6	39'8	23	12th	54	17th	19	4'10	0'64	18th	12'9	6
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	24'1	12
BRAEMAR	31'3	42'7	37'0	19	12th	52	17th	13	1'86	0'51	19th	21'3	11
OCHTERTYRE	31'7	44'0	37'9	21	11th	56	16th, 17th	19	2'15	0'55	23rd	—	—
MARCHMONT	31'5	42'5	37'0	23	29th	53	9th	17	1'50	0'34	6th	31'8	15
ALNWICK CASTLE	34'1	42'6	38'4	26	11th	52	9th, 17th	12	1'90	0'58	6th	—	—
DURHAM	31'8	42'3	37'1	25	4th, 29th	54	18th	12	1'19	0'54	6th	47'1	22
SCARBOROUGH	33'0	41'2	37'1	25	29th	52	17th, 18th	16	1'40	0'33	6th	†38'2	17
YORK	*	*	*	*	*	*	*	*	*	*	*	20'7	9
HILLINGTON	31'2	41'0	36'1	19	29th	57	18th	20	1'56	0'36	8th	33'9	15
GELDESTON	33'2	42'2	37'7	25	2nd, 29th	53	17th	17	1'11	0'28	21st	39'3	17
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	34'8	15
ROTHAMSTED	30'6	41'6	36'1	12	2nd	53	17th	19	1'36	0'28	21st	—	—
INGATESTONE	31'9	41'9	36'9	20	29th	52	17th, 22nd, 24th	17	1'41	0'28	8th	—	—
BAWTRY	30'3	42'6	36'5	21	28th	55	17th	12	1'14	0'43	6th	†24'8	11
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†33'7	15
CHEADLE	32'0	41'2	36'6	21	29th	52	17th	17	2'13	0'55	21st	—	—
CHURCHSTOKE	32'1	43'7	37'9	20	29th	54	17th	14	1'86	0'34	23rd	43'4	19
HEREFORD	31'8	43'7	37'8	21	29th	54	16th, 17th	16	1'22	0'31	6th	—	—
CIRENCESTER	29'6	42'5	36'1	15	29th	52	24th	14	1'71	0'37	6th	33'4	14
OXFORD	*	*	*	*	*	*	*	*	*	*	*	35'2	15
LONDON	*	*	*	*	*	*	*	*	*	*	*	13'4	6
STRATHFIELD TURGISSE	29'5	42'8	36'2	18	4th	54	17th	16	1'58	0'25	22nd	—	—
HASTINGS	35'6	43'2	39'4	27	29th	52	21st, 22nd	19	1'72	0'37	21st	59'0	25
SOUTHAMPTON	34'1	44'2	39'2	25	4th, 12th	53	17th, 22nd, 24th	19	2'05	0'39	22nd, 23rd	37'9	16
STOWELL	32'2	43'3	37'8	24	29th	54	24th	15	2'31	0'43	6th	31'2	13
LAUDALE	37'9	47'4	42'7	31	12th	56	18th	27	11'74	1'44	12th	—	—
GLASGOW	36'4	44'4	40'4	28	28th	52	17th, 18th	21	2'99	0'68	19th	22'5	11
GLASGOW	32'7	43'0	38'3	21	4th	53	18th	23	6'81	1'19	23rd	—	—
DOUGLAS	38'1	45'9	42'5	29	12th, 14th	52	9th, 17th	22	3'69	0'48	6th	45'0	20
NEWTON REIGNY	31'4	42'0	36'7	24	6th, 14th	52	9th	20	2'81	0'86	19th	27'1	13
STONYHURST	33'1	41'6	37'4	26	14th, 28th, 29th, 30th.	51	18th	19	4'48	0'90	8th	20'1	9
BLACKPOOL	34'4	43'5	39'0	26	14th, 29th	50	9th, 17th, 23rd	20	3'40	0'59	19th	21'9	10
MANCHESTER	33'5	41'8	37'7	25	29th	51	9th, 17th, 18th	19	3'17	0'55	21st	—	—
LLANDUDNO	38'4	47'1	42'8	29	4th, 28th	56	19th	13	2'98	0'67	19th	†?	?
LLANDOVERY	30'7	44'0	37'4	20	11th, 28th	53	23rd	18	3'64	0'55	21st	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	43'5	19
ARLINGTON	34'7	44'7	39'7	23	29th	52	23rd	17	4'08	1'28	21st	—	—
CULLOMPTON	31'6	44'8	38'2	20	29th	53	16th, 17th, 21st	18	2'31	0'43	21st	36'5	15
FALMOUTH	39'5	47'8	43'7	29	28th	53	22nd, 24th	20	3'30	0'90	21st	60'5	25
PLYMOUTH	36'1	47'9	42'0	29	29th	53	21st, 22nd, 23rd	16	3'31	0'63	21st	54'4	22
JERSEY	*	*	*	*	*	*	*	*	*	*	*	†59'6	†24
LONDONDERRY	37'5	46'7	42'1	30	5th	54	18th	21	3'89	0'58	23rd	—	—
MARKREE CASTLE	36'3	46'8	41'6	26	12th, 14th	53	9th, 17th, 18th	22	4'98	0'58	23rd	31'1	14
BROOKEBOROUGH	34'5	45'5	40'0	24	14th	52	17th, 18th	20	4'34	0'54	28th	—	—
ARMAGH	36'9	46'9	41'9	30	11th, 12th	54	17th, 18th	15	2'27	0'43	6th	38'0	17
EDGEWORTHSTOWN	34'4	46'8	40'6	25	5th	54	18th	21	3'29	0'70	28th	—	—
DUBLIN	38'8	48'7	43'8	31	6th, 12th, 14th	57	17th	15	1'55	0'27	19th	59'7	26
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	37'9	17
KILKENNY CASTLE	35'4	46'9	41'2	22	12th	55	17th	19	3'48	0'92	28th	—	—
WATERFORD	35'9	48'0	43'5	23	12th	55	9th	20	4'40	0'84	28th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	36'1	15
KILLARNEY	39'6	50'7	45'2	29	12th	56	24th	24	5'90	0'92	19th	—	—
FOYNES	39'9	49'3	44'6	31	5th, 13th	55	17th	20	4'42	0'74	19th	—	—

