

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

## JANUARY 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 January was exceedingly mild, rough, and unsettled. Pressure was considerably below the average in the north and north-west, and gradients were steep. Temperature was continuously high, more especially so during the first and concluding weeks of the month. The wind was usually strong from the South-westward (South to West), with frequent gales in most districts; on our western and northern coasts the latter were at times of great severity. Rainfall was heavy in the west and north, but snow was almost entirely absent. Thunderstorms occurred on several occasions in Ireland and Scotland. The amount of bright sunshine was rather in excess of the average.

**Pressure.**—*Mean for the month* varied from a little below 29·4 ins. in the Shetlands and Hebrides to a little above 30·0 ins. in the Channel Islands. The distribution of pressure was of a normal character, but as the values in the extreme north were about 0·25 inch below the average,\* while those in the south exhibited no material departure, the mean gradient was considerably steeper than usual. *Highest* values were recorded on the night of the 29th, when the barometer varied from about 30·1 ins. in the north of Scotland to about 30·5 ins. on our extreme south-west coasts. *Lowest* were recorded over Scotland on the 19th, but over Ireland and England on the 23rd; in the former case the mercury fell to between 28·3 ins. and 28·5 ins., in the latter to between 28·5 ins. and 28·7 ins. *Range* was large in all districts.

**Depressions** were very numerous and often of considerable depth. Their centres travelled as a rule in a north-easterly direction outside our extreme north-western and northern coasts, and were in many cases too distant for their movements to be indicated in Map II. Plate I. On the 23rd, however, a deep system passed eastwards directly across England, while on the 28th two smaller and shallower disturbances pursued a similar course over our southern counties and the Channel.

**Anticyclones.**—These were usually found at a considerable distance to the eastward or southward of the United Kingdom, and it was not until the close of the month that our Islands were visited by any definite high pressure system. After the 29th, however, an anticyclone spread over us from the south-westward.

**Wind** was chiefly South-westerly, and very strong in force, especially on our extreme western and northern coasts. At Malin Head and Roche's Point gales blew on 16 days, at Stornoway and Scilly on 17, at Valencia on 18, and at Mullaghmore on 20. The Southerly gales of the 18th and the South-westerly to Westerly gales of the 25th were very severe in the west and north.

**Temperature.**—*Mean at Sea Level* ranged from a little below 41° in the extreme north of Scotland and east of England, and a little below 42° over central Ireland and all the more northern and eastern parts of Great Britain, to 48° and upwards off the south-west of England. The general distribution was fairly normal, but the values were everywhere in excess of the average, especially over Great Britain; in some parts of eastern and central England the difference from the mean amounted to more than 4°, while in central Scotland it was as much as 5° or 6°. *Highest* values were recorded on varying dates; at Cambridge and Llandudno the thermometer on the 6th or 7th rose to 58°, while at Brookeborough the maximum on the 14th was as high as 59°. *Lowest* was observed between the 1st and 3rd over England, on the 23rd or 24th over Scotland, and on the 29th over the greater part of Ireland. *Range* was somewhat large at several of the inland and northern stations, amounting to 39° at Lairg and Glencarron and to 40° at Cambridge. *Vapour Tension* was somewhat low, ranging as it did from 0·23 inch or less over central Ireland and the eastern parts of Great Britain to 0·30 inch at Pembroke and 0·32 inch at Scilly. *Relative Humidity* varied from 83 at Aberdeen and Shields to 95 at Pembroke, 96 at Stornoway, and 98 at Hawes Junction.

**Rainfall** varied from rather less than 2 inches in some of the eastern and central parts of England to 8·7 ins. at Belmullet, 10·1 ins. at Hawes Junction, 11·5 ins. at Killarney, 15·1 ins. at Laudale, and 16·3 ins. at Glencarron. The values did not differ much from the average\* in the east and south, but were considerably in excess in the west and north, where the rainfall was both frequent and heavy. At each of the stations of Glencarron, Laudale, Stonyhurst, Falmouth, Edgeworthstown, and Valencia there was only one day without rain.

**Bright Sunshine.**—Notwithstanding the generally unsettled character of the weather, the amount of bright sunshine was above rather than below the average. The per-centage of the possible amount of duration exceeded 20 at several of the English stations; at Aberdeen it was as high as 29 and at Dublin 30.

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



TABLE I.—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.						
			At 8 a.m.	Means of			Absolute Extremes.		
				Minima.	Maxima.	Min. and Max. combined.	Minimum.	Date.	Maximum.
0. SCOTLAND, N.	Sumburgh Head	29° 37' 1	42° 4	39° 3	45° 3	42° 3	29	29th	50
	Wick	29° 42' 8	41° 0	35° 7	45° 2	40° 5	25	23rd, 24th	52
	Stornoway	29° 37' 4	42° 4	37° 1	46° 2	41° 7	25	22nd	55
1. SCOTLAND, E.	Nairn	29° 45' 4	41° 9	35° 8	47° 1	41° 5	24	24th	54
	Aberdeen	29° 53' 4	40° 4	36° 4	45° 6	41° 0	21	23rd, 24th	54
	Leith	29° 59° 0	42° 8	36° 2	48° 1	42° 2	27	23rd, 24th	55
2. ENGLAND, N.E.	Shields	29° 68' 3	41° 8	36° 6	47° 8	42° 2	22	3rd	56
	York	29° 77' 9	40° 7	35° 6	47° 9	41° 8	22	3rd	57
	Spurn Head	29° 79' 1	40° 7	36° 3	45° 5	40° 9	26	3rd	53
3. ENGLAND, E.	Yarmouth	29° 88° 0	40° 9	35° 9	45° 6	40° 8	26	2nd	54
	Cambridge	29° 90° 0	40° 6	34° 8	48° 9	41° 9	18	2nd	58
4. MIDLAND COUNTIES	Loughborough	29° 84' 9	40° 6	36° 1	48° 3	42° 2	21	3rd	56
	Oxford	29° 91' 3	41° 1	36° 8	48° 1	42° 5	20	2nd	56
5. ENGLAND, S.	London	29° 92' 8	42° 1	37° 8	49° 5	43° 7	26	1st, 2nd	57
	Dungeness	29° 93' 4	44° 2	39° 3	48° 3	43° 8	30	30th	53
	Hurst Castle	29° 95' 5	46° 4	40° 9	49° 7	45° 3	28	2nd	56
6. SCOTLAND, W.	Ardrossan	29° 60' 8	44° 0	39° 9	47° 3	43° 6	31	23rd, 24th	51
7. ENGLAND, N.W.	Hawes Junction*	28° 48' 6	38° 1	33° 3	45° 3	38° 3	15	4th	50
	Liverpool	29° 77' 9	42° 1	38° 1	48° 5	43° 3	23	3rd	57
	Holyhead	29° 76° 0	44° 4	41° 3	48° 6	45° 0	34	23rd, 28th	52
8. ENGLAND, S.W.	Pembroke	29° 83' 5	46° 3	42° 8	49° 2	46° 0	34	29th	52
	Prawle Point	29° 95' 1	46° 6	42° 3	49° 8	46° 1	33	29th, 30th	53
9. IRELAND, N.	Malin Head	29° 53' 7	42° 4	38° 6	46° 5	42° 6	32	21st	54
	Donaghadee	29° 67' 3	41° 6	37° 5	47° 7	42° 6	32	21st, 23rd	54
	Mullaghmore	29° 61' 8	43° 7	39° 1	48° 5	43° 8	33	21st, 22nd	56
	Belmullet	29° 60° 0	45° 0	39° 5	48° 7	44° 1	31	15th, 25th	56
10. IRELAND, S.	Parsonstown	29° 72' 8	40° 8	35° 5	48° 7	42° 1	26	29th, 30th	56
	Valencia	29° 74' 7	46° 5	40° 4	51° 1	45° 8	30	29th	55
	Roche's Point	29° 79' 4	45° 6	41° 3	50° 2	45° 8	32	29th	54
CHANNEL ISLANDS	Scilly (St. Mary's)	29° 91' 2	48° 8	45° 0	51° 5	48° 3	38	22nd	55
	Jersey	30° 04' 3	47° 3	43° 1	50° 6	46° 9	32	1st	55

\* Hawes Junction is 1,135 feet above mean sea level, and the barometrical observations at this



## SUMMARY OF OBSERVATIONS, JANUARY 1890.

iii

REPORTING STATIONS in the BRITISH ISLANDS during the Month of JANUARY 1890.

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.	%		ins.	ins.																	
0.233	86	8.5	4.17	0.59	8th	25	3	0	0	0	20	6	2	2	0	3	5	6	5	0	5
225	88	6.1	2.01	0.30	24th	21	5	0	1	6	11	11	1	0	1	0	5	6	8	8	2
260	96	9.1	7.16	1.00	8th	29	2	2	0	0	23	17	2	1	0	1	2	11	9	4	1
226	86	7.0	3.14	0.49	9th	20	1	0	0	1	10	6	0	0	0	1	6	11	6	0	7
209	83	6.7	2.75	0.51	9th	18	1	0	0	0	9	13	1	0	0	1	12	9	6	2	0
234	85	6.4	2.91	0.72	19th	21	2	1	0	1	12	2	0	0	0	1	4	12	11	0	3
220	83	7.2	1.70	0.35	9th	18	1	0	0	2	10	10	0	1	1	0	7	16	4	1	1
216	85	5.6	2.10	0.45	21st	19	1	0	0	12	13	0	0	0	1	3	13	6	7	1	0
225	88	5.5	1.74	0.34	22nd	19	1	0	0	4	9	15	1	0	0	1	13	10	5	1	0
232	91	6.1	2.10	0.39	26th	23	2	1	0	6	9	8	1	0	0	2	4	12	8	3	1
230	91	6.5	1.89	0.40	28th	21	1	0	0	3	16	0	1	1	0	2	11	9	2	2	3
223	89	7.0	2.33	0.68	26th	21	1	2	0	4	15	10	0	2	1	4	6	8	8	2	0
230	89	6.4	1.94	0.33	27th	23	0	0	0	9	13	3	0	1	1	1	10	9	6	3	0
238	89	6.4	2.26	0.27	28th	20	0	0	0	10	16	8	1	0	3	2	10	8	6	1	0
265	92	8.4	2.17	0.44	28th	20	0	1	0	0	17	13	2	1	1	0	1	10	12	4	0
269	86	7.4	3.17	0.63	28th	22	0	1	0	0	13	14	1	2	1	1	5	9	9	3	0
261	90	8.0	4.95	0.90	19th	23	0	0	0	1	18	11	1	1	1	1	7	11	6	2	1
225	98	8.6	10.13	1.30	21st	28	4	4	1	1	24	6	1	1	2	1	6	18	2	0	0
224	84	7.4	2.94	0.63	21st	22	2	1	0	2	16	7	0	0	1	8	4	9	8	1	0
254	87	7.6	4.34	1.02	21st	27	0	1	0	0	16	12	1	0	1	1	7	8	9	3	1
295	95	7.9	4.76	0.87	21st	26	0	1	1	0	15	14	0	1	1	1	8	8	7	5	0
292	93	7.0	3.90	0.82	22nd	25	0	4	1	1	10	12	1	0	3	0	7	9	8	3	0
235	87	7.4	3.94	0.40	14th, 19th	26	0	3	2	2	15	16	1	1	0	0	15	8	4	2	0
248	94	5.4	2.98	0.49	9th	25	0	0	0	1	4	8	0	2	0	0	5	17	5	2	0
231	80	7.0	4.77	0.60	9th	28	2	7	3	2	8	20	0	2	0	1	9	15	2	2	0
268	90	7.8	8.73	0.75	16th	29	0	0	0	1	20	15	0	1	0	0	3	14	10	3	0
225	89	7.2	5.42	0.79	26th	28	3	1	1	0	15	0	0	2	0	4	2	12	0	0	11
268	85	8.0	6.75	0.81	6th	30	0	5	1	0	19	18	2	1	0	3	9	8	5	2	1
265	87	6.9	8.21	1.05	21st	24	0	1	0	0	11	16	3	0	1	0	2	10	13	2	0
322	93	8.4	3.88	0.76	22nd	28	0	2	1	1	21	17	2	0	1	1	7	10	7	3	0
273	85	7.7	4.85	0.88	22nd	24	0	3	1	0	15	12	2	0	2	2	9	5	8	3	0

station are not corrected for altitude. The observations at Barrow-in-Furness have now ceased.



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 1890.

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.	Min and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	28'7	13
LAIRG	32'8	45'2	39'0	15	23rd	54	16th	24	3'80	0'58	9th	—	—
GLENCARRON	34'9	45'3	40'1	17	23rd	56	16th	30	16'32	1'31	25th	?	?
FORT AUGUSTUS	36'0	46'7	41'4	20	23rd	55	16th	27	10'87	1'54	25th	13'0	6
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	64'2	29
BRAEMAR	32'9	43'9	38'4	14	23rd	52	7th	24	8'06	1'51	18th	23'7	11
OCHTERTYRE	33'6	46'2	39'9	24	22nd, 23rd	57	31st	26	8'10	1'12	6th	—	—
MARCHMONT	34'9	45'3	40'1	25	23rd, 24th	54	7th	21	2'98	0'55	9th	40'0	17
ALNWICK CASTLE	36'3	45'0	40'7	23	2nd	54	31st	16	1'97	0'35	8th	—	—
DURHAM	35'4	46'3	40'9	20	3rd	57	31st	21	2'08	0'22	9th	55'9	24
SCARBOROUGH	36'5	45'7	41'1	22	3rd	54	6th, 7th	20	2'04	0'26	9th	43'5	18
YORK	*	*	*	*	*	*	*	*	*	*	*	35'9	15
HILLINGTON	35'6	46'2	40'9	23	2nd	55	7th, 25th	19	2'73	0'60	27th	51'4	21
GELDESTON	35'9	47'0	41'5	19	2nd	55	25th	21	1'95	0'26	28th	61'0	24
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	58'1	23
ROTHAMPTON	35'2	47'7	41'5	18	1st	55	7th	24	2'86	0'42	27th	—	—
INGATESTONE	36'0	47'8	41'9	21	2nd	55	7th	21	2'18	0'28	27th	—	—
BAWTRY	34'8	47'7	41'3	21	4th	55	7th, 8th, 10th, 26th.	20	2'41	0'63	27th	46'7	19
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	45'6	23
CHEADLE	35'1	46'5	40'8	18	2nd, 3rd	55	16th	26	3'75	0'89	26th	—	—
CHURCHSTOCK	35'4	48'1	41'8	18	3rd	54	11th, 31st	22	5'20	1'38	21st	56'2	23
HEREFORD	36'6	48'5	42'6	21	3rd	55	9th, 15th, 16th	20	2'90	0'57	21st	—	—
CIRENCESTER	34'5	48'1	41'3	18	2nd	54	7th	24	3'16	0'45	27th	47'3	19
OXFORD	*	*	*	*	*	*	*	*	*	*	*	60'4	24
LONDON	*	*	*	*	*	*	*	*	*	*	*	42'7	17
STRATHFIELD TURGIS	36'3	48'8	42'6	21	1st, 2nd	54	7th, 9th, 25th	25	3'11	0'41	27th	—	—
HASTINGS	39'2	48'3	43'8	31	3rd	52	7th, 12th, 25th	22	3'14	0'81	28th	62'3	24
SOUTHAMPTON	39'3	49'7	44'5	27	2nd, 3rd	56	12th	25	3'94	0'43	4th	65'1	25
STOWELL	37'6	48'2	42'9	21	2nd	53	5th, 9th	24	3'38	0'43	21st	35'6	14
LAUDALE	38'8	—	—	30	23rd	—	—	30	15'08	1'40	14th	—	—
GLASGOW	37'7	46'4	42'1	28	23rd	53	7th, 16th	26	5'66	0'85	19th	26'2	11
GLENLEE	35'6	46'9	41'3	25	3rd	54	31st	27	8'25	1'06	9th	—	—
DOUGLAS	39'5	47'8	43'7	33	15th, 23rd, 29th	53	7th, 9th	24	4'77	0'67	21st	45'7	19
NEWTON REIGNY	36'1	46'1	41'1	29	3rd, 29th	51	7th, 9th, 10th, 11th, 12th, 16th, 25th.	29	5'78	0'60	21st	38'4	16
STONYHURST	36'6	46'1	41'4	21	3rd	53	6th, 7th, 16th, 25th.	30	5'91	0'63	26th	40'6	17
BLACKPOOL	36'8	47'5	42'2	24	3rd	55	16th	29	5'20	1'13	21st	35'9	15
MANCHESTER	36'8	47'0	41'9	21	3rd	54	6th, 7th, 25th	27	4'03	0'96	21st	—	—
LLANDUDNO	40'8	50'4	45'6	33	2nd, 28th	58	7th	24	3'68	1'03	21st	?	?
LLANDOVERY	35'6	48'4	42'0	20	2nd	54	6th	28	7'89	1'17	26th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	57'8	23
ARLINGTON	37'4	48'7	43'1	25	2nd	53	6th, 24th, 25th	27	6'73	0'85	27th	—	—
CULLOMPTON	37'3	50'0	43'7	20	2nd	56	28th	22	4'53	0'77	21st	41'5	16
FALMOUTH	42'5	50'4	46'5	33	2nd	55	6th	30	6'40	0'82	22nd	45'4	17
PLYMOUTH	41'1	51'0	46'1	26	2nd	55	5th, 20th	26	5'89	0'89	22nd	35'1	13
JERSEY	*	*	*	*	*	*	*	*	*	*	*	54'9	20
LONDONDERRY	37'6	47'9	42'8	29	23rd	55	16th	27	4'55	0'46	9th	—	—
MARKEE CASTLE	35'8	48'0	41'9	24	29th	57	14th	27	5'07	0'50	9th	52'4	22
BROOKBOROUGH	35'4	46'9	41'2	21	29th	59	14th	27	4'95	0'49	21st	—	—
ARMAGH	36'8	47'7	42'3	29	29th	54	6th, 7th, 11th, 12th, 16th.	24	2'93	0'39	9th	65'3	27
EDGEWORTHSTOWN	35'0	47'3	41'2	26	29th	54	7th, 16th, 25th	30	4'52	0'52	18th	—	—
DUBLIN	39'0	50'0	44'5	31	29th	57	7th, 16th	20	2'98	0'84	26th	73'2	30
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	53'0	22
KILKENNY CASTLE	35'7	48'7	42'2	26	29th	54	9th, 11th, 18th, 24th.	24	3'95	0'71	26th	—	—
WATERFORD	39'0	49'0	44'0	29	29th	54	18th	22	5'94	1'12	21st	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	53'3	21
KILLARNEY	39'4	50'0	45'2	24	29th	57	9th	27	11'46	1'82	6th	—	—
FOYNES	39'0	49'4	44'2	29	28th	55	9th, 10th, 11th, 16th, 18th.	25	6'98	0'88	4th	—	—

\* For information see Table I.

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

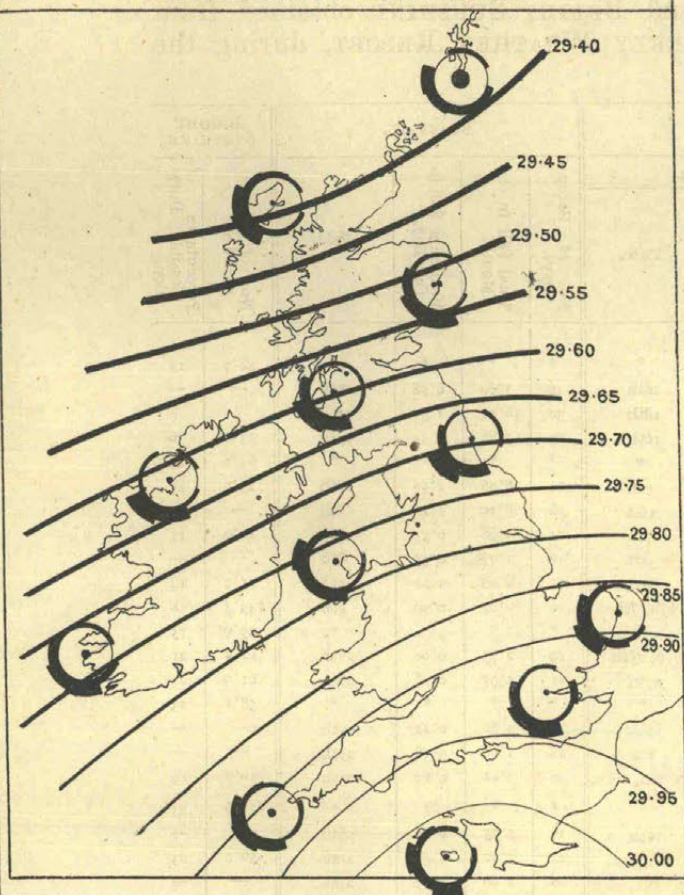


# MONTHLY WEATHER CHART. JANUARY 1890.

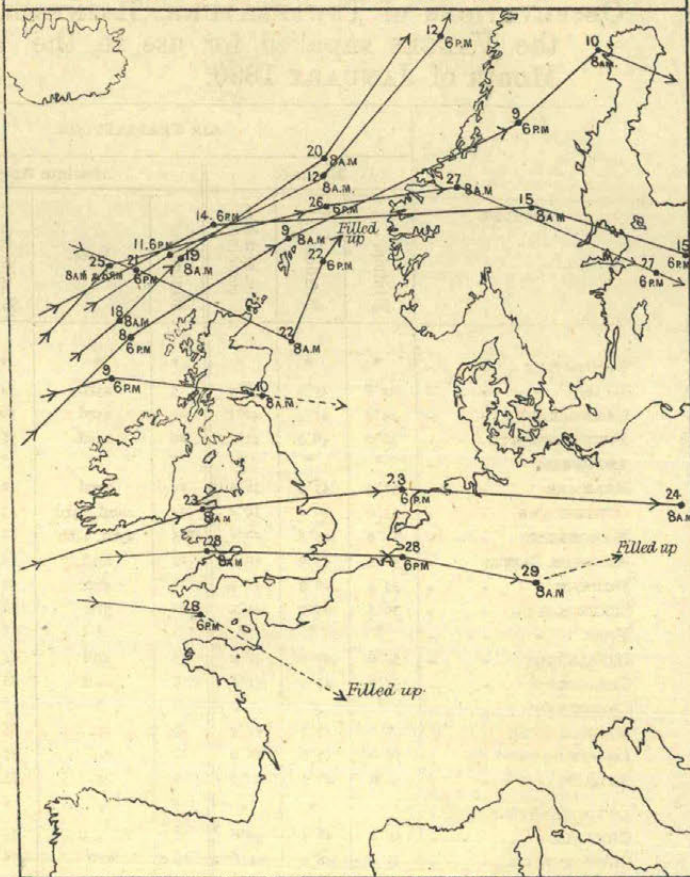
Monthly Summary.

Plate I.

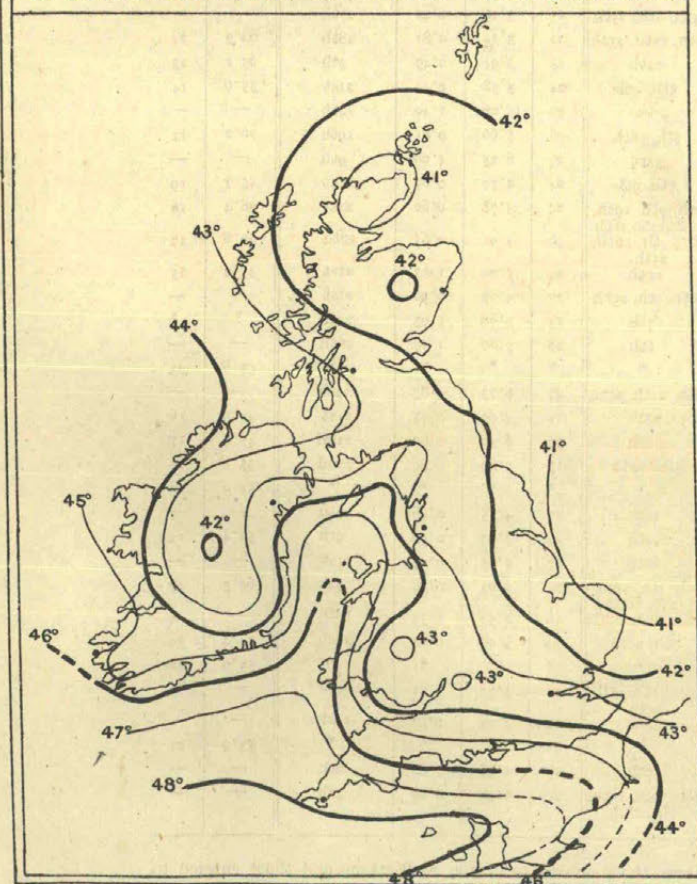
## 1. BAROMETER AND WIND.



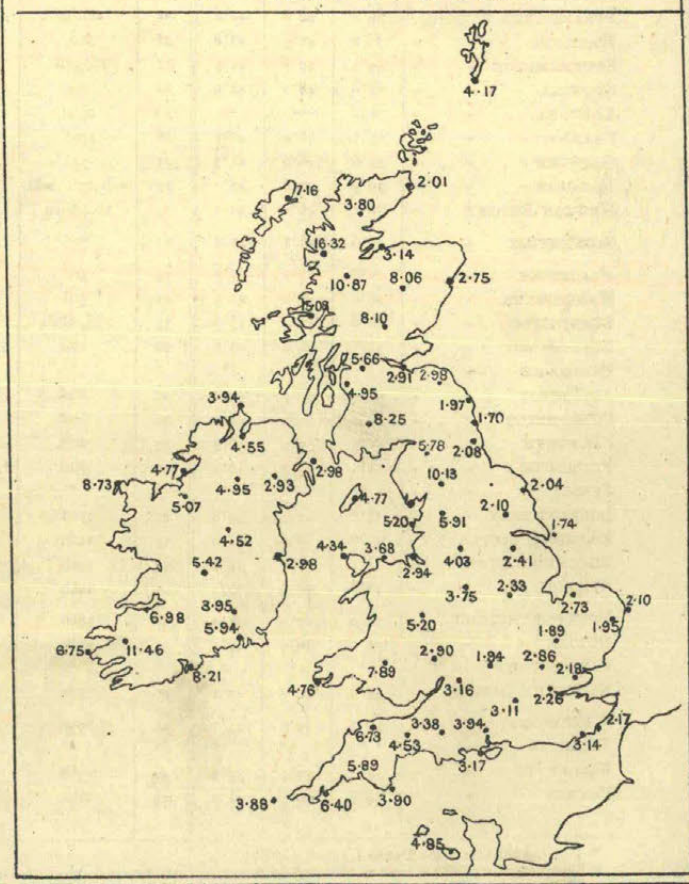
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.

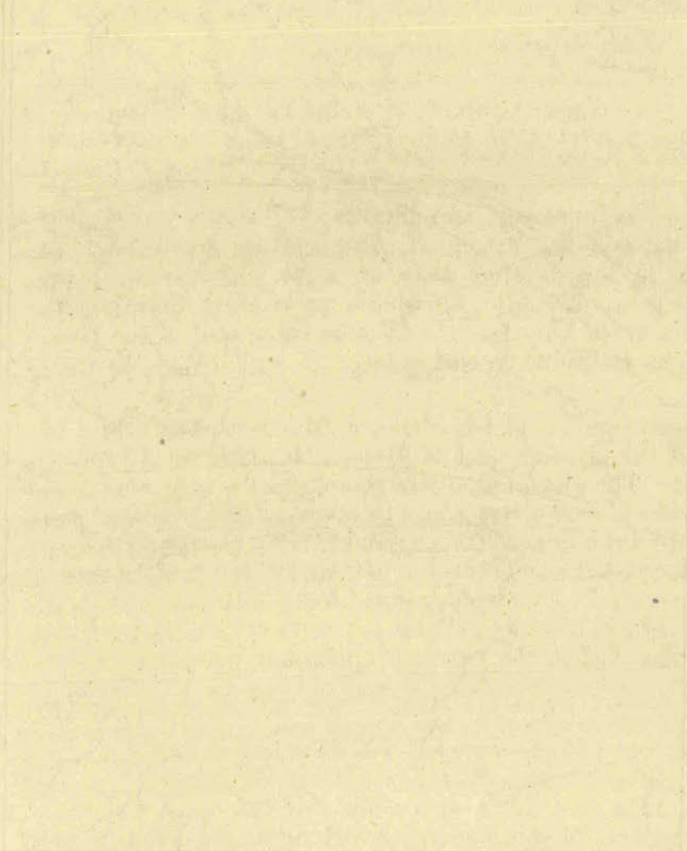


## 4. RAINFALL.

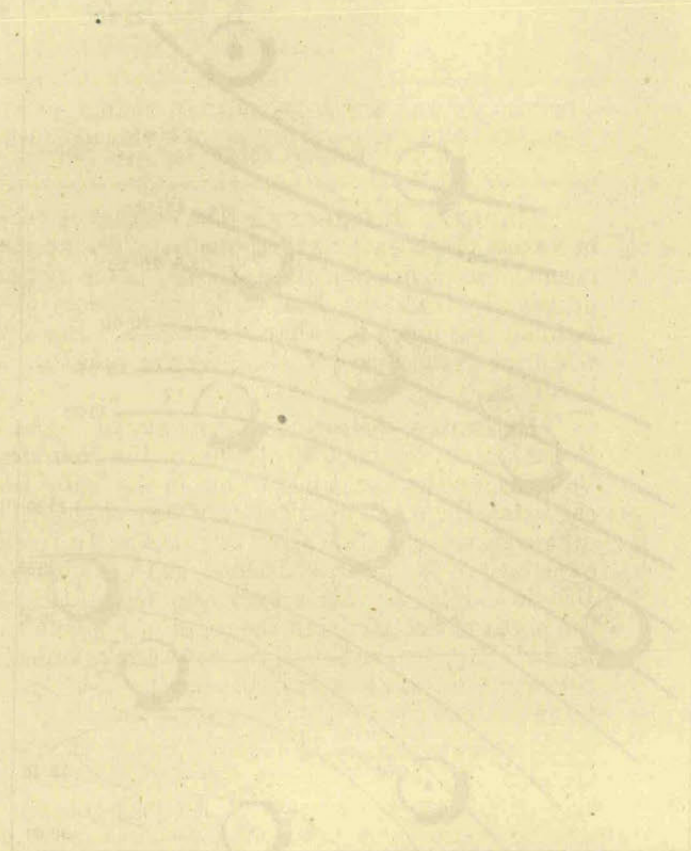




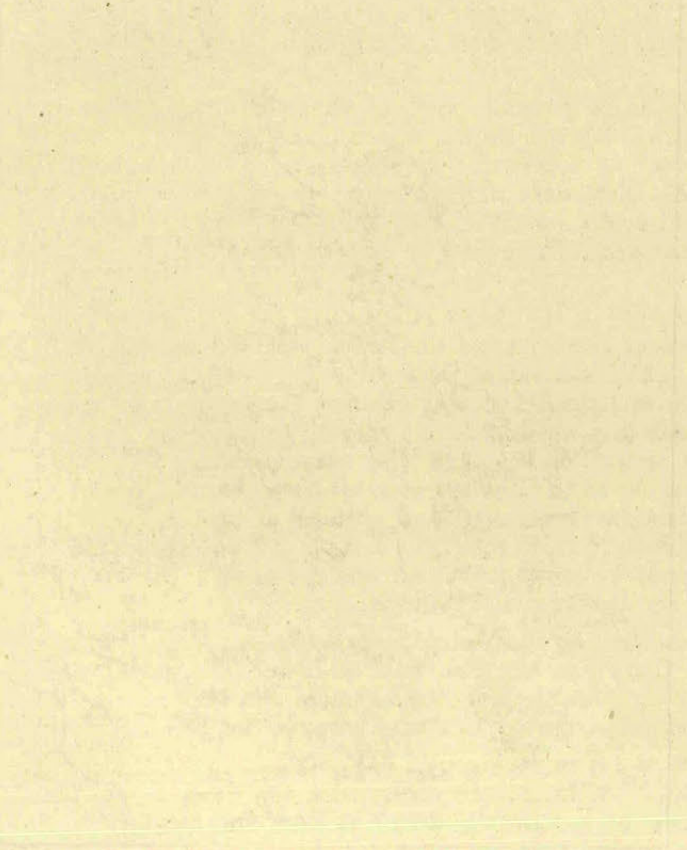
1. MOVEMENT OF DEPRESSIONS



2. DIRECTION AND FORCE OF WIND



3. RAINFALL



4. DISTRIBUTION OF MEAN TEMPERATURE





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

## FEBRUARY 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 February was quiet, cold, and very dry. Pressure was largely in excess of the average, especially in the northern parts of the kingdom. Temperature was below the normal, the deficiency of heat being more noticeable in the daytime than at night. The winds were principally from the Eastward, and seldom of any great strength; no severe gales were experienced. Rainfall was much less than the average. Snow was rare, the only fall of any note being that of the 15th, when the greater part of England was affected. Bright Sunshine varied greatly in amount in different localities.

**Pressure.**—*Mean for the month at 8 a.m.* ranged from about 30·25 ins. on the north-east coasts of Great Britain to about 30·15 ins. in the Hebrides and the extreme west of Ireland, to about 30·13 ins. at Valencia, and to about 30·10 ins. in the Scilly Islands. The distribution was therefore of a very abnormal character, the mean gradient was very slight. The values were everywhere in excess of the average,\* the difference ranging from about two tenths of an inch in the extreme south of England to more than three-tenths of an inch in the north of Ireland, and to as much as four-tenths and upwards in the northern parts of Great Britain. *Highest* values were recorded on the 23rd, when the barometer ranged from about 30·60 ins. in the north of Scotland and the south of England to 30·70 ins. or more over all the more central parts of the United Kingdom. *Lowest values* were recorded on the 2nd in the extreme north, but at varying times between the 12th and 16th in other parts of the country, the actual minima varying in each case between 29·3 ins. and 29·5 ins. *Range* was moderate.

**Depressions.**—The depressions which visited our Islands were rare and unimportant, the only systems worthy of note being—1. A well-defined, though not deep, disturbance which advanced from the Bay of Biscay to the east of England between the 14th and 15th, and which subsequently dispersed off our north-east coasts; and 2. A depression of somewhat greater energy which advanced towards our extreme south-west coasts on the 16th. The latter disturbance was originally of a threatening character, but its advance eastwards was suddenly checked, and it ultimately filled up over the Bay of Biscay. In the course of the period numerous large depressions travelled eastwards across the extreme north of Scandinavia to northern Russia.

**Anticyclones** were numerous and persistent. With the exception of a few days about the middle of month there was, in fact, no time at which anticyclonic conditions were not prevalent over a considerable portion of the kingdom.

**Wind.**—Over Ireland and England there was a large preponderance of winds from some Easterly point, but in the north and east of Scotland greater variability was shown, and at Stornoway and Aberdeen breezes from the Southward and South-westward were of frequent occurrence. Gales were somewhat numerous on our north and north-east coasts; at Wick there were 10 days on which gales were reported, at Aberdeen 9, and at Spurn Head 7. In the west and south, however, they were for the most part very rare; at Roches Point there were only 2, at Hurst Castle and Dungeness 1, and at Belmullet, Liverpool, Holyhead, Donaghadee none at all.

**Temperature.**—*Mean at Sea Level* ranged from 45° in the Scilly Islands to a little below 40° over central Ireland, and to a little below 38° over the south of Scotland and the east of England, as well as in isolated parts of our western and northern counties. The mean values were below the average,\* excepting in the north of Scotland, where a slight excess was shown; the deficit was greatest (two degrees or more) over the southern parts of the kingdom. *Highest* readings were recorded at varying times; over England they occurred mainly on the 1st, 18th, and 25th, over Ireland on the 22nd, and over Scotland on the 23rd. *Lowest* readings were also registered on irregular dates, but at the English stations they occurred chiefly on the 28th. *Vapour Tension* varied from 0·20 in. or less over central Ireland, the east of Scotland, and the greater part of England, to 0·24 in. in the Hebrides and 0·26 in. in the Scilly Islands. *Relative Humidity* ranged from about 85 per cent. over the east of Scotland, the south of Ireland, and the eastern parts of the English Channel, to about 95 per cent. in the west of Scotland and at Pembroke.

**Rainfall** was very deficient, an aggregate of less than an inch being reported from a large majority of our stations; at Nairn, Manchester, and Markree there was less than half an inch. The values were everywhere much less than the average\*; at Stornoway, Laudale, and Mullaghmore the amount was not more than one fifth of the normal quantity. The largest falls occurred, as a rule, between the 14th and 16th.

**Bright Sunshine.**—A fair amount was recorded in the extreme south, Valencia having 40, Plymouth and Hastings 41, and Jersey 44 per cent. of the possible duration. In other parts the weather was less sunny, the lowest per-centage of all being 11 at Glasgow, 16 in London, and 17 at York and Bawtry.

\* 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

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°183	40°4	37°4	43°0	40°2	27	28th	49	23rd
	Wick	30°204	39°1	35°0	43°5	39°3	29	8th, 28th	52	23rd
	Stornoway	30°152	40°5	35°6	44°9	40°3	27	15th	52	23rd
1. SCOTLAND, E.	Nairn	30°193	37°1	32°7	44°9	38°8	21	15th	53	23rd
	Aberdeen	30°254	37°6	35°0	42°9	39°0	29	28th	52	3rd, 23rd
	Leith	30°244	36°4	32°1	43°2	37°7	23	7th, 8th	55	23rd
2. ENGLAND, N.E.	Shields	30°241	38°3	35°0	43°1	39°1	29	28th	52	1st
	York	30°254	36°9	33°8	42°9	38°4	25	28th	51	1st, 3rd
	Spurn Head	30°219	39°0	36°5	41°8	39°2	30	28th	49	1st
3. ENGLAND, E.	Yarmouth	30°214	37°5	34°4	40°8	37°6	30	3rd, 28th	46	1st, 16th
	Cambridge	30°231	34°9	30°3	44°2	37°3	23	11th	51	1st
4. MIDLAND COUNTIES	Loughborough	30°240	35°1	32°4	43°7	38°1	27	6th, 13th, 23rd, 24th, 28th, 4th, 11th, 13th	51	1st
	Oxford	30°223	34°4	31°7	43°6	37°7	26		49	18th
5. ENGLAND, S.	London	30°201	35°8	33°7	43°5	38°6	28	3rd, 28th	51	17th
	Dungeness	30°177	38°0	35°0	43°3	39°2	26	28th	52	2nd
	Hurst Castle	30°180	39°7	35°8	44°3	40°1	28	3rd	48	1st, 25th
6. SCOTLAND, W.	Ardrossan	30°226	36°9	34°1	42°7	38°4	28	9th	50	23rd
7. ENGLAND, N.W.	Hawes Junction*	28°966	32°8	29°4	37°8	33°6	23	15th, 28th	46	25th
	Liverpool	30°232	35°9	34°2	42°0	38°1	29	11th, 12th, 28th	50	1st
	Holyhead	30°208	39°0	37°2	44°8	41°0	32	8th, 9th, 10th, 13th, 14th.	51	11th
8. ENGLAND, S.W.	Pembroke	30°177	38°9	36°8	44°7	40°8	32	8th, 9th	50	25th
	Prawle Point	30°155	39°8	37°1	44°8	41°0	27	28th	52	4th
9. IRELAND, N.	Malin Head	30°168	39°3	37°3	44°1	40°7	32	15th	49	21st, 22nd, 23rd
	Donaghadee	30°226	39°8	37°3	44°9	41°1	31	14th	50	21st, 23rd
	Mullaghmore	30°167	40°4	37°1	45°1	41°1	26	16th	50	20th, 23rd
	Belmullet	30°154	39°9	37°0	46°2	41°6	30	16th, 17th	52	21st, 22nd
10. IRELAND, S.	Parsonstown	30°170	37°3	33°8	45°9	39°9	23	8th, 9th	54	20th
	Valencia	30°126	43°0	38°8	48°8	43°8	30	6th	52	18th, 20th, 22nd, 25th, 20th
	Roche's Point	30°140	42°4	38°7	47°0	42°9	32	6th	52	
CHANNEL ISLANDS	Scilly (St. Mary's)	30°104	44°5	41°5	48°1	44°8	37	28th	54	20th
	Jersey	30°134	40°6	38°6	46°7	42°7	32	24th, 25th	56	19th

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



## SUMMARY OF OBSERVATIONS, FEBRUARY 1890.

vii

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of FEBRUARY 1890.

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.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calm.
ins.	%		ins.	in.																	
0.220	88	8.9	1.52	0.30	21st	19	4	1	0	0	20	5	3	1	1	7	4	1	7	3	1
209	88	7.3	1.21	0.28	28th	15	1	1	0	4	16	10	1	1	0	4	8	1	9	3	1
241	96	8.3	0.76	0.20	20th	14	2	0	0	0	16	3	2	2	2	6	4	6	3	1	2
192	87	5.5	0.45	0.15	28th	11	3	0	0	5	5	1	0	0	3	5	0	6	4	0	10
191	84	7.1	0.85	0.45	15th	14	4	1	0	2	12	9	0	1	1	7	4	7	4	4	0
194	90	7.3	0.71	0.48	15th	6	3	0	0	2	13	0	0	0	5	2	3	1	9	3	5
205	89	8.5	1.23	0.57	15th	11	4	0	0	0	16	1	2	2	3	5	2	5	3	5	1
201	92	9.1	0.76	0.45	15th	8	2	0	0	0	21	0	9	1	9	2	1	2	2	1	1
212	90	7.4	0.74	0.33	15th	10	1	1	0	0	10	7	5	2	8	4	0	3	3	2	1
199	89	5.8	0.66	0.29	15th	11	2	0	0	4	5	5	4	3	7	7	0	3	0	3	1
183	90	7.2	0.84	0.36	15th	8	2	0	0	7	19	0	9	5	5	2	1	3	0	1	2
189	92	9.1	0.69	0.39	15th	9	4	0	0	1	23	0	4	5	8	4	0	0	3	4	0
183	92	6.8	0.76	0.37	15th	9	3	1	0	7	14	0	3	14	3	1	1	3	0	1	2
188	89	6.7	1.00	0.54	14th	7	4	0	0	6	14	0	4	5	7	3	2	0	2	3	2
197	86	6.1	0.97	0.43	14th	7	2	0	0	1	4	1	1	5	8	8	1	3	1	1	0
201	82	6.9	0.64	0.50	14th	4	1	0	0	1	11	1	1	9	11	3	0	1	2	1	0
207	95	6.9	0.52	0.16	1st	5	1	0	0	2	14	0	2	13	3	0	1	2	1	1	5
172	92	6.9	1.15	0.39	1st	12	3	0	0	2	17	0	4	3	11	4	1	3	1	1	0
190	90	7.9	0.56	0.15	15th	9	1	0	0	2	15	0	3	3	9	6	1	3	1	2	0
214	90	5.9	1.21	0.41	19th	10	0	0	0	4	8	0	3	6	8	2	0	5	0	0	4
227	96	5.9	0.59	0.23	16th	8	0	0	0	0	2	3	0	6	14	5	0	1	0	2	0
220	91	7.2	0.80	0.27	19th	5	1	0	0	0	11	4	5	12	7	1	2	0	0	1	0
217	91	6.9	0.70	0.19	17th	13	0	1	0	4	17	1	1	3	0	8	11	1	3	1	0
230	94	7.1	1.38	0.29	20th	12	0	0	0	0	6	0	0	6	3	8	1	5	4	1	0
216	87	6.6	0.66	0.13	1st	14	0	3	0	6	9	3	0	2	9	7	2	2	1	2	3
221	91	6.4	1.57	0.37	12th	13	1	0	0	6	16	0	0	2	8	8	3	3	2	2	0
199	90	6.9	0.79	0.16	1st	10	0	0	0	0	8	0	0	1	1	7	0	0	0	0	19
234	84	6.8	3.57	0.68	12th	18	0	0	0	2	12	3	2	4	6	4	1	1	3	3	4
229	85	6.3	3.96	1.55	13th	14	0	0	0	1	8	2	4	4	6	5	4	2	2	1	0
259	88	7.6	2.00	0.59	17th	11	1	2	0	0	13	9	2	6	8	5	3	0	1	1	2
210	84	6.9	1.88	1.17	14th	11	2	3	1	2	12	2	2	9	9	3	1	2	2	3	1

barometric observations at this station are not corrected 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 1890.