* For information see Table XXIII.

† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, and those entered to Loughborough at Thurstaston.

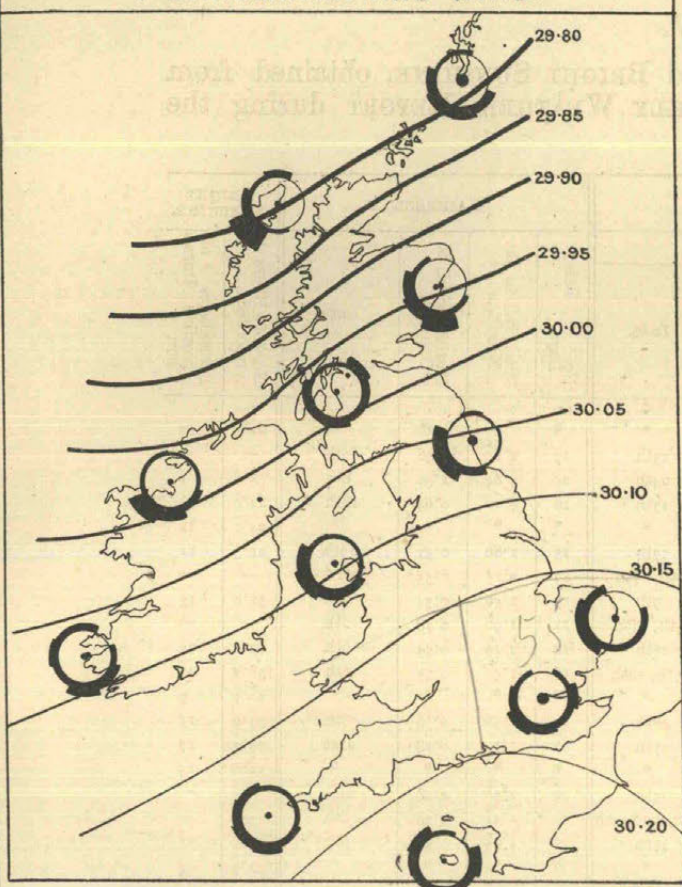
‡ Instrument out of order part of the time.

MONTHLY WEATHER CHART, DECEMBER. 1889.