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.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	58.0	23
LAIRG	30.8	43.5	37.2	18	15th	54	7th	16	2.22	0.80	15th	—	—
GLENCARRON	33.0	43.9	38.5	24	10th, 11th	52	25th	16	2.12	0.65	1st	?	?
FORT AUGUSTUS	33.3	44.3	38.8	21	15th	53	23rd	8	0.66	0.28	1st	57.1	22
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	48.5	19
BRAEMAR	28.4	41.6	35.0	12	15th	50	25th	9	1.38	0.51	15th	72.2	28
OCHTERTYRE	30.1	44.5	37.3	23	10th, 14th	60	23rd	8	1.04	0.44	15th	—	—
MARCHMONT	32.4	41.6	37.0	25	28th	50	1st, 23rd	13	1.63	0.92	15th	57.3	22
ALNWICK CASTLE	34.5	41.4	38.0	27	14th	49	1st	11	1.92	1.06	14th	—	—
DURHAM	32.5	42.5	37.5	27	23rd, 28th	52	1st	14	1.32	0.75	15th	57.0	22
SCARBOROUGH	35.1	41.5	38.3	30	6th, 28th	50	1st	13	1.97	0.70	15th	46.0†	18
YORK	*	*	*	*	*	*	*	*	*	*	*	45.8	17
HILLINGTON	32.3	42.4	37.4	24	23rd	49	1st	10	0.72	0.26	15th	83.7	31
GELDESTON	33.5	42.8	38.2	28	4th	48	16th	12	0.73	0.22	15th	92.1	34
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	74.3	27
ROTHAMSTED	32.2	42.0	37.1	26	13th, 28th	48	? 1st	12	0.74	0.42	14th	—	—
INGATESTONE	32.8	42.3	37.6	26	4th, 28th	49	3rd	11	1.01	0.47	14th	—	—
BAWTRY	32.9	44.0	38.5	23	11th	54	1st	10	0.83	0.60	16th	45.8†	17
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	49.8†	18
CHEADLE	31.8	41.2	36.5	24	28th	51	25th	10	0.65	0.28	15th	—	—
CHURCHSTOKES†	—	—	—	—	—	—	—	—	—	—	—	—	—
HEREFORD	31.0	43.4	37.2	25	4th 11th	52	25th	8	0.69	0.22	19th	—	—
CIRENCESTER	31.0	42.8	36.9	22	3rd	48	1st	6	0.54	0.21	14th	74.1	27
OXFORD	*	*	*	*	*	*	*	*	*	*	*	72.4	27
LONDON	*	*	*	*	*	*	*	*	*	*	*	42.9	16
STRATHFIELD TURGISSE	31.7	43.8	37.8	25	3rd, 4th	51	18th	8	1.10	0.61	14th	—	—
HASTINGS	35.0	42.9	39.0	28	28th	50	2nd	8	1.15	0.56	14th	111.7	41
SOUTHAMPTON	34.1	44.5	39.3	27	28th	53	18th	7	0.73	0.45	14th	98.1	36
STOWELL	32.1	42.7	37.4	24	24th	51	18th	10	0.75	0.22	14th	58.8	21
LAUDALE	35.3	45.1	40.2	29	28th	52	1st	13	1.73	0.52	1st	—	—
GLASGOW	33.9	41.9	37.9	28	28th	52	23rd	8	0.66	0.17	1st	29.6	11
GLENLEE	30.8	43.0	36.9	19	9th	54	1st	8	0.97	0.39	1st	—	—
DOUGLAS	35.7	43.8	39.8	28	28th	51	25th	10	1.69	0.54	1st	66.8	25
NEWTON REIGNY	31.1	41.6	36.4	23	8th	50	1st	8	0.74	0.24	1st	79.7	30
STONYHURST	32.2	41.6	37.2	26	28th	50	25th	10	0.87	0.24	1st, 15th	64.1	24
BLACKPOOL	33.8	42.5	38.2	28	22nd	47	1st	10	1.06	0.30	16th	60.3	23
MANCHESTER	33.4	42.1	37.8	26	28th	49	1st, 25th	8	0.47	0.13	15th, 28th	—	—
LLANDUDNO	35.1	43.3	39.2	29	13th	49	1st, 21st	5	1.13	0.32	15th	88.0	33
LLANDOVERY	30.9	44.6	37.8	20	28th	56	25th	10	1.06	0.32	16th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	92.9	34
ARLINGTON	33.4	44.1	38.8	26	28th	52	21st	9	1.31	0.37	—	—	—
CULLOMPTON	33.5	44.6	39.1	24	3rd, 4th	51	18th, 19th, 21st	8	1.41	0.85	16th	77.7	28
FALMOUTH	37.6	45.6	41.6	30	28th	51	18th, 20th	8	1.46	0.47	12th	105.1	38
PLYMOUTH	35.9	45.8	40.9	28	4th, 28th	51	18th, 20th, 21st	7	1.25	0.82	16th	113.8	41
JERSEY	*	*	*	*	*	*	*	*	*	*	*	122.0	44
LONDONDEERY	35.1	44.9	40.0	29	15th	51	22nd	13	0.74	0.12	1st	—	—
MARKREE CASTLE	32.1	45.2	38.7	23	5th, 8th	51	22nd	9	0.46	0.14	16th	55.3	21
BROOKBOROUGH	32.8	44.3	38.6	23	5th	52	22nd	7	1.15	0.30	20th	—	—
ARMAGH	34.8	44.4	39.6	28	27th, 28th	52	22nd	11	0.93	0.20	17th	48.3	18
EDGEWORTHSTOWN	33.0	44.4	38.7	24	16th	51	23rd	15	1.05	0.20	20th	—	—
DUBLIN	37.5	45.5	41.5	28	16th	53	1st	7	0.80	0.28	16th	57.6	21
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	64.0	24
KILKENNY CASTLE	34.4	46.0	40.2	25	14th	55	22nd	8	1.53	0.40	21st	—	—
WATERFORD	35.6	46.4	41.0	26	16th	51	17th, 20th, 22nd, 25th.	13	2.01	0.38	21st	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	109.5	40
KILLARNEY	34.1	47.3	40.7	23	6th	56	2nd	13	2.81	0.89	12th	—	—
FOYNES†	—	—	—	—	—	—	—	—	—	—	—	—	—

\* For information see Table III.

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

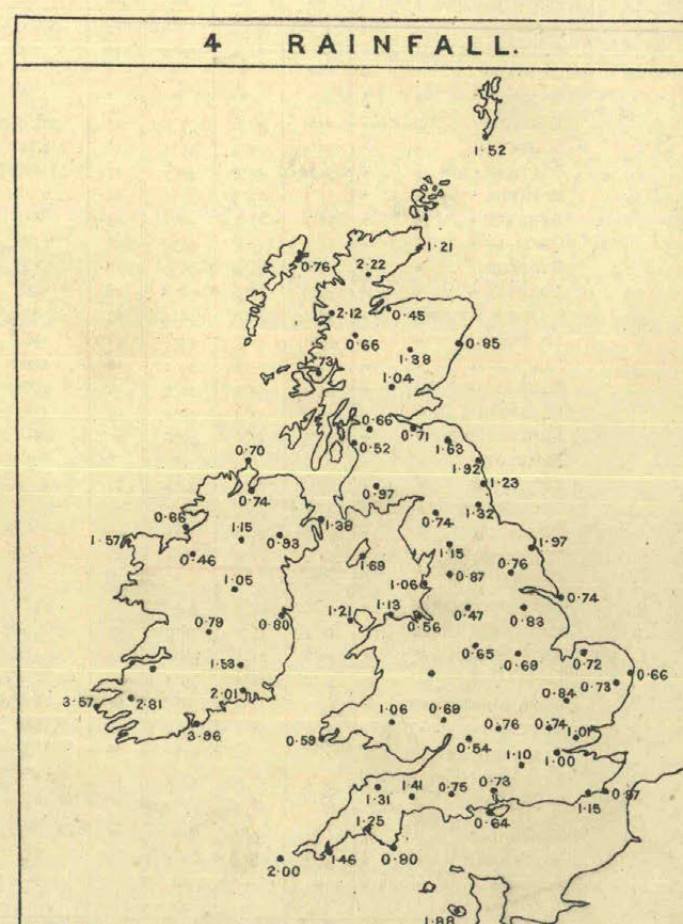
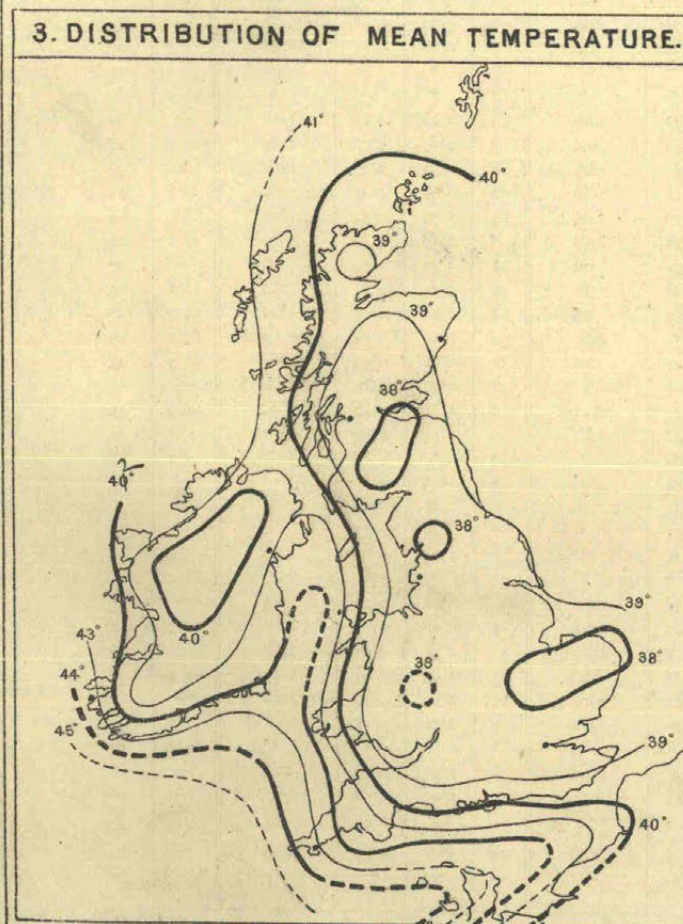
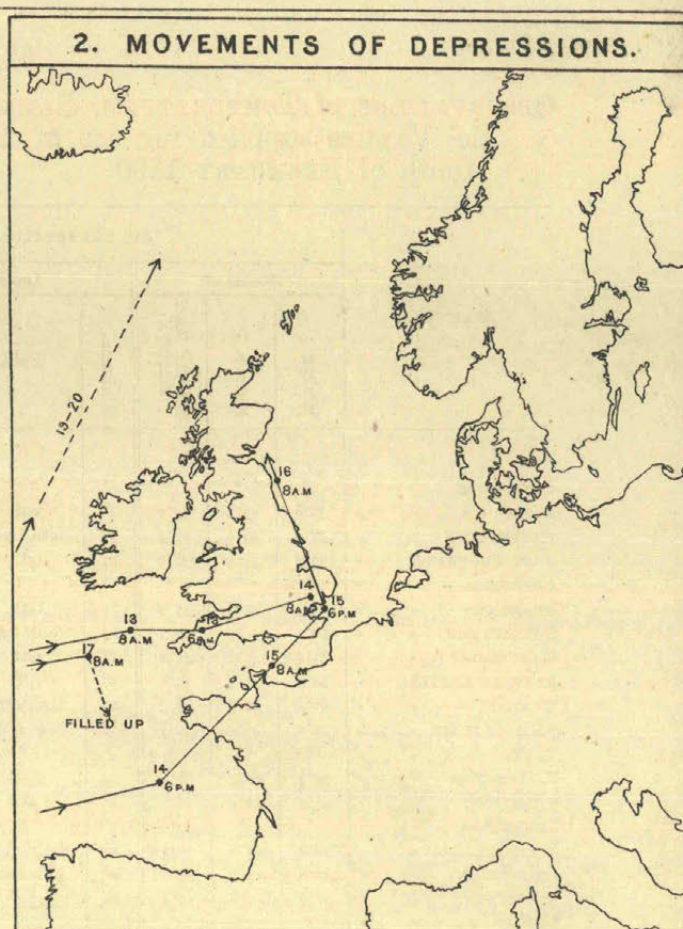
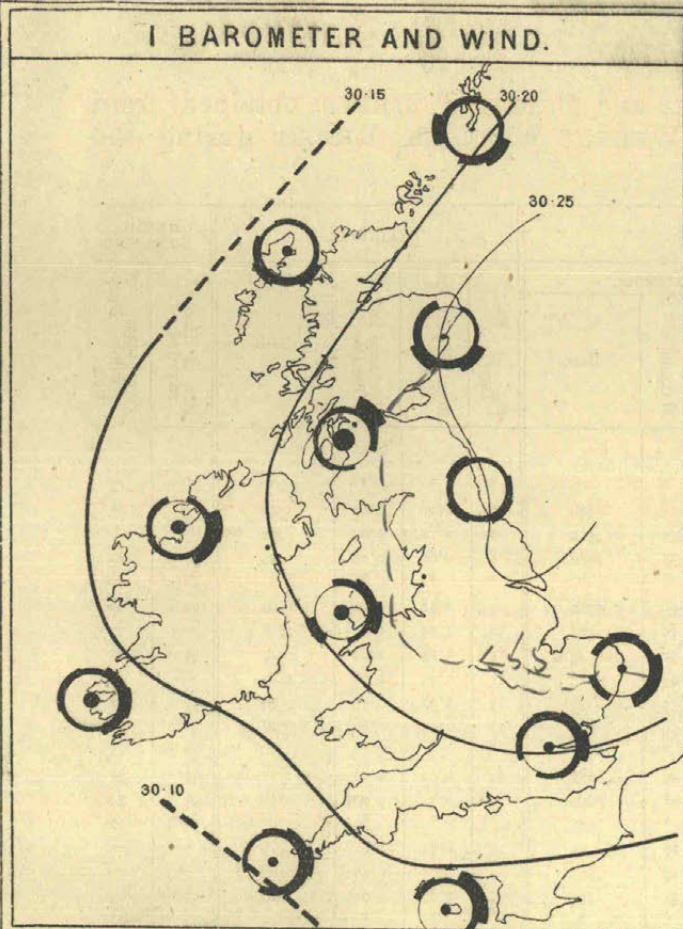
‡ Returns incomplete.



# MONTHLY WEATHER CHART FEBRUARY, 1890.

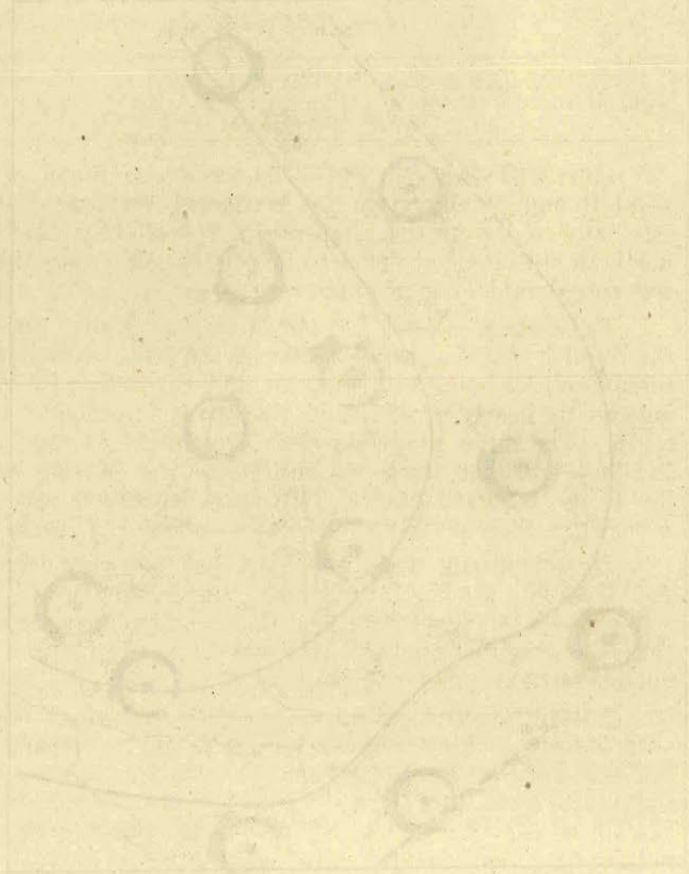
Monthly Summary

Plate II.

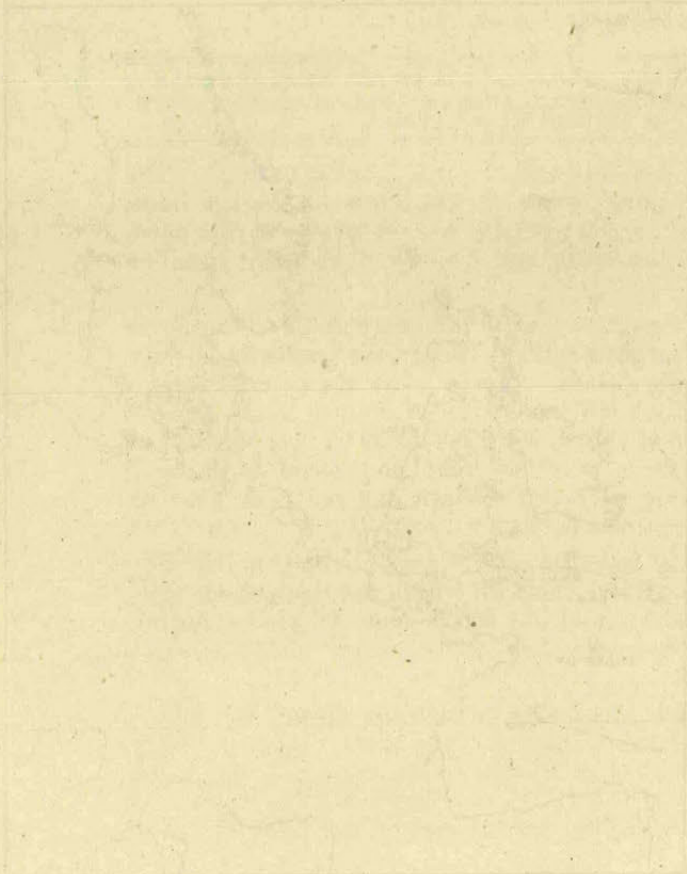




1. LOWS AND WIND



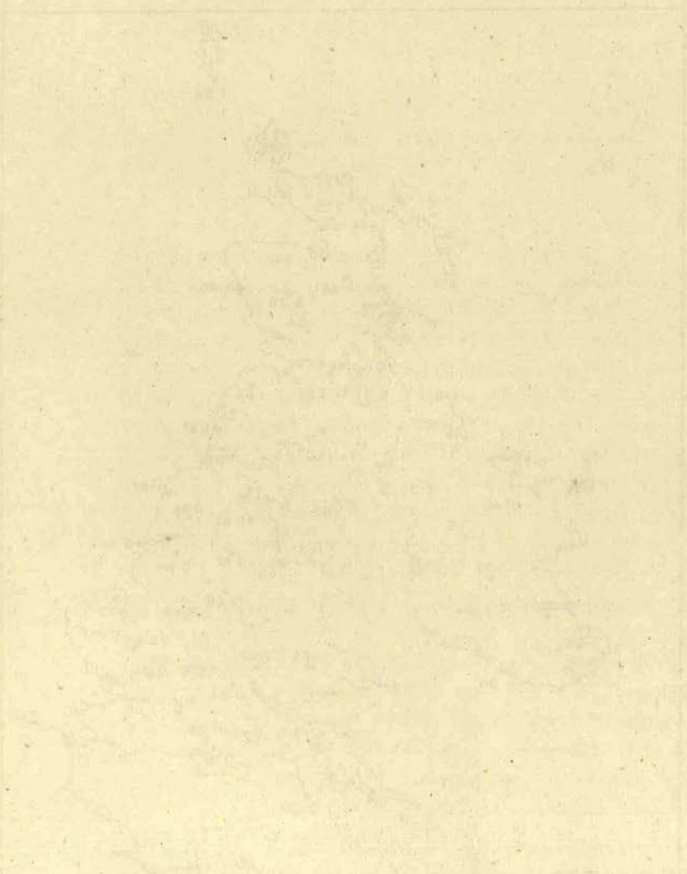
2. MOVEMENTS OF DEPRESSIONS



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,

## MARCH 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 changeable and unsettled, but not rough. The wind, though chiefly from the Westward, was constantly varying; pressure was below its average value, especially in the north; temperature was slightly above the normal; rainfall was in excess at the most northern stations, but deficient (except in a few instances) in the South, and the amount of bright sunshine was considerable, but nowhere very large.

**Pressure.**—*Mean for the Month at 8 a.m.* varied from between 29·88 ins. and 29·92 ins. over the English Channel, to 29·52 ins. at the southern extremity of the Shetland Islands, the gradients between these localities being very uniform, and favourable for Westerly winds. It was below the average\* everywhere—by nearly 0·25 ins. in the extreme north, and by only a few hundredths of an inch in the extreme south. The mean gradients were consequently steep. *Highest* values, 30·5 ins. to 30·6 ins., occurred on the 2nd, when an elongated anticyclone was moving southwards over the kingdom; *lowest*, 28·9 ins. to 29·1 ins., occurred on the 24th as a depression was moving over our western and northern districts. *Range* was consequently considerable—about 1·7 ins. in the extreme north-west, but not so large elsewhere.

**Depressions** were numerous, but not very deep; they travelled over almost all parts of our area, and from all kinds of directions. Some were formed and several filled up within the limits of our area, while others remained for a long time under our observation and moved in a remarkable manner—especially those observed between the 18th and 21st. The largest systems were those which passed north-eastwards outside our extreme north coasts.

**Anticyclones.**—Two well-marked systems of this kind passed over our Islands during the month, each of them moving from a northerly or north-westerly direction. The first came over us between the 1st and 4th, and was remarkable for the very low temperatures which it brought to many parts of England—notably to certain parts of Surrey on the morning of the 4th. The second reached our western coasts on the 30th, and after advancing to Scotland moved south-eastwards, its central parts being over our north-eastern counties when the month closed.

**Wind** varied greatly in direction, and was often somewhat strong in force. In the north-east of Great Britain, and the west of Ireland and Scotland, gales were rather frequent, the numbers reported being 15 at Aberdeen and 12 at Spurn Head, on the one hand, and 14 at Mullaghmore, 10 at Stornoway, and 7 at Malin Head, on the other. The dominant direction of the wind was Westerly, but there was a large per-centage of Southerly wind at Shields, South-westerly at Mullaghmore, and Northerly at Scilly.

**Temperature.**—*Mean at Sea Level* varied from 47°·1 at the Scilly Islands, 46°·3 at Jersey, and 45°·5 at Valencia to rather below 41° at Stornoway and Sumburgh Head. Cold patches are shown in Map 3 over the northern half of Ireland and in several parts of the north of England and south of Scotland, but over the south and east of England temperature was *relatively* rather high, some tendency to the summer type of distribution being observed. It was rather above the average in all districts—most in the south of Scotland, where the excess amounted to 2°. *Highest* readings were observed over England and the north of Ireland between the 26th and 28th, when moderate gradients for Westerly and South-westerly winds were prevalent, but in the north-west of England and over the greater part of Scotland they occurred on the 16th. *Lowest* values occurred very generally between the 2nd and 4th, as the well-marked anticyclone, mentioned above, moved southwards over the kingdom. The cold on this occasion was very severe for the time of year in several localities—notably over our south-eastern counties. At our own stations the minima were 6° at Hillington, 10° at Braemar, and 11° at Rothamstead; but values as low as 5° in the shade are reported from the Caterham Valley and adjacent regions. *Range* was consequently very large in some places (as much as 56° at Hillington), but not generally. *Vapour Tension* varied from about 0·26 in. at Valencia, Belmullet, Pembroke, and Scilly, to about 0·21 in. over the north-east of Scotland and at Hawes Junction. *Relative Humidity* at 8 a.m. ranged from between 90 and 95 per cent. on our extreme north-western coasts, and from 90 and more in the extreme east of England to between 84 and 87 at our extreme south-western stations and to between 82 and 84 in the east of Scotland.

**Rainfall** varied from about 0·9 in. at Oxford, Hereford, and Cirencester, and from nearly an inch at Hurst Castle, to more than 4 ins. in the south of Ireland, and at Stonyhurst, Lairg, Stornoway, and Sumburgh Head, to nearly 6 ins. at Fort Augustus, to 9·2 ins. at Laudale, and to 13·1 ins. at Glen Carron. In most places the fall was short of the average, especially in the south of England; at the more northern of the Scotch stations there was some excess, and at Sumburgh Head it was large. The number of rainy days exceeded 20 over many parts of our western and northern districts (26 at Stornoway and Hawes Junction, 25 at Glencarron and Stornoway, and 24 in several other places), but was much smaller elsewhere (11 at Bawtry, 12 at Spurn Head, Cirencester, and Jersey).

**Bright Sunshine.**—The per-centage of possible duration actually recorded was as low as 18 at Fort Augustus, but was higher elsewhere, the values ranging, roughly speaking, from between 24 and 27 over our northern and north-eastern counties to between 34 and 39 over Ireland, the south-west of England, and the Channel Islands. In London the per-centage was only 23, at Glasgow 22.

\* The averages employed are—*Pressure* and *Temperature* for 20 years, 1861–80; *Rainfall* for 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 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° 523	39° 9	35° 6	44° 5	40° 1	22	9th	50	29th
	Wick	29° 583	40° 6	34° 9	46° 5	40° 7	20	9th	54	12th, 13th
	Stornoway	29° 565	40° 1	34° 3	46° 7	40° 5	22	8th, 9th	53	11th, 28th
1. SCOTLAND, E.	Nairn	29° 609	40° 0	34° 2	48° 5	41° 4	21	9th	58	16th
	Aberdeen	29° 644	40° 6	35° 9	47° 7	41° 8	23	9th	63	12th
	Leith	29° 678	42° 4	37° 0	50° 1	43° 6	26	3rd	60	16th
2. ENGLAND, N.E.	Shields	29° 707	42° 7	37° 7	49° 6	43° 7	27	4th	60	27th
	York	29° 761	42° 4	36° 9	50° 8	43° 9	25	3rd, 4th	61	28th
	Spurn Head	29° 750	41° 9	38° 0	47° 7	42° 9	28	2nd, 3rd, 4th	62	28th
3. ENGLAND, E.	Yarmouth	29° 785	41° 7	36° 5	47° 8	42° 2	22	4th	59	28th
	Cambridge	29° 832	41° 5	33° 4	52° 0	42° 7	14	4th	63	28th
4. MIDLAND COUNTIES	Loughborough	29° 809	41° 3	36° 1	51° 7	43° 9	18	4th	64	27th
	Oxford	29° 849	40° 8	35° 8	50° 5	43° 2	17	4th	63	28th
5. ENGLAND, S.	London	29° 845	41° 9	36° 3	51° 2	43° 8	15	4th	66	28th
	Dungeness	29° 843	41° 1	36° 3	46° 9	41° 6	13	4th	55	11th
	Hurst Castle	29° 878	43° 2	38° 5	48° 7	43° 6	23	4th	57	30th
6. SCOTLAND, W.	Ardrossan	29° 690	42° 3	38° 0	47° 7	42° 9	25	3rd	55	31st
7. ENGLAND, N.W.	Hawes Junction*	28° 491	37° 5	32° 5	43° 4	38° 0	16	3rd	54	16th
	Liverpool	29° 784	42° 6	38° 7	49° 1	43° 9	26	3rd	60	28th
	Holyhead	29° 787	43° 8	40° 4	48° 5	44° 5	30	4th	56	31st
8. ENGLAND, S.W.	Pembroke	29° 835	43° 5	40° 4	47° 1	43° 8	27	3rd	54	31st
	Prawle Point	29° 885	43° 5	39° 1	48° 3	43° 7	23	4th	56	6th, 30th
9. IRELAND, N.	Malin Head	29° 668	42° 2	38° 8	47° 2	43° 0	31	3rd	52	27th, 28th
	Donaghadee	29° 739	42° 9	39° 1	50° 2	44° 7	30	3rd, 4th	57	10th, 27th
	Mullaghmore	29° 730	43° 1	39° 3	48° 7	44° 0	28	3rd	55	27th
	Belmullet	29° 744	43° 9	40° 1	49° 3	44° 7	31	3rd	57	31st
10. IRELAND, S.	Parsonstown	29° 798	40° 3	35° 7	51° 0	43° 4	24	2nd	58	12th
	Valencia	29° 843	45° 2	40° 1	50° 9	45° 5	29	3rd	58	30th, 31st
	Roche's Point	29° 834	44° 2	39° 5	50° 6	45° 1	27	4th	56	11th
CHANNEL ISLANDS	Scilly (St. Mary's)	29° 862	45° 8	43° 0	50° 5	46° 8	30	3rd	56	11th
	Jersey	29° 916	44° 7	40° 1	50° 7	45° 4	21	4th	62	28th

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



## SUMMARY OF OBSERVATIONS, MARCH 1890.

xi

REPORTING STATIONS in the BRITISH ISLANDS during the Month of MARCH 1890.

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. 0.218	89	8.5	ins. 4.61	ins. 1.14	17th	24	7	0	0	1	21	5	5	2	1	5	2	5	4	3	4
214	85	6.4	2.97	0.62	20th	19	3	1	0	3	13	7	1	1	2	2	6	5	3	11	0
236	95	7.9	4.37	0.50	7th, 16th	26	2	0	0	0	16	10	2	0	1	3	0	9	8	6	2
211	86	6.1	2.36	0.59	7th	21	3	0	0	2	8	2	0	1	3	2	2	9	7	1	6
206	82	6.4	2.94	0.63	7th, 20th	19	6	2	0	0	8	15	3	0	1	5	5	5	7	5	0
227	84	6.9	1.29	0.38	20th	19	3	0	1	1	12	1	1	2	2	2	3	5	13	2	1
233	85	7.9	1.71	0.40	24th	15	1	1	0	0	12	5	2	2	0	1	9	5	8	3	1
235	87	6.1	1.37	0.27	24th	17	0	1	2	9	14	0	5	0	1	3	5	6	9	2	0
238	90	7.9	1.57	0.84	19th	12	5	0	0	0	14	12	3	1	1	3	4	10	7	2	0
238	91	5.6	2.18	0.72	19th	19	4	0	0	7	6	3	2	1	2	1	2	8	9	6	0
230	88	7.4	2.15	0.86	19th	13	4	0	1	3	18	0	4	1	0	0	5	15	3	2	1
224	87	7.1	1.34	0.26	23rd	17	4	1	1	4	13	3	1	2	1	2	3	7	10	3	2
225	89	6.8	0.84	0.14	24th	16	4	1	0	9	17	0	2	2	0	2	5	11	5	3	1
224	85	5.7	1.98	0.44	19th	15	7	2	0	13	15	0	0	2	3	2	4	9	8	3	0
230	89	6.3	2.14	0.56	2nd	14	6	0	0	2	5	4	3	2	2	1	2	5	13	3	0
255	91	7.0	0.97	0.35	24th	13	2	0	0	0	12	3	1	4	2	1	2	4	11	5	1
244	91	6.1	2.00	0.36	8th	19	0	0	0	3	13	3	1	5	2	3	2	6	5	6	1
212	94	8.1	5.73	0.70	26th	26	6	1	0	1	20	0	1	2	3	2	5	12	4	2	0
229	84	7.2	1.61	0.39	16th	17	0	0	0	5	16	3	0	3	0	5	4	7	9	3	0
250	88	6.4	2.36	0.43	27th	21	1	2	0	2	11	1	1	2	2	2	5	8	7	4	0
260	92	6.4	1.56	0.28	24th	20	0	0	0	1	11	6	1	4	2	4	2	9	4	5	0
256	90	7.1	1.34	0.20	8th	16	2	0	0	1	15	3	4	3	1	2	6	6	6	3	0
235	88	7.0	2.16	0.69	15th	20	1	0	0	4	17	7	4	1	1	3	7	9	3	3	0
248	90	6.3	1.87	0.48	15th, 24th	19	0	1	0	2	11	6	1	3	1	2	2	7	9	6	0
235	84	6.5	2.97	0.59	15th	23	1	2	0	4	11	14	2	1	3	2	4	12	2	5	0
264	92	7.2	2.85	0.36	9th	24	0	0	0	4	18	6	3	1	4	3	1	6	10	3	0
225	91	6.8	2.91	1.35	15th	18	2	0	0	2	15	0	0	0	0	2	0	10	0	3	16
258	86	7.2	4.18	0.75	17th	24	2	0	0	2	16	3	2	3	1	1	3	5	7	5	4
246	85	5.6	4.01	1.68	15th	17	3	2	0	1	6	2	4	2	1	0	2	4	11	7	0
267	87	6.8	1.30	0.30	15th, 23rd	15	0	0	0	0	9	3	6	3	3	2	5	3	5	5	0
249	84	6.9	1.98	0.52	24th	12	3	2	0	4	14	0	1	2	3	4	1	8	6	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 1890.

STATIONS.	AIR TEMPERATURE.							RAINFALL.				BRIGHT SUNSHINE.	
	Means of			Absolute Extremes.				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	*	*	*	*	*	*	*	*	*	*	*	106°8	30
LAIRG	30°9	46°7	38°8	13	9th	56	16th	23	4°53	1°05	10th	—	—
GLENCARRON	33°6	46°1	39°9	21	2nd, 9th	57	16th	25	13°12	3°71	10th	?	?
FORT AUGUSTUS	34°5	47°5	41°0	21	2nd, 3rd	56	16th	23	5°91	1°31	10th	66°2	18
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	121°0	33
BRAEMAR	31°7	44°9	38°3	10	2nd	54	12th	17	3°32	0°75	15th	96°5	27
OCHTERTYRE	34°5	50°8	42°7	20	2nd, 8th	60	11th	16	2°08	0°49	24th	—	—
MARCHMONT	34°9	47°3	41°1	23	3rd	56	27th	22	2°29	0°37	20th	99°5	27
AENWICK CASTLE	37°4	47°3	42°4	20	2nd	55	10th, 27th, 28th	16	2°54	0°50	19th	—	—
DURHAM	36°1	49°7	42°9	26	3rd, 4th	62	27th	17	2°02	0°40	23rd	98°2	27
SCARBOROUGH	37°7	48°3	43°0	24	4th	58	11th, 27th, 28th	19	1°96	0°70	19th	198°2	27
YORK	*	*	*	*	*	*	*	*	*	*	*	91°8	25
HILLINGTON	35°2	49°8	42°5	6	4th	62	28th	16	3°19	1°30	19th	96°8	27
GELDESTON	35°8	50°3	43°1	15	4th	64	28th	18	2°39	0°85	19th	117°3	32
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	110°1	30
ROTHAMSTED	34°5	49°4	42°0	11	4th	63	28th	17	2°71	0°87	19th	—	—
INGATESTONE	35°1	49°8	42°5	14	4th	63	28th	17	2°18	0°68	19th	—	—
BAWTRY	35°9	50°4	43°2	21	4th	63	29th	11	1°52	0°45	20th	194°2	26
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	106°1	29
CHEADLE	35°6	48°2	41°9	21	4th	60	28th	18	1°53	0°40	23rd	—	—
CHURCHSTOKE	35°7	49°0	42°4	16	4th	60	28th	18	1°62	0°32	24th	108°4	30
HEREFORD	36°2	51°9	44°1	15	4th	60	28th	15	0°89	0°39	24th	—	—
CIRENCESTER	35°9	49°8	41°9	15	4th	59	27th, 28th	12	0°92	0°22	16th	107°0	29
OXFORD	*	*	*	*	*	*	*	*	*	*	*	102°4	28
LONDON	*	*	*	*	*	*	*	*	*	*	*	82°2	23
STRATHFIELD TURGIS-	35°0	52°3	43°7	14	4th	64	28th	19	1°28	0°27	24th	—	—
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	107°4	30
HASTINGS	37°0	48°3	42°7	17	4th	55	12th, 28th	18	2°66	0°89	19th	131°9	36
SOUTHAMPTON	37°4	51°9	44°7	20	4th	63	30th	17	1°16	0°39	24th	126°6	35
STOWELL	36°1	49°0	42°6	19	4th	58	26th	16	1°66	0°46	24th	89°8	25
LAUDALE	36°0	48°9	42°5	27	1st, 2nd, 3rd	59	12th	25	9°17	2°23	15th	—	—
GLASGOW	37°8	48°0	42°9	24	3rd	56	16th	18	2°44	0°38	8th	80°0	22
GLENLEE	33°5	48°1	40°8	18	3rd	55	27th	23	3°87	0°57	9th	—	—
DOUGLAS	38°4	48°0	43°2	28	3rd	55	11th	20	3°07	0°51	9th	133°9	37
NEWTON REIGNY	35°2	47°5	41°4	19	3rd	58	16th	22	2°55	0°36	20th	99°5	27
STONYHURST	36°3	47°3	41°8	23	3rd	56	16th	23	4°54	0°75	26th	86°2	24
BLACKPOOL	37°1	47°8	42°5	24	3rd	58	16th	16	3°60	1°33	27th	89°1	24
MANCHESTER	37°3	48°8	43°1	23	4th	58	12th, 17th, 28th	21	3°41	0°87	9th	—	—
LEANDUDNO	39°6	48°7	44°2	25	4th	57	27th, 28th	16	1°71	0°33	9th	105°3	29
LEANDOVERY	36°0	50°8	43°4	14	4th	61	28th	22	3°82	0°49	22nd	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	124°2	34
ARLINGTON	36°5	48°4	42°5	19	4th	62	29th	19	2°70	0°39	24th	—	—
CULLOMPTON	36°4	50°9	43°7	15	4th	59	26th, 27th, 30th	16	1°70	0°54	24th	115°3	32
FALMOUTH	39°7	49°0	44°4	24	4th	58	26th	16	1°66	0°51	23rd	141°7	39
PLYMOUTH	39°1	50°8	45°0	23	4th	60	27th	14	1°67	0°30	24th	127°4	35
JERSEY	*	*	*	*	*	*	*	*	*	*	*	140°8	39
LONDONDERRY	37°6	50°2	43°9	27	3rd	58	31st	23	2°60	0°90	15th	—	—
MARKEE CASTLE	35°3	50°1	42°7	17	3rd	57	27th	24	2°55	0°61	15th	102°0	28
BROOKEBOROUGH	34°8	48°9	41°9	20	2nd, 3rd	55	27th, 30th, 31st	18	3°27	1°10	15th	—	—
ARMAGH	36°9	49°6	43°3	26	3rd	56	29th	18	2°59	0°92	15th	125°3	34
EDGEWORTHSTOWN	35°6	49°9	42°8	24	3rd	57	5th	23	3°14	0°95	15th	—	—
DUBLIN	39°5	50°6	45°1	31	3rd, 9th	60	12th	17	3°69	0°98	24th	138°7	38
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	122°7	34
KILKENNY CASTLE	36°5	50°7	43°6	27	3rd, 4th, 17th	57	12th, 29th	14	3°60	1°46	15th	—	—
WATERFORD	37°1	51°3	44°2	25	4th	60	11th	18	3°96	1°40	15th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	122°8	34
KILLARNEY	33°3	50°7	44°5	22	3rd	57	31st	18	4°75	0°76	14th	—	—
FOYNES	39°7	50°0	44°9	28	2nd	57	31st	19	2°33	0°64	15th	—	—

\* For information see Table V.

† The bright sunshine values given for Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those to Loughborough at Thurcaston, and those to Dungeness at Westgate-on-Sea.

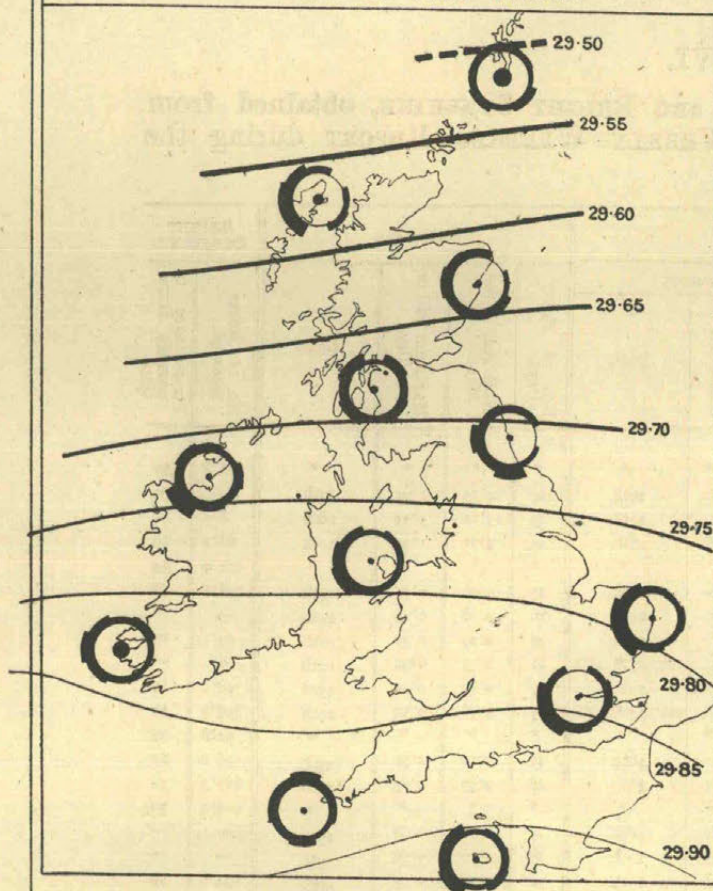


# MONTHLY WEATHER CHART. MARCH 1890.

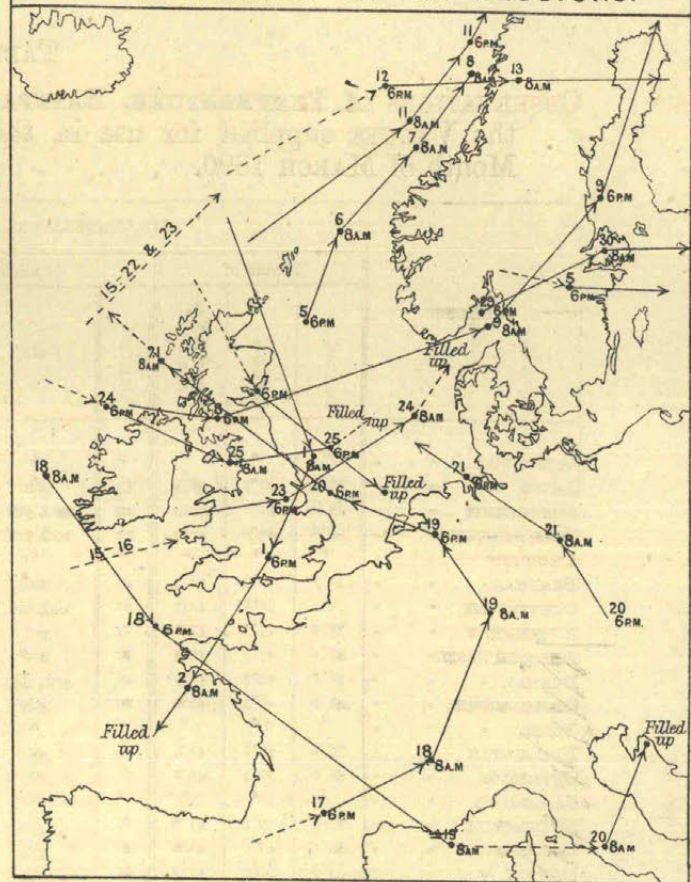
Monthly Summary

Plate III.

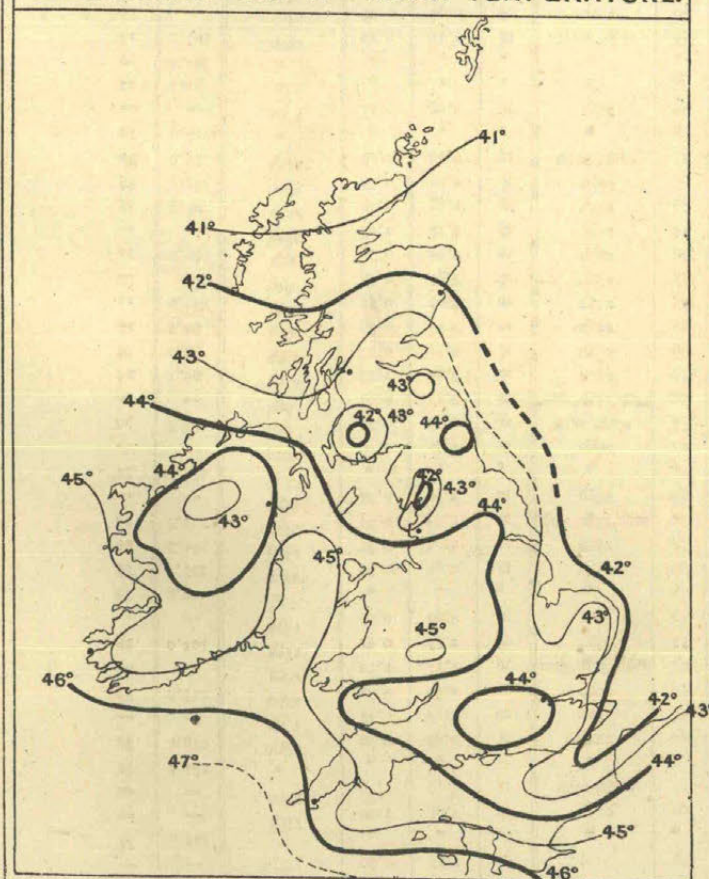
## 1. BAROMETER AND WIND.



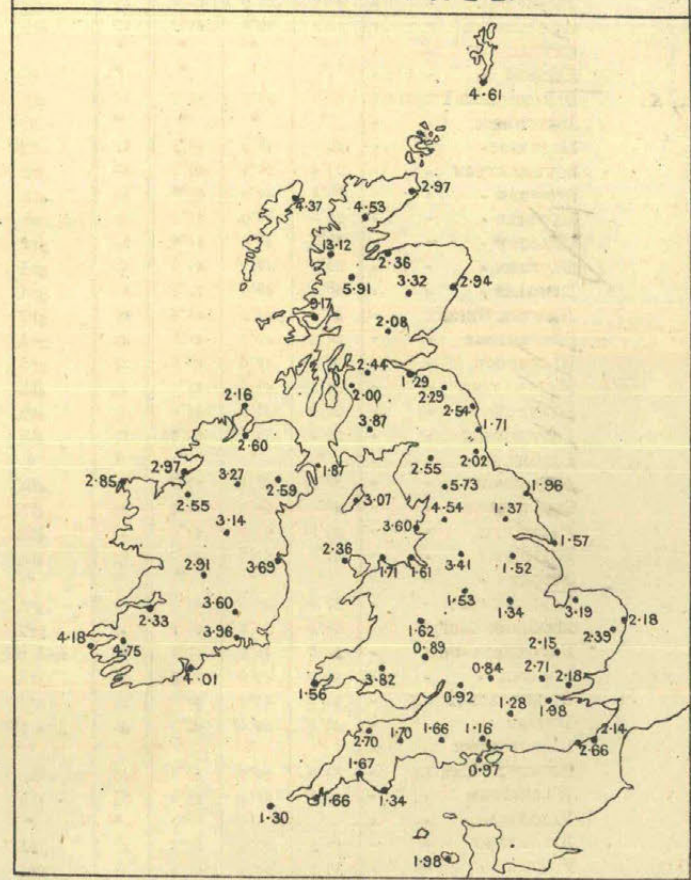
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4. RAINFALL.



To face p. xii.

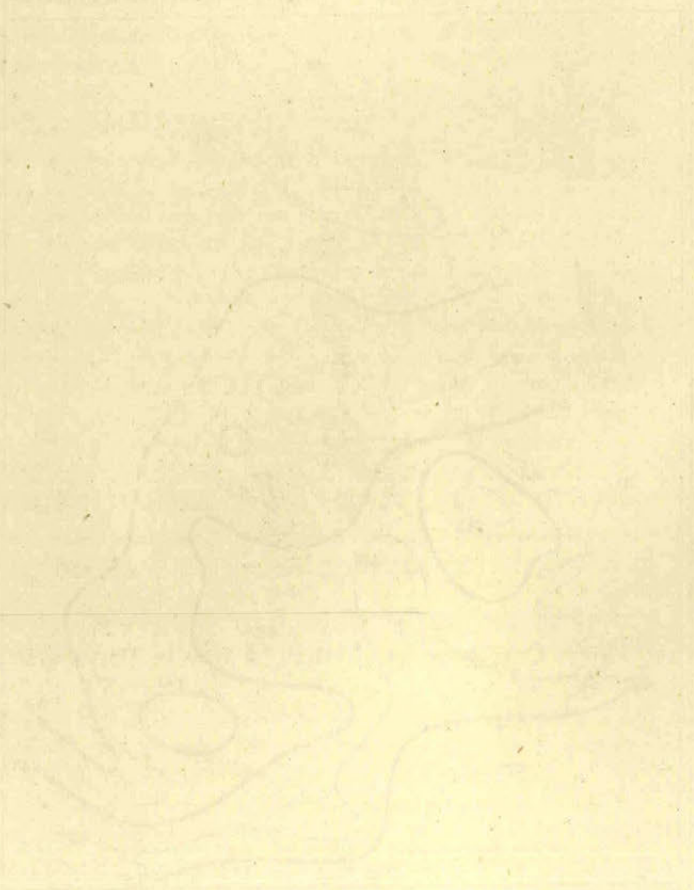


WIND VELOCITY IN MILES PER HOUR

WIND DIRECTION



DISTRIBUTION OF MEAN TEMPERATURE





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

## APRIL 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 April was dry (except in some south-western and north-western localities), rather cold, and quiet. Pressure was below the average, but very uniform; the winds were light and variable, depressions were shallow and unimportant, and sunshine was very abundant during the first week.