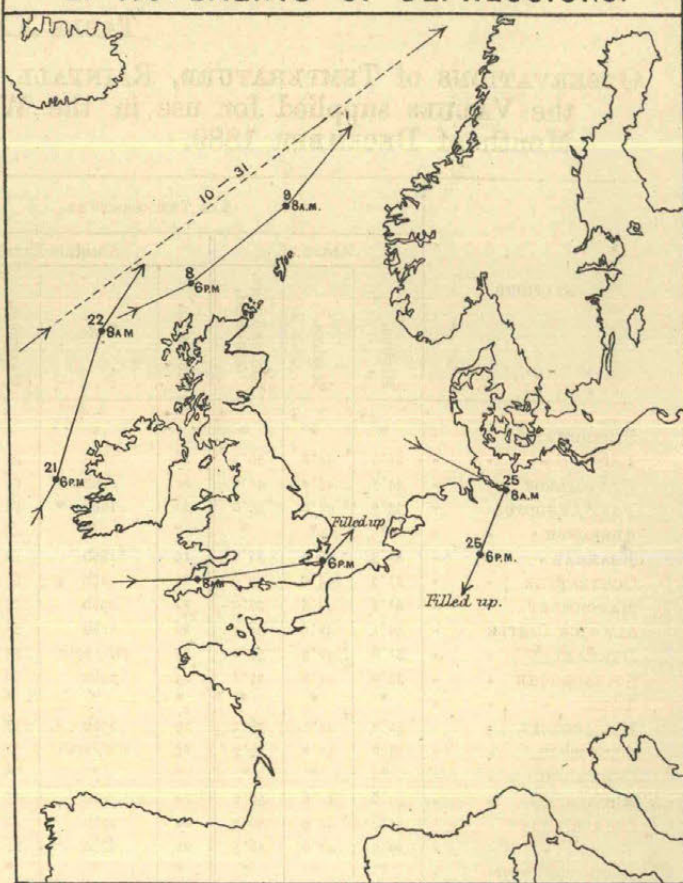
Monthly Summary

Plate XII.

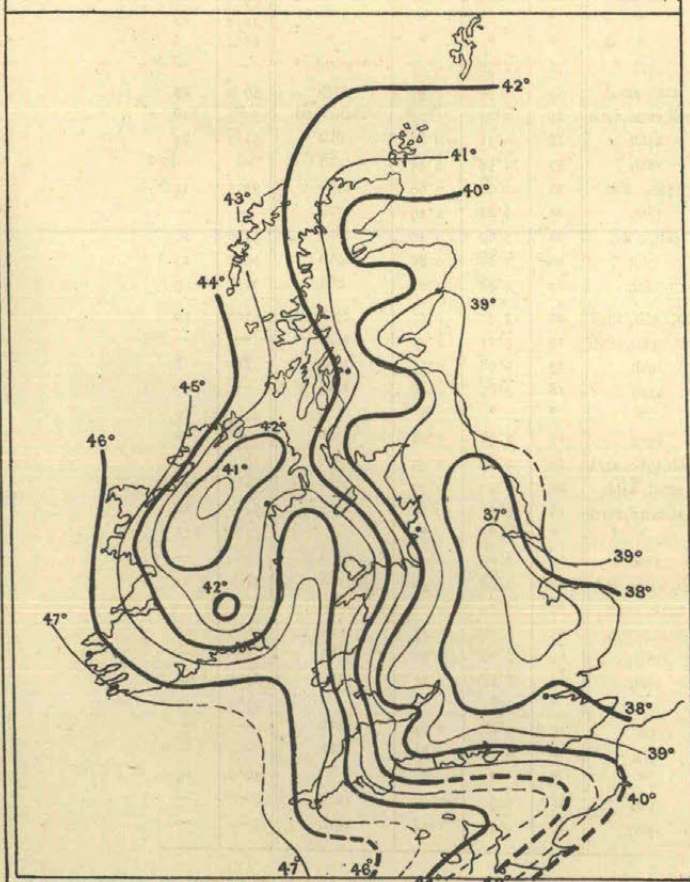
1 BAROMETER AND WIND.



2. MOVEMENTS OF DEPRESSIONS.



3. DISTRIBUTION OF MEAN TEMPERATURE.



4 RAINFALL.