**Pressure.**—*Mean for the month at 8 a.m.* ranged from a trifle above 29·85 ins. at Valencia to slightly below 29·80 ins. at Scilly, and to 29·77 ins. at Sumburgh Head. Over nearly the whole of the kingdom it varied between 29·85 ins. and 29·80 ins. Gradients were therefore very slight and favourable for variable winds. The values were below the average\* for April everywhere, especially at the southern stations, where the deficiency ranged from 0·12 in. to 0·15 in. *Highest* readings were recorded very generally on the 1st, when a well-marked anticyclone was passing over us, and the highest of all exceeded 30·3 ins. *Lowest* were recorded at the northern stations on the 22nd, but over the kingdom generally on the 25th, when a very complex low-pressure system passed over, and the barometer fell to 29·2 ins. over our southern counties. *Range* was moderate—not much exceeding 1·1 ins.

**Depressions.**—There were very few depressions worth mentioning during the month, the most important being those which prevailed over the southern part of our area between the 13th and 19th, and over the northern parts between the 21st and the 25th. Of shallow ill-defined systems there were several, but these caused little wind and not much rain.

**Anticyclones.**—The only anticyclone which passed over our Islands during the month was that noticed at the beginning. This presented no features worthy of special comment, except that the minimum temperatures produced by it at the English inland stations were very low for the time of year. In England, north-east, the shade minimum was 23°, and over our midland counties 24°.

**Wind** varied greatly both in force and direction, the various systems reported being unimportant and passing over all parts of our area. At the southern and south-eastern stations, however, there was a preponderance of wind from the Northward and North-eastward. Gales were very few in number, except at Mullaghmore and Spurn Head, and in those regions they were moderate in force and local in character.

**Temperature.**—*Mean, at Sea Level*, ranged from between 48° and 49° over the extreme south-west of our Island to about 43°·5 over the northern parts of Scotland and to less than 43° in the Shetlands. It was below the average\* except in the extreme north, but the deficiency was slight except over the eastern counties of England, where it amounted to about three degrees. *Highest* values were recorded at the extreme northern and north-western stations on the 1st or 2nd, in Ireland between the 20th and 23rd, and over England on the 30th. *Lowest* were registered on very various dates, but in most cases the cold was sharpest either between the 1st and 3rd or between the 12th and 14th. *Range* was moderate in most places, but amounted to 43° at Cambridge, 42° at Loughborough, and 41° at Strathfield Turgiss and Ochertyre. *Vapour Tension* varied from 0·30 in. at Scilly, and from 0·28 in. in the extreme south-west both of Ireland and England, to 0·22 in. in the east of Scotland, and to about the same value over the north-west of England. *Relative Humidity* at 8 a.m. was as high as 92 per cent. of saturation at Stornoway and 90 at Pembroke and Hurst Castle, but was as low as 75 in the south-east of Scotland, 80 over the north-west of Ireland, and rather below 80 at Liverpool, in London, and at Jersey.

**Rainfall** varied from only 0·3 in. at Bawtry and 0·4 in. at Hillington, and from little more than half an inch at several other stations in the east and north-east of England, to rather more than 5 ins. at Valencia, to 4·4 ins. at Glencarron, and rather more than 3·5 at Stornoway, Laudale, Arlington, and Cullompton. It was much below the average over the greater part of England and the east of Ireland, but slightly in excess at certain stations in the west of Ireland and the south-western parts of Ireland and England. There were very few falls of an inch, or more, within 24 hours.

**Bright Sunshine** was considerable. It ranged from 49 per cent. of the possible duration at Douglas, Isle of Man, and upwards of 40 at several other western, southern, and south-eastern coast stations, to 30 in London and at Stonyhurst and to 29 at Stowell, Durham, and Fort Augustus. The week ending on April 5th was particularly bright and sunny, especially over the southern half of the kingdom.

\* 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

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°767	42°9	37°3	47°0	42°2	30	10th	52	2nd, 3rd, 4th
	Wick	29°794	43°7	36°8	49°9	43°4	26	12th, 13th	58	30th
	Stornoway	29°795	44°2	37°1	49°3	43°2	28	13th, 14th	56	3rd
1. SCOTLAND, E.	Nairn	29°793	42°5	35°8	52°3	44°1	24	13th	60	2nd, 3rd, 4th
	Aberdeen	29°804	43°4	37°4	49°8	43°6	28	13th	59	23rd
	Leith	29°818	44°4	37°1	53°3	45°2	28	13th	62	4th, 30th
2. ENGLAND, N.E.	Shields	29°814	42°5	36°8	49°5	43°2	30	11th	61	30th
	York	29°835	42°0	35°2	52°5	43°9	28	1st, 3rd, 11th	61	5th
	Spurn Head	29°806	43°4	39°2	48°3	43°8	34	11th, 12th	57	21st
3. ENGLAND, E.	Yarmouth	29°801	44°0	39°1	48°3	43°7	33	11th, 12th	60	22nd
	Cambridge	29°830	45°0	35°6	55°6	45°6	25	2nd	68	30th
4. MIDLAND COUNTIES	Loughborough	29°841	42°6	36°4	54°3	45°4	26	1st, 2nd	68	30th
	Oxford	29°839	42°8	37°3	53°7	45°5	28	2nd	64	30th
5. ENGLAND, S.	London	29°823	45°1	39°2	54°4	46°8	30	5th	64	30th
	Dungeness	29°798	44°9	40°1	50°5	45°3	29	12th	56	16th, 23rd, 30th
	Hurst Castle	29°824	46°1	41°5	52°7	47°1	33	5th	63	30th
6. SCOTLAND, W.	Ardrossan	29°818	44°6	39°0	52°0	45°5	32	13th	58	27th
7. ENGLAND, N.W.	Hawes Junction*	28°580	38°6	33°1	46°5	39°8	24	11th	60	30th
	Liverpool	29°838	44°3	39°7	52°0	45°9	35	2nd, 3rd, 11th, 12th.	64	30th
	Holyhead	29°835	46°1	41°5	51°8	46°7	37	3rd	64	30th
8. ENGLAND, S.W.	Pembroke	29°823	45°5	42°1	50°7	46°4	35	12th	58	30th
	Prawle Point	29°821	46°5	41°4	51°0	46°2	34	4th, 11th	58	27th
9. IRELAND, N.	Malin Head	29°801	44°1	41°1	49°7	45°4	36	12th	56	2nd
	Donaghadee	29°835	45°0	42°2	52°1	47°2	32	3rd	61	21st
	Mullaghmore	29°825	45°4	41°5	51°9	46°7	35	3rd	59	1st
	Belmullet	29°830	46°3	42°5	52°1	47°3	35	13th	56	30th
10. IRELAND, S.	Parsonstown	29°846	43°9	37°8	55°3	46°6	28	3rd	63	20th
	Valencia	29°853	48°5	43°6	53°6	48°6	36	3rd, 4th	59	14th, 17th
	Roche's Point	29°844	47°4	42°9	53°2	48°1	35	3rd, 4th	59	6th
CHANNEL ISLANDS	Scilly (St. Mary's)	29°796	48°7	44°5	51°8	48°2	40	12th	56	20th, 23rd, 29th
	Jersey	29°835	48°3	44°0	53°6	48°7	35	12th	67	30th

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



## SUMMARY OF OBSERVATIONS, APRIL 1890.

XV

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of APRIL 1890.

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.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calm.
ins.	%		ins.	in.																	
0.227	83	6.7	1.38	0.32	6th	17	2	0	0	1	12	2	8	2	1	7	2	1	4	0	5
*231	80	5.0	2.12	0.46	6th	17	2	2	0	9	7	2	9	1	1	4	5	6	2	1	1
*265	92	6.7	3.79	1.07	6th	16	0	1	0	3	13	2	2	7	2	3	6	4	4	1	1
*226	83	5.3	0.99	0.20	6th	15	3	1	0	4	4	3	3	1	5	1	3	4	6	2	5
*219	77	6.6	1.44	0.25	24th	21	4	7	0	2	9	6	2	0	3	5	4	4	3	9	0
*220	75	5.4	0.69	0.19	26th	11	1	1	2	7	7	2	3	2	6	2	1	2	9	3	2
*231	85	7.4	0.65	0.21	24th	13	1	0	0	1	9	1	2	3	1	2	3	7	3	7	2
*218	82	5.6	0.65	0.21	12th	8	1	0	0	10	11	0	9	3	6	3	3	1	3	2	0
*243	86	7.7	0.66	0.17	7th	14	1	1	0	0	14	9	6	3	4	1	3	4	2	6	1
*246	85	4.9	1.03	0.27	8th	15	2	3	0	8	0	4	2	5	6	1	1	5	1	8	1
*239	80	7.4	0.70	0.20	7th	15	0	1	1	3	17	0	8	3	5	1	3	5	0	2	3
*227	83	7.8	0.67	0.23	6th	13	0	0	1	3	18	0	4	6	3	2	2	4	2	4	3
*230	84	7.4	0.98	0.19	21st	16	0	1	1	4	18	0	4	8	3	1	3	2	2	3	4
*234	78	7.0	1.89	0.66	25th	15	1	1	0	4	14	1	4	6	5	4	2	4	2	2	1
*246	83	7.0	2.41	0.54	24th	18	1	0	0	1	9	2	5	5	8	2	0	3	3	4	0
*279	90	6.2	2.70	0.68	17th	18	0	1	0	1	5	3	2	9	7	1	1	4	4	2	0
*229	80	5.6	1.28	0.26	5th	10	0	0	0	6	11	0	2	8	4	3	1	1	4	5	2
*209	89	6.5	2.56	0.52	6th	18	6	2	0	4	15	0	7	5	5	3	0	4	1	1	4
*231	79	6.5	1.15	0.26	9th	15	0	0	1	6	13	0	2	5	4	9	2	1	5	2	0
*254	82	6.2	1.52	0.27	5th	16	0	0	0	3	10	1	5	3	6	4	4	3	3	1	1
*274	90	6.3	1.26	0.39	23rd	14	0	0	0	3	8	1	4	5	8	2	3	3	1	4	0
*279	88	6.8	2.82	0.60	24th	19	0	1	1	3	14	4	5	4	7	1	2	3	3	5	0
*245	84	6.2	1.53	0.22	23rd	17	0	0	0	7	14	3	5	0	2	7	6	4	3	2	1
*260	87	5.7	0.65	0.11	29th	16	0	0	0	3	5	0	3	5	7	2	4	3	4	2	0
*241	80	5.7	1.72	0.34	29th	14	0	3	0	8	7	11	2	4	7	5	2	3	3	4	0
*270	87	5.6	1.92	0.41	6th	18	0	0	0	7	13	3	3	3	6	5	2	4	4	3	0
*231	80	5.7	0.65	0.12	6th, 23rd	14	0	0	0	5	10	0	0	3	0	1	0	3	0	3	20
*282	83	7.5	5.03	1.57	29th	22	0	0	1	3	14	2	6	4	5	3	2	2	3	3	2
*262	81	5.5	1.74	0.25	12th, 20th, 23rd.	12	0	0	0	0	5	0	7	1	5	4	3	2	2	5	1
*299	87	7.3	1.67	0.38	23rd	19	0	0	0	0	10	3	2	3	8	2	2	4	3	6	0
*265	78	6.1	2.58	0.37	23rd	18	0	0	2	3	11	3	2	5	6	2	1	2	6	5	1

barometric 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 1890.

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	*	*	*	*	*	*	*	*	*	*	*	193.3	45
LAIRG	34.0	49.7	41.9	22	13th	62	2nd	21	2.64	0.62	22nd	—	—
GLENCARRON	34.8	50.6	42.7	27	13th, 14th	60	2nd	14	4.40	1.39	6th	?	?
FORT AUGUSTUS	35.4	51.8	43.6	24	13th	62	2nd	14	2.19	0.65	6th	124.2	29
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	180.2	43
BRAEMAR	33.1	48.4	40.8	22	14th	59	3rd, 4th	17	1.81	0.36	21st	138.4	33
OCHTERTYRE	34.9	54.3	44.6	24	13th	65	2nd	16	1.37	0.45	21st	—	—
MARCHMONT	35.5	50.3	42.9	25	13th	63	30th	16	1.07	0.20	21st	152.3	36
ALNWICK CASTLE	36.9	47.3	42.1	25	12th	56	30th	10	0.60	0.09	15th, 20th	—	—
DURHAM	34.5	51.1	42.8	28	1st, 4th, 11th	64	30th	16	0.67	0.14	25th	120.9	29
SCARBOROUGH	37.7	48.5	43.1	30	1st	60	30th	17	0.92	0.14	24th	149.5	36
YORK	*	*	*	*	*	*	*	*	*	*	*	143.1	34
HILLINGTON	35.6	52.4	44.0	26	2nd	65	30th	12	0.44	0.10	24th	156.4	38
GELDESTON	36.4	51.6	44.0	27	2nd	62	21st, 22nd	17	1.15	0.20	8th	174.3	42
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	149.4	36
ROTHAMSTED	36.4	52.7	44.6	27	13th	63	6th, 30th	16	1.23	0.24	26th	—	—
INGATESTONE	37.4	52.5	45.0	29	12th	61	22nd, 30th	11	1.26	0.41	25th	—	—
BAWTRY	35.1	52.9	44.0	24	1st	63	30th	10	0.33	0.11	8th	1129.1	31
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	1135.8	33
CHEADLE	35.8	51.0	43.4	28	4th	63	30th	18	1.36	0.22	16th	—	—
CHURCHSTOKE	34.7	52.0	43.4	26	2nd, 12th	61	5th, 30th	15	1.30	0.41	6th	138.5	33
HEREFORD	37.2	54.0	45.6	26	4th	64	30th	14	0.79	0.13	14th	—	—
CIRENCESTER	35.1	52.5	43.8	26	5th	63	30th	15	1.36	0.26	16th	133.4	32
OXFORD	*	*	*	*	*	*	*	*	*	*	*	145.3	35
LONDON	*	*	*	*	*	*	*	*	*	*	*	124.6	30
STRATHFIELD TURGISS	36.9	55.3	46.1	25	2nd, 5th	66	30th	17	1.70	0.33	23rd, 24th	—	—
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	1159.6	39
HASTINGS	40.2	51.7	46.0	33	12th	62	16th, 30th	15	2.93	0.59	24th	164.4	40
SOUTHAMPTON	39.6	55.7	47.7	31	2nd	65	15th, 30th	17	2.66	0.75	17th	177.3	43
STOWELL	38.2	52.6	45.4	29	12th	62	30th	17	3.05	0.84	24th	118.5	29
LAUDALE	37.8	53.0	45.4	30	13th	60	2nd	15	3.85	0.85	6th	—	—
GLASGOW	37.6	51.6	44.6	31	13th	61	30th	8	1.99	0.80	22nd	148.7	35
GLENLEE	34.7	51.5	43.1	24	12th	60	30th	14	1.97	0.51	21st	—	—
DOUGLAS	38.8	50.8	44.8	30	12th	59	30th	18	1.93	0.33	29th	206.1	49
NEWTON REIGNY	34.5	51.1	42.8	27	11th, 12th	63	30th	13	1.06	0.36	6th	149.4	36
STONYHURST	36.3	50.1	43.2	29	4th, 12th	61	30th	15	1.54	0.60	6th	125.0	30
BLACKPOOL	38.8	51.4	45.1	30	4th	66	30th	11	1.10	0.22	6th	152.9	37
MANCHESTER	37.4	51.8	44.6	29	4th	64	30th	15	1.03	0.41	6th	—	—
LLANDUDNO	40.5	51.5	46.0	32	12th	65	30th	11	1.09	0.23	10th	141.0	34
LLANDOVERY	36.0	55.3	45.7	27	5th, 12th	65	5th, 30th	14	2.07	0.47	6th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	182.6	44
ARLINGTON	38.8	51.3	45.1	29	4th	62	30th	16	3.69	0.56	23rd	—	—
CULLOMPTON	38.4	54.7	46.6	27	12th	63	30th	21	3.76	1.23	24th	155.7	38
FALMOUTH	43.2	51.8	47.5	35	12th	57	20th, 22nd	17	3.10	0.64	24th	170.4	42
PLYMOUTH	42.4	55.3	48.9	33	12th	66	30th	18	3.00	0.68	24th	175.8	43
JERSEY	*	*	*	*	*	*	*	*	*	*	*	179.3	44
LONDONDERRY	38.8	54.4	46.6	32	14th	62	1st, 3rd	16	1.71	0.29	9th, 25th	—	—
MARKREE CASTLE	36.7	53.2	45.0	26	3rd, 4th	60	1st	16	1.86	0.34	29th	144.1	34
BROOKEBOROUGH	36.2	53.0	44.6	26	3rd	60	1st, 3rd	16	1.17	0.17	6th	—	—
ARMAGH	36.7	53.5	45.1	26	3rd	59	1st, 3rd, 4th, 21st, 27th, 29th, 30th	16	1.26	0.14	9th	170.0	41
EDGEWORTHSTOWN	36.9	53.8	45.4	29	4th, 12th, 25th	60	20th	17	1.34	0.24	25th	—	—
DUBLIN	40.7	53.9	47.3	31	3rd	64	20th	14	1.58	0.44	15th	184.0	44
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	178.3	43
KILKENNY CASTLE	38.9	55.1	47.0	28	3rd	63	20th	16	1.10	0.25	23rd	—	—
WATERFORD	40.2	55.1	47.7	29	4th	61	21st	15	1.30	0.28	23rd	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	164.0	40
KILLARNEY	41.2	54.6	47.9	31	3rd	65	2.1th	20	2.49	0.37	29th	—	—
FOYNES	41.2	54.3	47.8	32	2nd, 3rd	67	20th	18	1.42	0.28	6th	—	—

\* For information see Table VII.

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

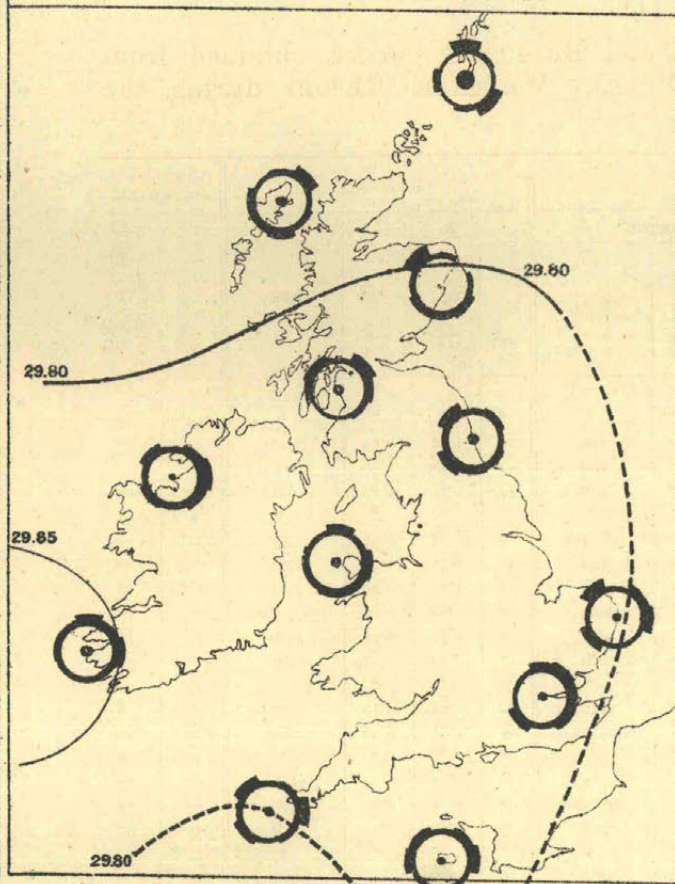


# MONTHLY WEATHER CHART, APRIL, 1890.

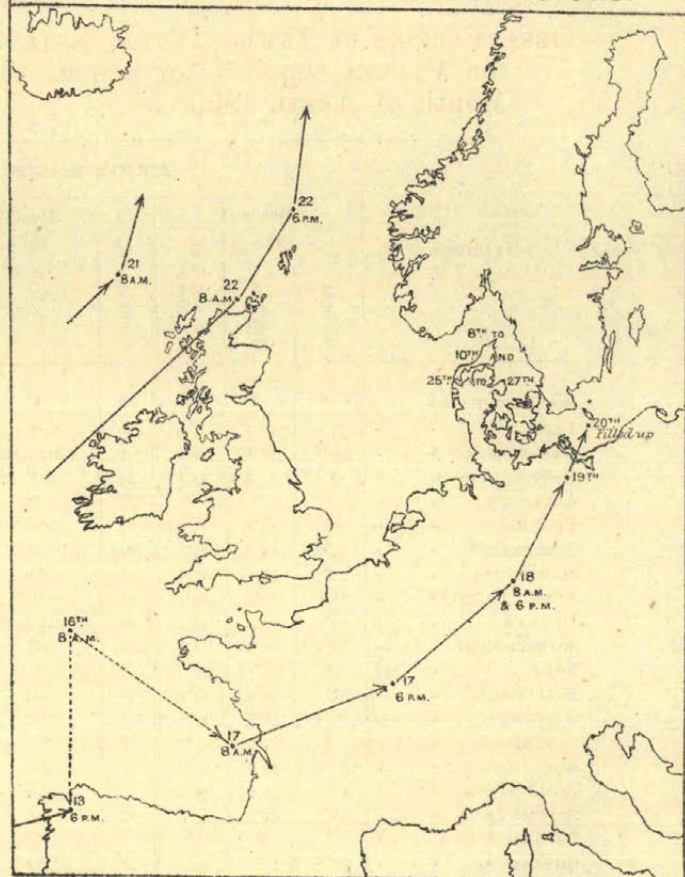
Monthly Summary.

Plate IV.

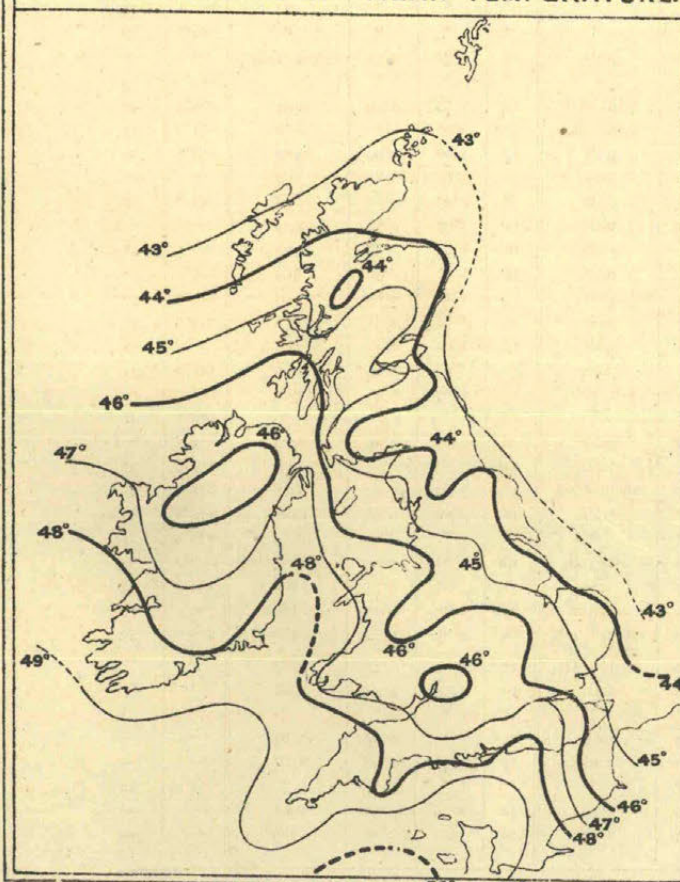
## 1. BAROMETER AND WIND.



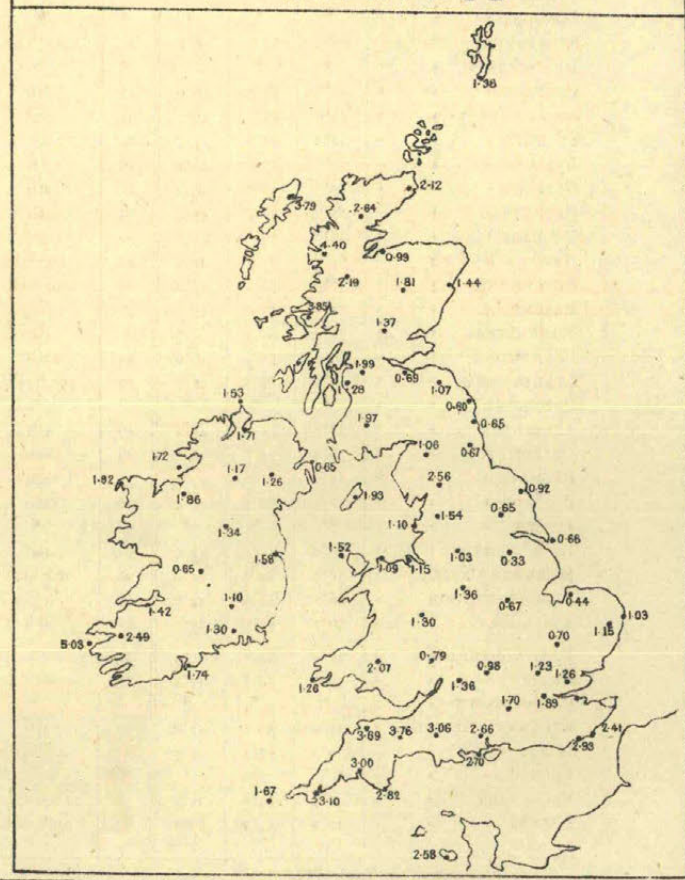
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.

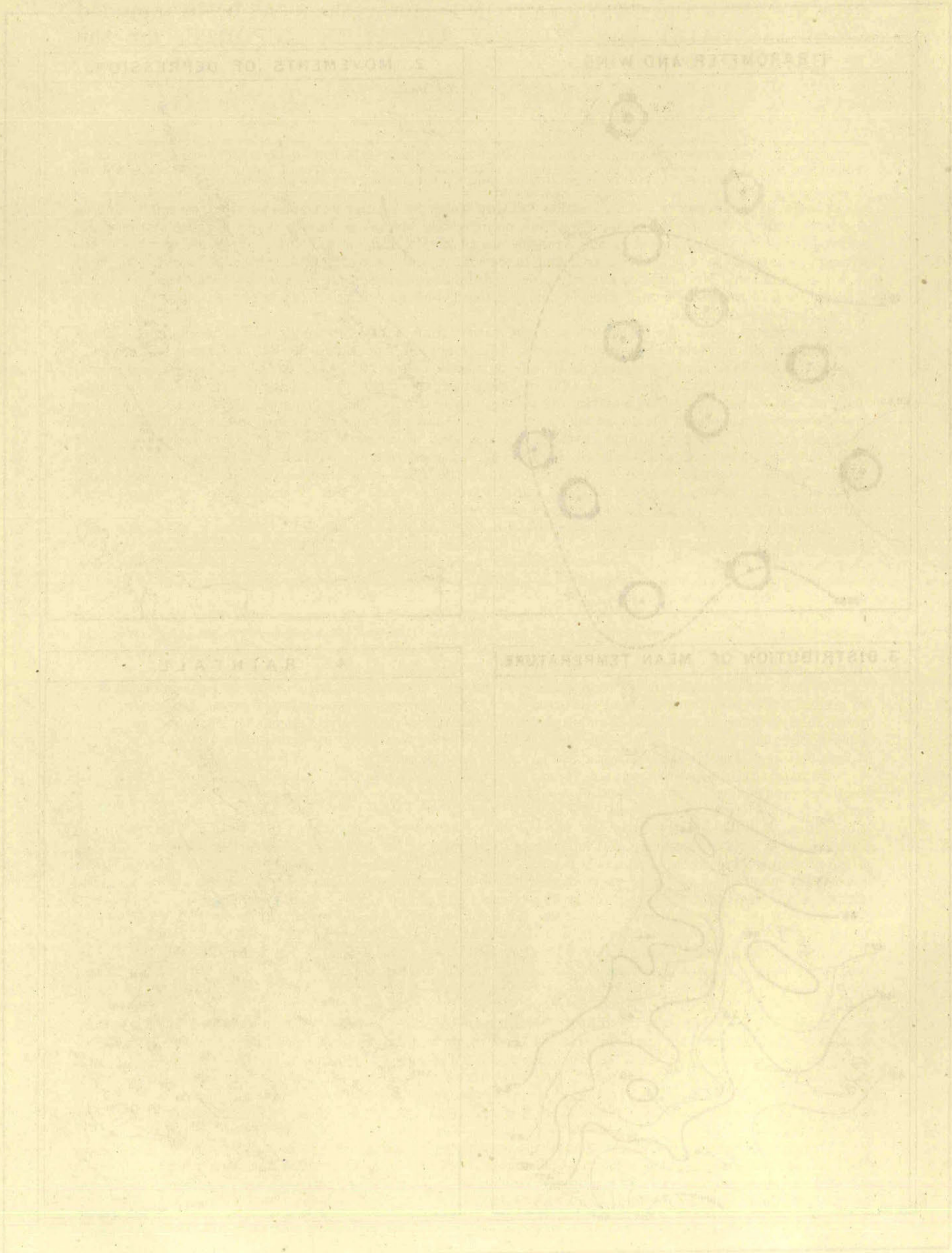


## 4. RAINFALL.



To face p. XVI.







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

## MAY 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 very changeable and unsettled, especially during the earlier half of the period. Thunderstorms occurred on several occasions at the English stations, and snow showers were experienced in the extreme north of Scotland on the 30th. Pressure was below the average; temperature was in excess excepting in the south; and the winds, although somewhat variable, were as a rule from some Northerly or Easterly point. Rainfall was less than the average in the south-east of England and in isolated parts of Ireland and Scotland, but more elsewhere; bright sunshine was, upon the whole, fairly abundant.

**Pressure.**—*Mean for the Month at 8 a.m.* varied from a little above 29·86 ins. in the north-east of Scotland, 29·85 ins. over the Midland counties of England, and from about 29·84 ins. on the east coasts of England to 29·75 ins. in the Scilly Islands and to a little below 29·74 ins. in the south-west of Ireland. The distribution was therefore of an abnormal character, the mean gradient being favourable for winds from the Southward and South-eastward instead of those from a Westerly point. The values were below the average\* in all places, the deficit varying from less than one tenth of an inch in the north and east of Scotland and from about 0·15 inch in the north and east of England and the north of Ireland, to about 0·23 inch in the extreme south-west of our Islands. *Highest* values were recorded very generally on the 22nd, when the barometer rose to 30·3 ins. and more in the south-east of England and to 30·1 ins. and more in all other parts of the kingdom. *Lowest* values were observed as a rule on the 11th, when the mercury fell to between 29·4 ins. and 29·6 ins. in all parts of the kingdom.

**Depressions** were fairly numerous, but of no great depth. Their centres travelled as a rule in a northerly and north-westerly direction, but on the 9th and 10th a small disturbance moved westwards from Belgium across the south of England to our south-west coasts, while on the 4th and 5th a shallow system, after advancing eastwards to the Channel Islands, re-curved and travelled away again in a westerly direction to the Atlantic.

**Anticyclones.**—Two only were observed, and these did not appear until the concluding part of the month. The first spread northwards from France on the 21st and ultimately passed away to the northward of our Islands. The second extended over us from the north-westward on the 27th, and finally moved in a southerly direction to France and the Bay of Biscay.

**Wind** varied greatly in direction, but at the majority of our stations there was a slight preponderance of breezes from the Eastward and Northward. At Scilly, however, winds from between South and West were fairly numerous, while at Sumburgh Head, Shields, Holyhead, and Valencia there was a large proportion of calm. Scarcely any gales were reported in the northern, eastern, and southern parts of the kingdom, but at Pembroke there were five and at Mullaghmore eight.

**Temperature.**—*Mean at Sea Level* varied from between 55° and 57° in some parts of our southern counties, and from 54° and more over the inland parts of England generally, to 51° or less over central Scotland and the north-west of Ireland, and to 49° and less in the Shetlands. The general distribution did not differ greatly from the normal, but the values were above the average,\* excepting in isolated parts of our southern districts, where they were either equal to or a little below the normal. *Highest* values were recorded as a rule between the 22nd and 24th, when the thermometer rose to 70°, or more, very generally, and to 75°, or more, at several of the inland stations. *Lowest* values were observed either at the very commencement or at the extreme end of the month, when slight frost was experienced in many parts of the country. *Range* was somewhat large, especially in the more central districts; at Cambridge it amounted to 44°, at Braemar to 45°, and at Llandoverly to 48°. *Vapour Tension* ranged from 0·36 inch at Hurst Castle and 0·35 inch at Stornoway, Scilly, and Jersey to 0·29 inch at Aberdeen and 0·28 inch at Hawes Junction. *Relative Humidity* was as high as 95 per cent. at Stornoway and 90 per cent. at Pembroke. At Belmullet, however, the per-centage was only 78, at Cambridge 75, and in London 74, while at Liverpool it was as low as 72.

**Rainfall** varied greatly in different localities. In the south-east of England, and in some parts of Ireland and Scotland the total fall was less than an inch and a half, the smallest amounts of all being 0·58 in. at Stornoway, 0·95 in. at Mullaghmore, and 1·0 in. at Dungeness. In the extreme south-west of the kingdom, however, the aggregate fall was much larger, Falmouth reporting 4·8 ins., Roches Point 5·1 ins., and Valencia 5·2 ins. In the localities first named the amounts were considerably less than the average,\* but in nearly all other places there was a marked excess, the fall at Scilly being more than twice the normal.

**Bright Sunshine** was fairly abundant, excepting in Scotland, where the values were a little below the average. The per-centage of the possible amount of duration at Dungeness and Jersey was as high as 53, and at Geldeston 54, while at Hastings it reached 56. At Durham, however, the per-centage value was only 31, while at Fort Augustus it was as low as 20.

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



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.							
			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° 868	48° 8	43° 4	53° 0	48° 2	35	30th	61	5th, 22nd
	Wick - - -	29° 860	50° 2	43° 2	55° 7	49° 5	36	30th, 31st	68	22nd
	Stornoway - - -	29° 821	50° 9	44° 1	56° 5	50° 3	35	30th, 31st	70	24th
1. SCOTLAND, E.	Nairn - - -	29° 841	50° 2	43° 9	58° 6	51° 3	33	2nd	71	22nd
	Aberdeen - - -	29° 866	49° 3	44° 0	55° 0	49° 5	38	3rd, 31st	72	22nd
	Leith - - -	29° 844	50° 8	44° 5	57° 7	51° 1	37	31st	71	28th
2. ENGLAND, N.E.	Shields - - -	29° 845	49° 7	44° 1	55° 1	49° 6	34	31st	64	13th, 22nd
	York - - -	29° 849	51° 7	43° 7	63° 2	53° 5	34	2nd	74	24th
	Spurn Head - - -	29° 835	51° 4	46° 3	55° 6	51° 0	40	2nd	63	21st
3. ENGLAND, E.	Yarmouth - - -	29° 839	52° 2	46° 1	56° 9	51° 5	36	3rd	63	17th
	Cambridge - - -	29° 845	54° 6	43° 1	65° 5	54° 3	34	2nd	78	24th
4. MIDLAND COUNTIES	Loughborough - - -	29° 852	53° 0	43° 5	64° 7	54° 1	36	1st	78	24th
	Oxford - - -	29° 848	52° 1	44° 1	62° 9	53° 5	36	31st	76	24th
5. ENGLAND, S.	London - - -	29° 840	54° 1	46° 2	64° 4	55° 3	40	3rd, 31st	77	24th
	Dungeness - - -	29° 823	53° 5	47° 8	59° 0	53° 4	36	31st	65	13th, 14th, 25th
	Hurst Castle - - -	29° 840	54° 1	48° 9	61° 4	55° 2	40	31st	73	24th
6. SCOTLAND, W.	Ardrossan - - -	29° 819	51° 9	45° 7	59° 2	52° 5	35	31st	71	24th
7. ENGLAND, N.W.	Hawes Junction* - - -	28° 608	48° 1	41° 5	56° 6	49° 1	33	28th, 31st	68	24th
	Liverpool - - -	29° 832	53° 4	47° 2	61° 3	54° 3	42	2nd, 27th	74	24th
	Holyhead - - -	29° 814	53° 6	47° 7	59° 1	53° 4	44	14th	71	24th
8. ENGLAND, S.W.	Pembroke - - -	29° 793	51° 6	47° 8	56° 3	52° 1	43	31st	72	24th
	Prawle Point - - -	29° 814	52° 2	48° 3	56° 1	52° 2	43	3rd	67	25th
9. IRELAND, N.	Malin Head - - -	29° 785	50° 0	46° 8	55° 9	51° 4	40	3rd	69	23rd
	Donaghadee - - -	29° 829	51° 1	48° 5	57° 8	53° 2	45	2nd	66	24th, 25th
	Mullaghmore - - -	29° 783	50° 8	46° 5	57° 6	52° 1	40	3rd	69	23rd, 25th
	Belmullet - - -	29° 766	52° 5	47° 2	57° 3	52° 3	38	31st	75	25th
10. IRELAND, .	Parsonstown - - -	29° 784	51° 7	44° 5	60° 5	52° 5	32	31st	74	24th
	Valencia - - -	29° 735	52° 7	47° 2	57° 6	52° 4	40	1st	71	24th
	Roche's Point - - -	29° 758	52° 8	47° 5	57° 4	52° 5	42	13th	67	24th
CHANNEL ISLANDS	Scilly (St. Mary's) - - -	29° 751	52° 9	48° 7	55° 9	52° 3	45	1st, 3rd, 5th	60	11th, 15th
	Jersey - - -	29° 838	55° 5	49° 3	61° 4	55° 4	44	12th	75	24th

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



REPORTING STATIONS in the BRITISH ISLANDS during the Month of MAY 1890.

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.
in.	%		ins.	ins.																	
0.296	86	7.0	1.60	0.38	16th	16	0	0	0	0	12	0	3	8	4	6	3	1	0	2	4
315	87	6.9	2.27	0.30	16th, 18th	23	0	1	2	7	17	0	5	1	4	6	11	1	1	2	0
352	95	7.7	0.58	0.08	31st	14	1	1	0	2	19	0	3	1	10	4	4	4	1	1	3
307	85	7.0	0.83	0.21	5th	15	0	1	0	3	14	1	0	1	13	1	1	4	3	2	6
290	83	7.1	3.26	0.80	11th	21	0	1	0	0	12	1	6	2	4	5	5	2	3	4	0
296	86	7.1	1.49	0.33	11th	18	0	2	1	2	13	0	2	6	11	0	2	2	4	2	2
308	87	7.9	1.75	0.45	11th	12	0	0	0	1	15	0	5	5	1	3	4	2	1	6	4
305	80	5.7	2.04	0.33	10th	13	0	0	2	11	12	0	6	5	7	3	6	0	3	1	0
316	83	6.4	2.12	0.62	10th	13	0	0	1	5	11	0	3	8	2	3	5	2	1	3	4
321	82	3.5	1.15	0.42	10th	9	0	0	2	14	0	0	5	4	6	1	7	1	2	4	1
317	75	5.8	1.61	0.70	10th	9	0	0	1	4	10	0	7	6	1	2	7	3	0	5	0
311	77	6.4	1.75	0.43	11th	11	0	0	2	3	8	0	4	6	4	6	3	2	3	3	0
302	77	5.2	1.69	0.60	9th	11	0	0	3	13	11	0	2	11	2	5	5	1	2	3	0
309	74	6.4	1.29	0.42	9th	13	0	0	1	8	13	0	3	2	9	6	4	2	2	3	0
335	82	6.4	1.02	0.30	9th	11	0	0	1	0	7	0	3	6	6	3	1	4	6	1	1
356	84	4.9	2.11	0.73	19th	8	0	0	0	4	1	2	1	8	7	1	3	6	4	1	0
316	82	6.5	3.19	0.84	16th	16	0	0	2	5	15	0	1	14	3	2	5	1	2	2	1
284	85	6.3	3.47	0.96	16th	14	0	0	2	5	14	0	2	6	9	3	3	7	1	0	0
295	72	5.3	1.64	0.37	19th	14	0	0	2	8	7	0	0	5	7	11	1	1	3	3	0
315	76	5.1	2.54	1.18	16th	19	0	0	2	2	6	0	2	2	8	4	4	4	1	3	3
343	90	6.1	3.15	0.88	16th	20	0	0	1	0	7	5	0	2	6	12	5	1	1	4	0
337	86	6.1	1.66	0.55	4th	11	0	0	1	3	12	1	1	6	6	6	4	5	2	1	0
304	85	6.8	1.15	0.36	29th	15	0	0	0	5	17	0	1	1	7	11	5	2	2	2	0
330	87	6.7	2.00	0.46	16th	18	0	0	0	1	11	0	1	7	7	5	1	5	2	3	0
292	79	6.9	0.95	0.38	29th	16	0	1	0	3	10	8	2	5	10	3	4	4	2	1	0
310	78	6.7	2.56	0.35	29th	23	0	1	2	7	18	1	2	5	9	7	2	4	2	0	0
314	82	7.1	1.45	0.17	10th	19	0	0	1	3	14	0	0	2	1	8	0	3	0	1	16
326	82	7.8	5.23	0.80	18th	26	0	1	2	1	16	2	4	1	6	5	1	6	1	2	5
323	80	6.7	5.12	0.50	20th	22	0	2	2	0	9	2	5	1	9	5	4	4	3	0	0
353	88	8.0	4.20	0.57	19th	21	0	0	1	0	16	1	0	2	5	4	8	6	4	2	0
349	79	5.2	2.43	0.64	19th	16	0	2	2	4	7	2	1	5	6	6	2	4	3	3	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 1890.

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	*	*	*	*	*	*	*	*	*	*	*	226.7	44
LAIRG	41.9	59.0	50.5	34	2nd, 4th, 30th	76	24th	13	1.14	0.18	16th	—	—
GLENCARRON	43.0	59.9	51.5	34	31st	77	24th	14	2.85	0.50	30th	?	?
FORT AUGUSTUS	43.7	57.4	50.6	35	2nd	67	22nd	16	1.79	0.33	29th	102.9	20
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	172.6	34
BRAEMAR	40.3	57.7	49.0	28	2nd	73	25th	18	2.16	0.55	5th	158.8	32
OCHTERTYRE	42.7	61.1	51.9	34	1st	74	28th	13	2.07	0.95	16th	—	—
MARCHMONT	42.1	57.6	49.9	34	31st	69	23rd	15	1.84	0.45	16th	174.5	35
ALNWICK CASTLE	43.7	54.9	49.3	35	1st, 3rd	64	22nd	12	2.23	0.58	11th	—	—
DURHAM	42.7	59.4	51.1	35	1st, 4th, 31st	75	22nd	16	2.33	0.45	7th	152.8	31
SCARBOROUGH	44.3	56.0	50.2	37	2nd	71	22nd	15	2.61	0.77	10th	184.5	38
YORK	*	*	*	*	*	*	*	*	*	*	*	190.4	39
HILLINGTON	43.0	63.4	53.2	33	31st	74	24th	12	1.82	0.66	10th	237.5	49
GELDESTON	43.3	61.5	52.4	32	3rd	69	19th	10	1.52	0.72	9th	262.5	54
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	230.9	48
ROTHAMSTED	42.1	62.1	52.1	35	4th	75	24th	14	1.34	0.46	9th	—	—
INGATESTONE	44.0	62.1	53.1	35	31st	72	24th, 25th	11	2.21	0.90	10th	—	—
BAWTRY	42.5	64.6	53.6	33	1st	76	25th	12	2.61	0.53	11th	198.1	41
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	221.8	46
CHEADLE	43.6	60.4	52.0	35	31st	73	24th	11	2.10	0.58	19th	—	—
CHURCHSTOKE	41.8	60.2	51.0	33	1st	72	24th	17	3.36	0.64	2nd	189.1	39
HEREFORD	45.1	62.9	54.0	37	31st	75	24th	14	1.84	0.65	19th	—	—
CIRENCESTER	42.3	60.9	51.6	32	31st	74	24th	12	2.31	0.84	9th	228.6	47
OXFORD	*	*	*	*	*	*	*	*	*	*	*	232.6	48
LONDON	*	*	*	*	*	*	*	*	*	*	*	206.7	43
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	253.5	53
STRATHFIELD TURGIS	43.1	65.0	54.1	35	31st	78	24th	12	2.18	0.78	9th	—	—
HASTINGS	47.4	61.3	54.4	38	31st	73	24th, 25th	14	1.89	0.68	10th	269.3	56
SOUTHAMPTON	47.3	64.6	56.0	38	31st	81	25th	8	1.69	0.69	9th	245.5	51
STOWELL	45.1	61.0	53.1	37	8th	76	24th	12	1.64	0.59	9th	?	?
LAUDALE	45.6	61.2	53.4	39	31st	74	24th	15	2.51	0.50	29th	—	—
GLASGOW	45.4	58.8	52.1	38	31st	71	23rd	15	2.87	0.77	16th	177.5	36
GLENLEE	42.5	60.3	51.4	33	2nd, 26th, 27th	72	24th	18	4.01	1.11	16th	—	—
DOUGLAS	46.0	58.0	52.0	39	19th	69	24th	18	3.40	1.25	16th	244.1	50
NEWTON REIGNY	42.1	59.9	51.0	34	28th	70	23rd, 24th	14	2.45	0.63	11th	214.0	43
STONYHURST	44.6	60.1	52.4	37	27th, 28th	71	24th	13	2.56	0.80	29th	206.2	42
BLACKPOOL	45.9	61.4	53.7	38	27th	74	24th	16	2.51	0.46	16th	187.2	38
MANCHESTER	45.0	61.1	53.1	36	31st	72	24th	11	2.37	0.66	29th	—	—
LLANDUDNO	46.9	59.8	53.4	43	27th	74	24th	12	1.91	0.42	16th	179.8	37
LLANDOVERY	43.8	64.0	53.9	29	31st	77	24th	15	1.96	0.31	19th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	192.3	40
ARLINGTON	44.9	59.9	52.4	38	3rd, 8th, 28th, 31st.	74	24th	16	2.75	0.63	9th	—	—
CULLOMPTON	45.1	62.4	53.8	35	8th	78	24th	14	2.57	1.08	25th	209.9	44
FALMOUTH	47.7	57.2	52.5	42	3rd	67	25th	18	4.83	1.13	4th	190.3	40
PLYMOUTH	48.9	63.8	56.4	44	3rd	76	24th	12	1.88	0.53	3rd	201.7	43
JERSEY	*	*	*	*	*	*	*	*	*	*	*	247.1	53
LONDONDERRY	45.4	62.8	54.1	36	3rd	79	25th	17	1.76	0.69	29th	—	—
MARKREE CASTLE	42.0	59.3	50.7	29	31st	72	25th	17	1.37	0.32	29th	202.7	41
BROOKBOROUGH	43.1	59.7	51.4	32	31st	72	24th, 25th	13	2.15	0.57	3rd	—	—
ARMAGH	44.4	59.5	52.0	34	3rd	70	24th, 25th	17	1.43	0.36	29th	224.4	46
EDGEWORTHSTOWN	43.1	59.5	51.3	33	3rd	71	23rd	22	2.06	0.45	3rd	—	—
DUBLIN	47.2	59.2	53.2	39	31st	66	23rd	17	2.44	0.46	3rd	233.8	48
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	186.2	38
KILKENNY CASTLE	45.1	59.5	52.3	35	31st	71	24th	22	2.71	0.46	17th	—	—
WATERFORD	45.9	59.6	52.8	36	3rd	72	24th	18	3.19	0.50	17th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	157.3	33
KILLARNEY	44.2	58.9	51.6	36	1st, 13th	72	25th	26	4.02	0.76	2nd	—	—
FOYNES	46.1	59.4	52.8	39	2nd	74	24th, 25th	22	2.69	0.43	17th	—	—

\* For information see Table IX.

† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those entered to Loughborough at Thurstaston, and those entered to Dungeness at Westgate-on-Sea. The values for Stowell are doubtful.

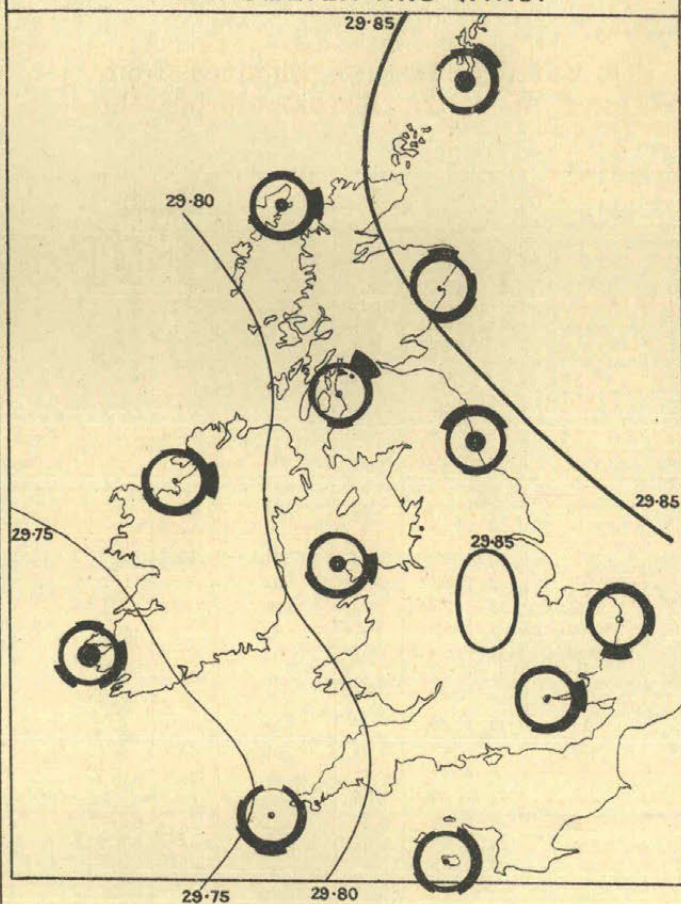


# MONTHLY WEATHER CHART, MAY, 1890.

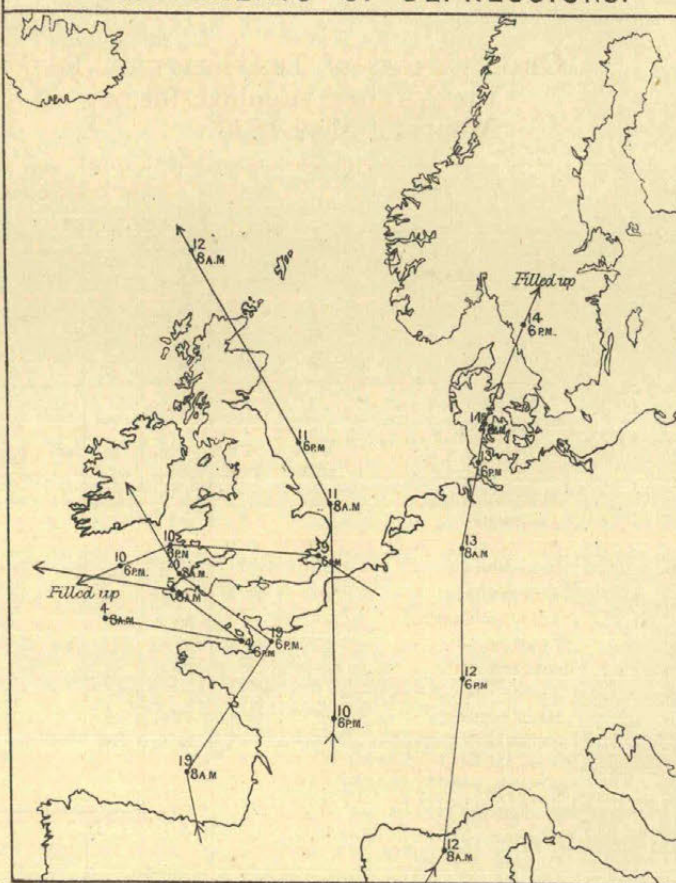
Monthly Summary.

Plate V.

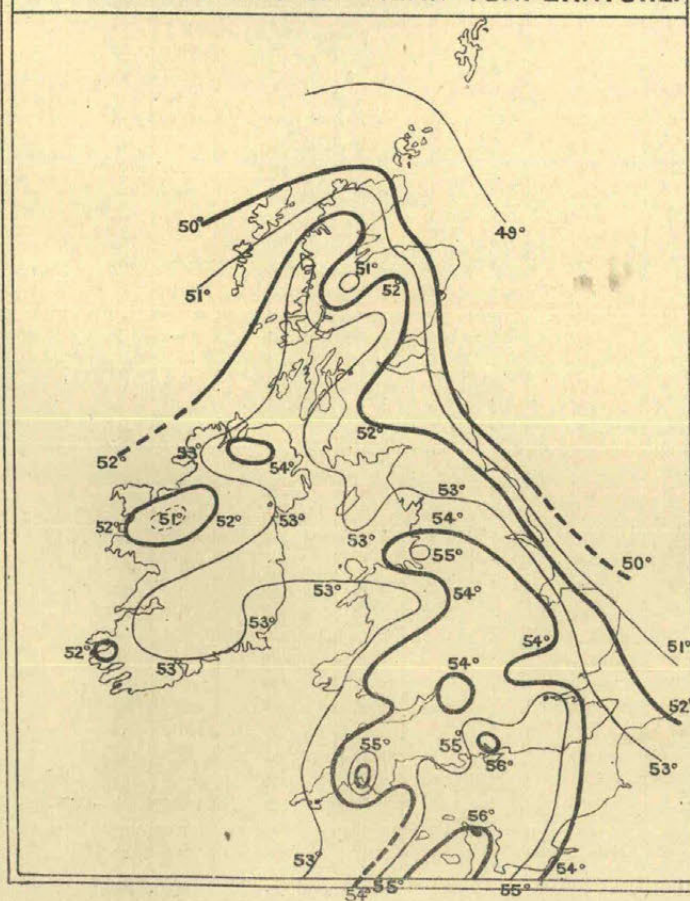
## 1. BAROMETER AND WIND.



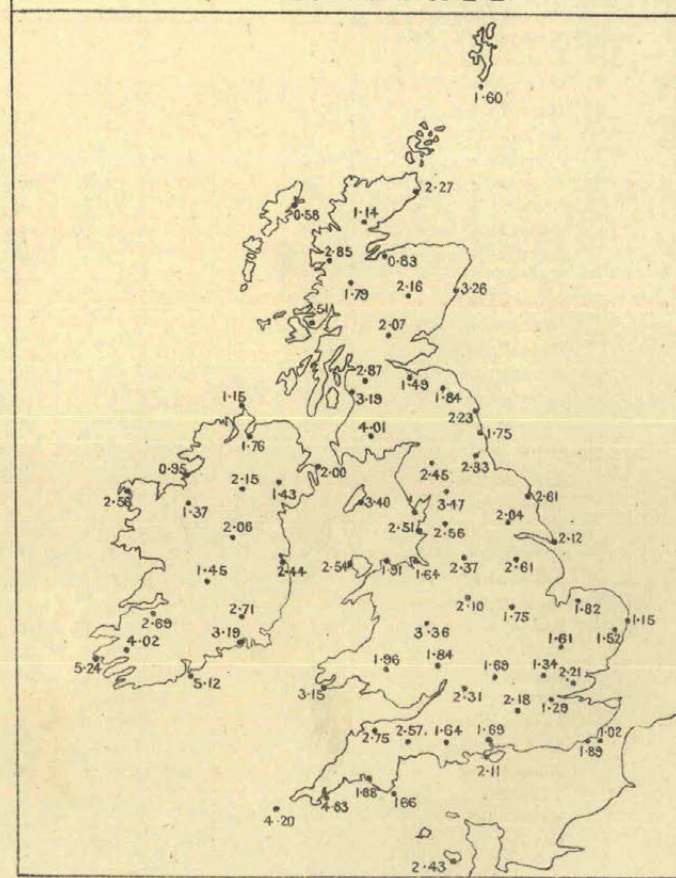
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4. RAINFALL.





1. POSITION OF DEPRESSION

2. WIND AND WIND

3. DISTRIBUTION OF MEAN TEMPERATURE

4. MEAN



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

## JUNE 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 June was very changeable and unsettled. Dense fogs occurred at times over the English and Bristol Channels; thunderstorms were frequent over England, and a destructive gale from the westward occurred in the north of Scotland on the 25th of the month. Pressure was below the average in the north but above it in the south; the wind was chiefly Westerly; temperature was below the normal in all districts excepting Central Scotland and the east of Ireland; rainfall was in excess of the average in most places, but in defect over Central England, the north-east of Scotland, and the east of Ireland; bright sunshine was very deficient in all parts of the kingdom.

**Pressure.**—*Mean for the month at 8 a.m.* ranged from 30·05 ins. and upwards over the English Channel to a little below 29·80 ins. in the Shetland Islands, the intervening gradients being fairly uniform. Its general distribution differed very little from the normal; but as the readings in the far north were about a tenth of an inch below the average,\* while those in the south were at least half a tenth above, the mean gradient was steeper than usual. *Highest* readings were recorded on the 14th, when the barometer rose to between 30·3 ins. and 30·4 ins. in all parts of the United Kingdom. *Lowest* readings were observed pretty generally on the 30th, when the mercury fell to between 29·1 ins. and 29·5 ins. *Range* was moderate.

**Depressions.**—Numerous depressions travelled in a north-easterly direction outside our western and northern coasts at too great a distance for their tracks to be shown on Map 2; the most important system was that of the 25th, the track of which is given. Between the 11th and 12th a complex system passed across Ireland and England in an east-south-easterly direction, and at the close of the month another disturbance pursued a very similar course. Both depressions filled up on reaching the Netherlands.

**Anticyclones.**—Two only were observed. The first advanced over our islands from the westward on the 6th and 7th, and afterwards travelled south-eastwards to the continent. The second also advanced from the westward, on the 13th and 14th, but afterwards receded southwards to the Bay of Biscay and France. On the 19th, however, it spread northwards again, and remained over a considerable portion of the United Kingdom until the 24th, when it finally passed away in a southerly direction.

**Wind** was chiefly from some Westerly point. At our northern and eastern stations there was a fair proportion of breezes from the eastward, but in the western and south-western districts the winds from this quarter were scarcely represented at all. Gales were somewhat numerous for the time of year in the extreme west and north-west; at Stornoway there were four and at Mullaghmore six. At the majority of our eastern and southern stations, however, there was only one, and in some places there were none at all.

**Temperature.**—*Mean, at Sea Level*, ranged from about 59° in various parts of England to about 50° in the Shetland Islands. In Ireland and in central Scotland local maxima of temperature will be seen on Plate VI. The general distribution was of the usual summer type, and agreed fairly well with the normal, but the actual values were below the average\* in all districts excepting Central Scotland and the east of Ireland, the deficit being as much as two degrees over some of the central and south-eastern parts of England. *Highest* values were recorded on somewhat irregular dates. At the majority of our stations they occurred either on the 10th or 15th, but in the east and south of England the warmest weather was experienced on the 24th or 25th. *Lowest* values were observed over England as a rule on the 1st, but in Ireland the actual minima occurred mainly on the 7th, and in Scotland on the 8th. *Range* was somewhat large at the English inland stations; at Geldeston it amounted to 41°, at Cirencester and Llandovery to 42°, and at Strathfield Turgiss to 44°. At Jersey the extreme range was as much as 35°, but at Scilly only 11°. *Vapour Tension* varied from less than 0·32 in. in the Shetlands and east of Scotland to 0·38 in. or more over the southern parts of the kingdom generally, and to 0·42 in. in the Scilly Islands. *Relative Humidity* was below 80 per cent. over the eastern parts of Great Britain and below 75 per cent. in the east of Scotland. At Parsonstown, however, it was as high as 90, at Stornoway and Pembroke 93, and at Scilly 94, per cent.

**Rainfall** was less than the average\* over the central parts of England, the north-east of Scotland, and the east of Ireland, the actual amounts in these regions varying from an inch and a half to two inches. In other localities there was a decided excess above the normal, the aggregate fall being above 3 ins. in most places, and as large as 7·7 ins. at Laudale, 7·6 ins. at Glencarron, 6·1 ins. at Valencia, and 5·8 ins. at Glenlee. The number of rainy days was large in all the western and northern districts; at Stornoway, Laudale, Arlington, Londonderry, Mullaghmore, and Valencia there were 24 days with rain, at Glencarron, Fort Augustus, and Foynes 25, at Lairg, Hawes Junction, and Markree Castle 26, and at Llandovery 28.

**Bright Sunshine** was very deficient, the per-centage of the possible amount of duration being below 30 at a large majority of our stations. At York the value was only 20, while at Fort Augustus it was as low as 15. The highest per-centages were 40 at Jersey, 35 at Falmouth, and 34 at Geldeston and Hastings.

\* The averages employed are—*Pressure and Temperature* for the 20 years, 1861–80; *Rainfall* for the 20 years, 1866–85.  
[Price Sixpence.] E 64953. 350.—12/90. Wt. 213. E. & S.



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

NAMES OF DISTRICTS.	NAMES OF STATIONS.	Mean Height of Barometer (at 8 a.m.) 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° 797	50° 7	45° 2	54° 3	49° 8	40	1st	58	5th, 24th
	Wick	29° 817	53° 9	44° 2	58° 5	51° 4	36	15th	63	20th, 23rd
	Stornoway	29° 809	52° 8	46° 2	57° 3	51° 8	35	8th	64	10th
1. SCOTLAND, E.	Nairn	29° 830	54° 4	47° 6	61° 8	54° 7	36	15th	60	10th, 23rd
	Aberdeen	29° 860	55° 0	47° 0	60° 8	53° 9	37	8th	60	4th, 23rd
	Leith	29° 881	55° 8	47° 8	62° 7	55° 3	39	8th	70	10th
2. ENGLAND, N.E.	Shields	29° 908	55° 6	48° 1	61° 6	54° 9	40	1st, 15th	70	23rd
	York	29° 948	56° 7	49° 5	65° 0	57° 3	30	1st	72	10th, 15th, 16th.
	Spurn Head	29° 949	56° 8	51° 6	61° 7	56° 7	45	1st	73	16th
3. ENGLAND, E.	Yarmouth	29° 979	57° 5	51° 2	63° 0	57° 1	42	1st	75	25th
	Cambridge	29° 998	58° 5	49° 7	68° 0	58° 9	37	1st	77	25th
4. MIDLAND COUNTIES	Loughborough	29° 993	57° 0	49° 5	67° 6	58° 6	40	1st	74	15th, 26th
	Oxford	30° 018	56° 1	49° 7	66° 5	58° 1	37	1st	75	24th
5. ENGLAND, S.	London	30° 020	57° 4	51° 1	67° 0	59° 1	37	1st	77	25th
	Dungeness	30° 018	56° 5	51° 2	62° 1	56° 7	37	1st	68	10th, 19th
	Hurst Castle	30° 045	57° 2	52° 1	62° 0	57° 5	41	1st	69	23rd
6. SCOTLAND, W.	Ardrossan	29° 888	54° 4	49° 2	59° 1	54° 2	36	1st	67	10th
7. ENGLAND, N.W.	Hawes Junction*	28° 705	50° 7	45° 4	56° 1	50° 8	34	8th	66	10th
	Liverpool	29° 960	56° 1	51° 5	62° 4	57° 0	44	1st, 8th	68	10th, 15th
	Holyhead	29° 963	56° 0	51° 1	60° 7	55° 9	46	1st, 8th	66	23rd
8. ENGLAND, S.W.	Pembroke	30° 008	54° 5	51° 6	57° 6	54° 6	45	1st	62	13th
	Prawle Point	30° 058	55° 8	50° 8	59° 3	55° 1	43	1st	66	23rd
9. IRELAND, N.	Malin Head	29° 872	53° 0	50° 0	57° 8	53° 9	45	1st, 6th	63	10th
	Donaghadee	29° 928	55° 3	52° 0	62° 5	57° 3	44	1st	72	15th
	Mullaghmore	29° 914	54° 7	50° 1	59° 5	54° 8	42	1st	67	15th
	Belmullet	29° 913	54° 4	50° 2	57° 9	54° 1	42	1st	63	10th
10. IRELAND, S.	Parsonstown	29° 956	55° 7	50° 0	63° 3	56° 7	41	7th	70	15th
	Valencia	30° 030	55° 9	51° 8	59° 8	55° 8	48	24th, 28th	65	25th
	Roche's Point	29° 999	56° 2	51° 8	61° 8	56° 8	48	1st	69	23rd
CHANNEL ISLANDS	Scilly (St. Mary's)	30° 041	56° 0	53° 0	59° 6	56° 3	51	1st, 4th, 11th, 15th, 16th, 17th, 30th, 1st	62	10th, 17th, 25th, 26th, 28th, 25th
	Jersey	30° 096	57° 6	52° 4	62° 2	57° 3	39		74	

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



## SUMMARY OF OBSERVATIONS, JUNE 1890.

xxiii

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of JUNE 1890.

Thunderstorms, and Gales are counted irrespective of the hours 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.	Snow.	Hail.	Thunderstorms.	Clear Sky.	Overcast.	Gales.	North.	N.E.	East.	S.E.	South.	S.W.	West.	N.W.	Calm.
in.	%		ins.	in.																	
0.314	85	7.5	2.51	0.47	22nd	21	0	0	0	0	15	2	3	7	2	2	1	4	6	2	3
*348	84	7.8	2.73	0.36	2nd	23	0	1	0	4	19	2	1	3	0	3	7	3	4	8	1
*375	93	8.3	3.88	0.56	24th	24	0	0	0	0	19	4	0	1	3	2	7	4	10	3	0
*346	82	6.5	1.68	0.29	26th	22	0	0	1	0	8	2	0	1	3	1	0	1	17	2	5
*311	72	7.4	1.72	0.19	3rd, 27th	21	0	0	3	0	11	1	2	1	1	5	6	5	5	5	0
*336	75	7.4	2.76	0.65	11th	21	0	0	1	0	13	0	0	4	6	0	0	8	11	1	0
*357	80	7.6	3.02	0.80	11th	18	0	1	2	0	12	1	2	1	2	2	4	4	11	2	2
*360	78	6.6	2.27	0.76	30th	17	0	0	1	6	10	0	5	0	1	0	7	2	15	0	0
*364	78	6.4	1.53	0.44	10th	14	0	0	4	0	7	3	3	2	1	2	3	10	6	2	1
*377	79	4.4	2.62	0.32	12th	18	9	0	2	11	3	1	5	1	1	2	3	5	6	7	0
*378	77	7.5	2.11	0.48	10th	17	0	0	3	0	15	0	5	0	0	1	3	14	3	4	0
*367	79	7.7	1.71	0.65	30th	17	0	0	4	1	15	0	1	1	0	3	2	7	12	3	1
*369	81	7.9	1.67	0.35	28th	17	0	0	1	3	17	0	4	0	0	3	3	12	4	3	1
*370	78	7.2	3.17	0.65	12th	19	0	1	2	5	15	0	2	2	0	1	3	7	7	5	3
*384	84	7.3	1.55	0.50	30th	12	0	0	0	0	9	1	1	1	1	0	4	5	13	4	1
*417	89	6.5	3.24	0.97	4th	16	0	0	0	2	9	1	3	1	1	0	2	9	7	7	0
*348	82	8.0	3.92	0.67	30th	17	0	0	0	3	19	1	0	3	3	3	1	9	9	1	1
*337	91	8.0	5.67	0.95	10th	26	0	0	1	1	20	0	1	2	1	7	3	14	2	0	0
*362	79	8.2	2.86	0.71	10th	17	0	0	2	1	17	0	1	0	1	4	3	7	11	3	0
*381	85	7.8	1.63	0.37	8th	19	0	0	0	0	14	1	2	2	0	1	5	10	7	3	0
*306	93	7.0	2.45	0.40	29th	23	0	0	0	0	12	2	2	1	0	3	4	9	8	3	0
*402	91	7.2	2.84	0.50	29th	19	0	0	0	1	12	0	1	1	0	2	1	7	12	6	0
*347	86	8.5	3.34	0.40	5th	21	0	0	0	2	22	2	4	0	0	3	5	7	8	3	0
*375	86	7.6	2.33	0.39	5th	21	0	0	0	1	14	3	2	4	0	2	4	4	11	3	0
*352	83	7.7	4.79	0.61	27th	24	0	0	1	0	11	6	2	0	0	2	4	13	6	3	0
*361	85	8.5	4.49	0.78	2nd	23	0	0	0	2	23	0	2	1	2	3	2	11	6	3	0
*398	90	8.2	2.40	0.25	27th 29th	22	0	0	0	0	13	0	0	0	0	3	0	10	1	2	14
*302	88	9.2	6.06	0.85	7th	24	0	0	0	0	24	3	2	0	0	3	5	9	7	3	1
*367	81	7.2	4.10	0.50	7th	15	0	0	1	0	11	1	4	0	0	1	3	8	10	4	0
*422	94	7.9	3.05	0.64	25th	17	0	0	0	0	12	2	4	0	0	1	3	8	10	4	0
*395	83	7.6	2.89	0.48	10th	17	0	0	1	3	18	2	0	2	1	1	2	5	11	8	0

barometric observations at this station are not corrected 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 1890.

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.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	146.2	27
LAIRG	45.3	58.2	51.8	29	8th	65	10th	26	3.11	0.66	27th	—	—
GLENCARRON	45.8	57.4	51.6	34	8th	66	10th	25	7.64	1.66	2nd	—	—
FORT AUGUSTUS	47.3	59.5	53.4	34	8th	66	22nd	25	3.87	0.67	27th	76.5	15
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	167.6	32
BRAEMAR	44.2	59.1	51.7	33	8th, 14th	65	15th	17	2.43	0.38	27th	143.0	27
OCHTERTYRE	47.2	63.8	55.5	35	6th, 7th	69	15th	20	3.98	0.62	3rd	—	—
MARCHMONT	46.7	61.2	54.0	37	8th	68	23rd	20	3.50	0.80	11th	159.8	31
ALNWICK CASTLE	49.1	61.1	55.1	38	14th	68	23rd	16	3.10	0.80	10th	—	—
DURHAM	47.3	64.7	56.0	36	8th, 15th	73	23rd	17	2.36	0.97	30th	126.9	25
SCARBOROUGH	49.2	63.1	56.2	40	1st	71	16th, 23rd	17	2.10	0.78	30th	107.6	21
YORK	*	*	*	*	*	*	*	*	*	*	*	103.0	20
HILLINGTON	48.4	66.2	57.3	35	1st	75	10th	20	2.81	0.61	28th	145.9	29
GELDESTON	49.4	65.4	57.4	36	8th	77	25th	17	2.33	0.41	28th, 30th	169.4	34
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	152.1	31
ROTHAMSTED	48.5	65.5	57.0	37	1st	75	25th	17	2.33	0.33	30th	—	—
INGATESTONE	49.4	65.4	57.4	37	1st	75	24th, 25th	17	1.75	0.33	30th	—	—
BAWTRY	49.6	65.9	57.8	37	8th	74	10th, 11th	13	1.22	0.40	26th	111.4	22
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	131.3	26
CHEADLE	47.2	62.5	54.9	39	1st	69	15th	17	3.07	0.69	10th	—	—
CHURCHSTOKE	46.7	63.7	55.2	35	8th	71	15th	13	1.79	0.43	28th	124.5	25
HEREFORD	48.6	66.5	57.6	37	1st	73	15th, 24th	14	1.68	0.36	28th	—	—
CIRENCESTER	47.2	64.8	56.0	30	1st	72	24th	16	2.46	0.72	10th	147.9	30
OXFORD	*	*	*	*	*	*	*	*	*	*	*	146.3	30
LONDON	*	*	*	*	*	*	*	*	*	*	*	126.3	26
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	167.8	34
STRATHFIELD TURGISSE	48.5	67.6	58.1	33	1st	77	24th, 25th	18	2.76	0.71	28th	—	—
HASTINGS	50.8	61.9	56.4	42	1st	69	24th	14	2.03	0.60	30th	166.6	34
SOUTHAMPTON	50.7	66.5	58.6	39	1st	75	24th	18	2.73	0.43	28th	158.5	32
STOWELL	48.9	63.1	56.0	37	1st	71	25th	18	3.77	0.70	30th	—	—
LAUDALE	48.2	60.5	54.4	40	9th	68	9th, 10th	24	7.74	1.60	2nd	—	—
GLASGOW	48.7	60.5	54.6	38	8th	69	10th	23	3.96	0.60	8th	103.2	20
GLENLEE	47.4	60.7	54.1	30	8th	68	10th	22	5.79	0.72	10th	—	—
DOUGLAS	47.7	60.2	54.0	36	8th	65	23rd	21	3.94	0.56	10th	160.5	32
NEWTON REIGNY	46.1	61.3	53.7	33	8th	60	10th	22	2.92	0.70	10th	129.0	25
STONYHURST	48.8	61.0	54.9	38	8th	69	10th	22	4.48	0.74	2nd	115.0	23
BLACKPOOL	50.6	61.7	56.2	40	8th, 9th	72	10th	17	3.62	0.78	30th	146.3	29
MANCHESTER	48.8	63.0	55.9	40	1st, 8th	70	15th	19	3.64	0.84	30th	—	—
LLANUDNO	51.1	61.9	56.5	42	8th	69	15th	18	2.54	0.35	25th, 30th	115.8	23
LLANDOVERY	48.6	65.0	56.8	31	7th	73	23rd, 24th, 26th	28	4.12	0.42	29th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	149.5	30
ARLINGTON	48.7	60.8	54.8	38	7th	68	14th, 25th	24	4.49	0.71	29th	—	—
CULLOMPTON	48.9	66.0	57.5	35	1st	75	25th	16	2.84	0.63	30th	153.8	32
FALMOUTH	51.8	62.1	57.0	43	1st	69	18th	16	3.38	0.58	25th	169.0	35
PLYMOUTH	52.7	65.9	59.3	44	1st	74	15th	12	3.56	0.74	25th	137.6	28
JERSEY	*	*	*	*	*	*	*	*	*	*	*	193.2	40
LONDONPERRY	49.4	62.9	56.2	41	1st	70	11th	24	3.38	0.33	5th	—	—
MARREE CASTLE	47.6	61.1	54.4	33	1st	70	15th	26	2.97	0.33	5th	122.7	24
BROOKBOROUGH	48.0	61.3	54.7	33	1st	68	14th, 15th	23	3.80	0.52	26th	—	—
AERMAGH	48.5	62.9	55.7	38	1st, 2nd, 7th	70	15th	23	2.54	0.41	29th	123.1	24
EDGEWORTHSTOWN	48.4	62.9	55.7	37	7th	71	14th	24	3.24	0.41	29th	—	—
DUBLIN	52.0	64.2	58.1	43	7th	72	5th	18	1.93	0.36	11th	133.2	27
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	113.1	23
KILKENNY CASTLE	50.1	63.6	56.9	40	7th	71	15th	22	2.24	0.47	7th	—	—
WATERFORD	50.6	64.1	57.4	39	1st	71	23rd	19	3.76	0.92	7th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	118.0	24
KILLARNEY	50.9	62.1	56.5	42	24th	69	15th	21	4.32	0.70	27th	—	—
FOYNES	50.9	62.2	56.6	45	6th, 27th	70	15th	25	3.03	0.72	7th	—	—

\* For information see Table XI.

† The bright sunshine values entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksoy, those entered to Loughborough at Thureaston, and those to Dungeness at Westgate-on-Sea. The values for Stowell are doubtful.

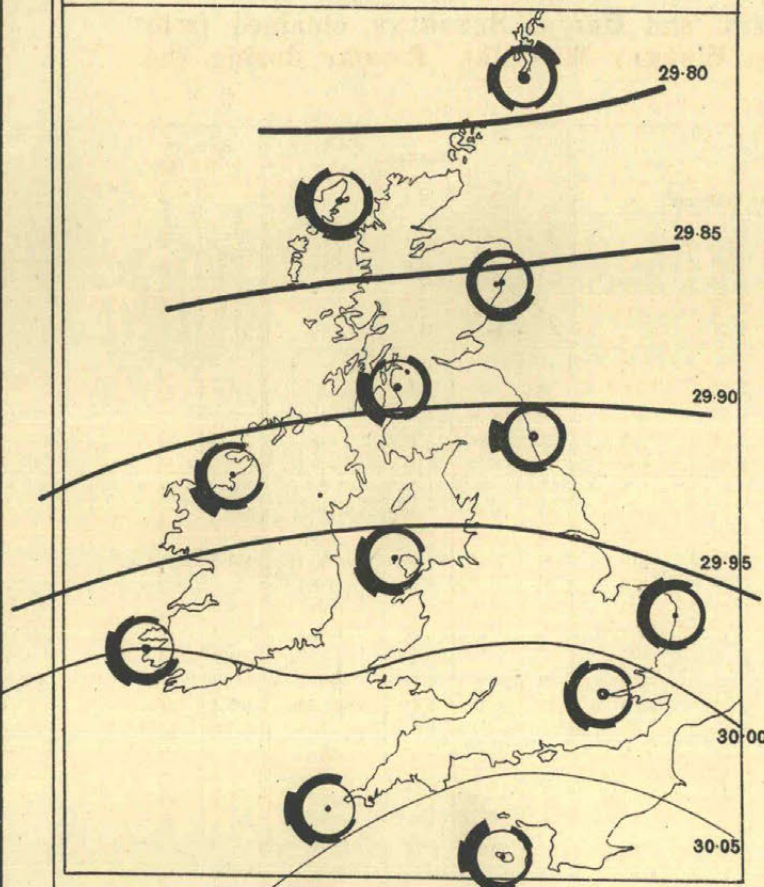


# MONTHLY WEATHER CHART, JUNE, 1890.

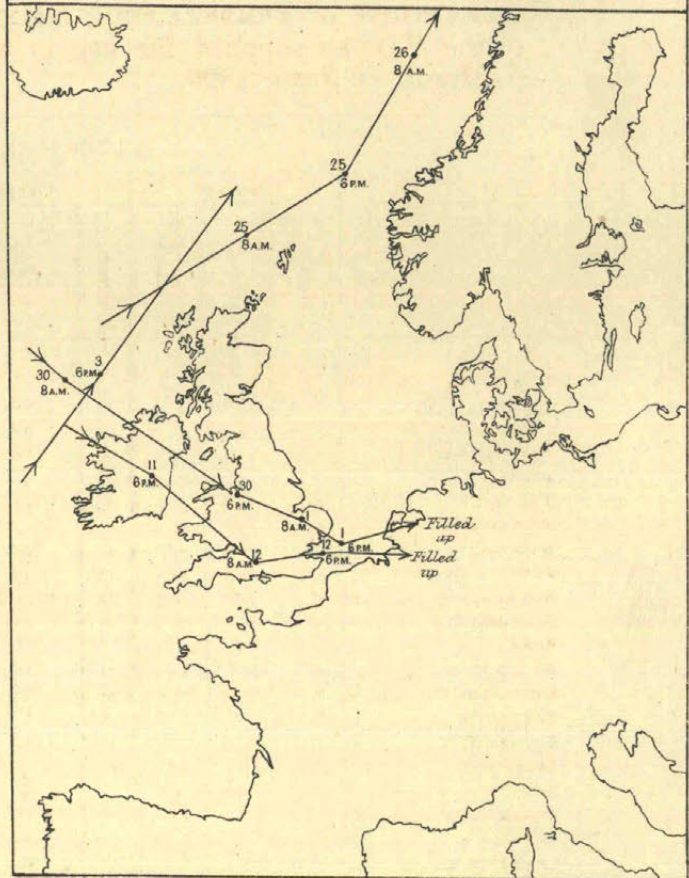
Monthly Summary.

Plate VI.

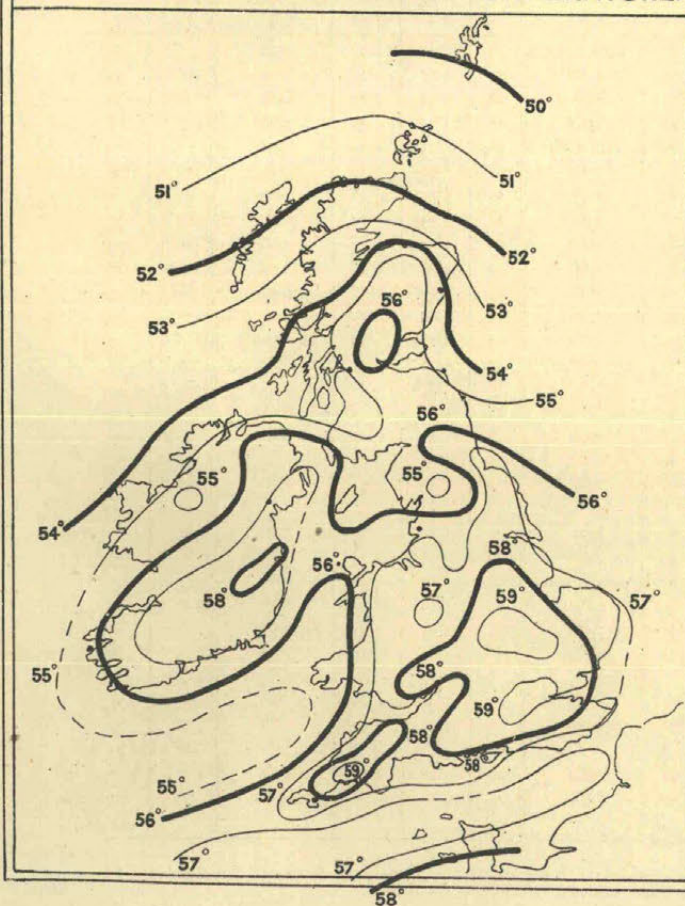
## 1 BAROMETER AND WIND.



## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4 RAINFALL.

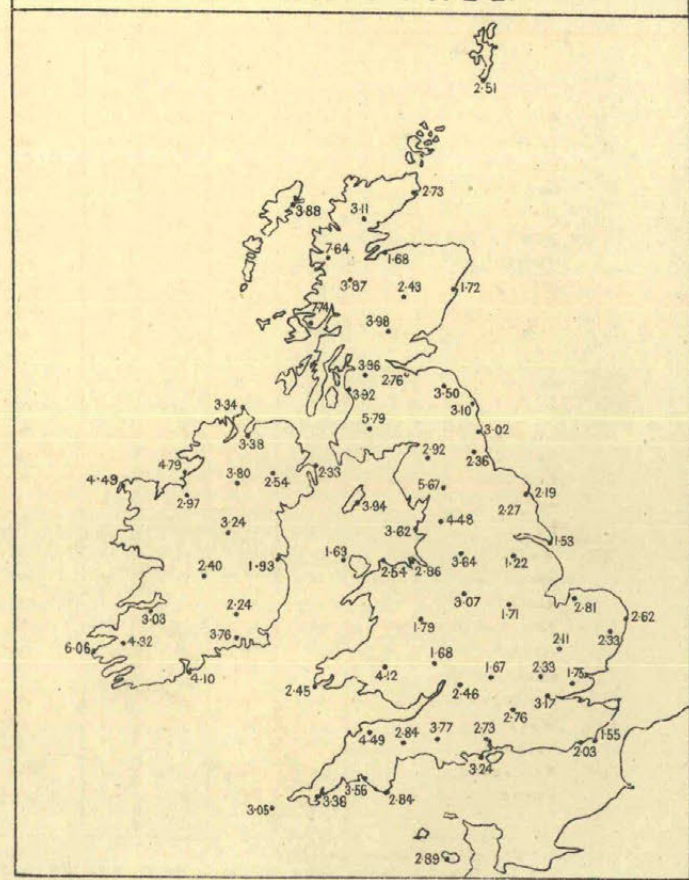




FIGURE 1  
DISTRIBUTION OF MEAN TEMPERATURE

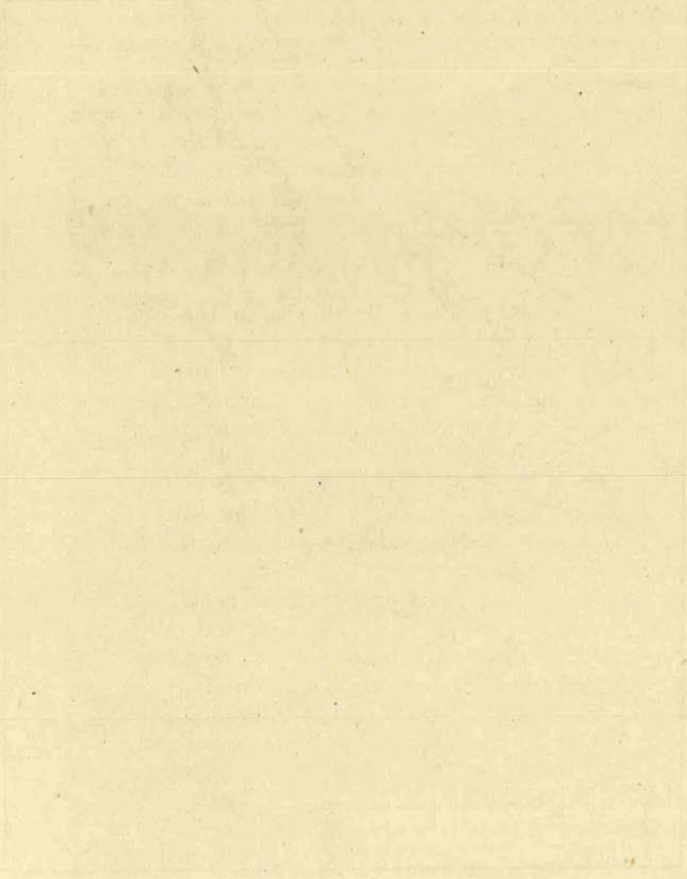


FIGURE 2  
DISTRIBUTION OF MEAN TEMPERATURE



FIGURE 3  
DISTRIBUTION OF MEAN TEMPERATURE

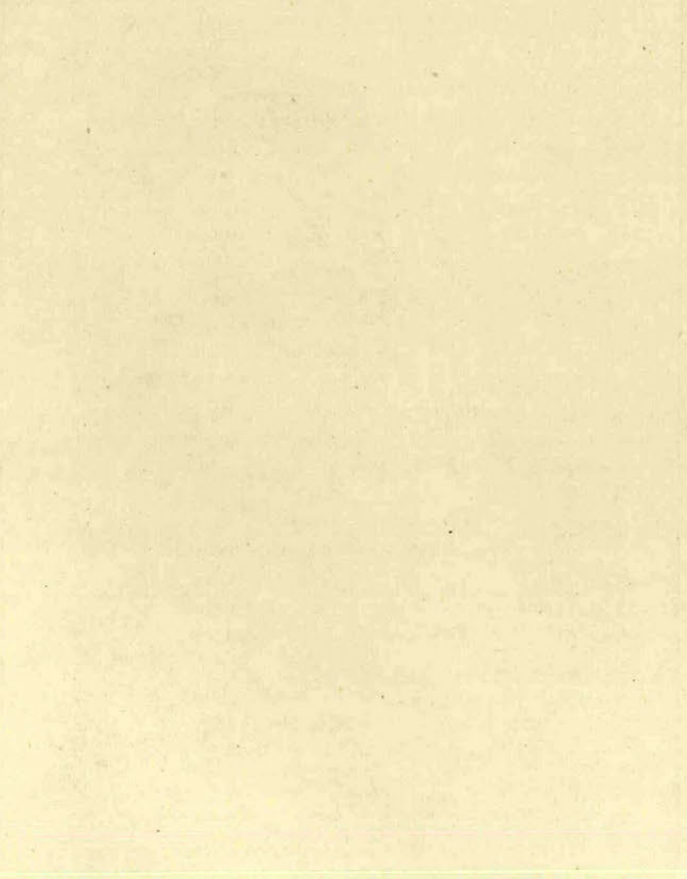


FIGURE 4  
DISTRIBUTION OF MEAN TEMPERATURE





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

## JULY 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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 exceedingly chilly and unsettled, with severe thunderstorms and exceptionally heavy falls of rain over the southern half of England. Pressure was below the average in the north and east, but fairly normal in the south-west; temperature was everywhere low for the time of year; the winds were mainly Westerly or North-westerly, with frequent slight gales over Ireland and England; and rainfall was considerably in excess of the average, excepting in Ireland, North Wales, and some portions of the west and north of England. The amount of bright sunshine was small, especially over central Scotland and the south of England.

**Pressure.**—*Mean for the Month at 8 a.m.* ranged from a little above 29·95 ins. in the extreme south of Ireland, the south-west of England, and the Channel Islands, to a little above 29·65 ins. in the Shetlands. The general distribution was of a fairly normal character, but the isobars had a trend favourable for winds from a somewhat more Northerly point than usual. As the values in the north and east were from 0·10 in. to 0·15 in. below, while those in the south-west were about equal to the average,\* the mean gradient was more than ordinarily steep. *Highest* values were recorded on the 20th, when the readings varied from 30·1 ins. or more in the extreme northern and eastern parts of the country, to about 30·4 ins. in the south-west of Ireland. *Lowest* values were recorded as a rule on the 8th, but in some localities equally low readings were observed on the 1st; on each occasion the barometer fell to between 29·3 ins. and 29·7 ins. over the country generally.

**Depressions** were unusually numerous for the time of year, and in many cases their centres passed directly over the United Kingdom. The most important systems were those of the 5th and 17th, the centres of which moved along the Channel and afterwards travelled away to Denmark and Scandinavia. The passage of each of these disturbances was attended by heavy rain over our southern districts, the downpour in the latter case being of an exceptional character and accompanied by severe thunderstorms.

**Anticyclones.**—These systems were usually found either to the south-westward, southward, or south-eastward of our Islands. On the 16th, however, an anticyclone of irregular form spread northward (temporarily), and covered nearly the whole kingdom; while on the 20th another clearly defined system advanced over our Islands from the westward, and afterwards moved away to the south-westward.

**Wind** was chiefly Westerly or North-Westerly over Ireland and England, but in Scotland greater variability was shown, a considerable proportion of wind from North being reported in the Shetlands, and from North-east or East in the Hebrides. Gales were very numerous for the time of year over Ireland and England, as many as five being reported at Spurn Head, Yarmouth, Dungeness, Pembroke, Mullaghmore, and Valencia. On the Scotch coasts, however, there was only one.

**Temperature.**—*Mean at sea level* ranged from between 60° and 61° over central England and some of the inland parts of our southern counties, to a little below 52° in the Shetland Islands. In Map 3 relatively cold areas are shown over the north-west of Ireland and the south-west of Scotland. The mean distribution was therefore of the ordinary summer type, but the actual values were considerably below the average,\* the deficit varying from about two to two and a half degrees at our western and northern coast stations to as much as three or four degrees in other localities. *Highest* readings occurred on somewhat irregular dates; over the inland parts of the kingdom they were observed as a rule between the 21st and 23rd, but in the extreme north of Scotland, the west of Ireland, and the Channel Islands the actual maxima occurred mostly on the 31st. The maxima were in all cases low for the time of year, the thermometer even at the central stations rising to very little above 75°. *Lowest* readings were also observed at varying times, but over England they occurred mainly on the 4th, 5th, or 12th; in the more central parts of all three kingdoms the thermometer fell below 40°, the lowest reading of all being 36°, at Llandovery and Markree Castle. Owing, however, to the lowness of the maximum readings, the *Range* was not large for the time of year. *Vapour Tension* ranged from 0·32 in. in the east of Scotland to 0·40 in. and upwards over the southern parts of the kingdom generally, to 0·45 in. at Scilly. *Relative Humidity* was below 80 per cent. over the east of Scotland and the central parts of England, but exceeded 90 per cent. in the south-west of England, and was as high as 95 per cent. in the Hebrides.

**Rainfall** amounted to less than 2 ins. in North Wales and some parts of western and northern England, but exceeded 4 ins. in many parts of our southern, eastern, and north-western counties, and varied from 6 to 9 ins. in the west of Scotland. Over England the largest quantities were 5 ins. at Plymouth and 4·9 ins. at Ingatestone and Arlington; at Laudale 6·6 ins. were recorded, and at Glencarron 8·9 ins. Over Ireland, the south-east of Scotland, North Wales, and portions of our western and northern counties, the total fall was less than the average,\* but in all other localities there was a decided excess, the amounts in London and at Hastings being more than twice the average. The heavy totals recorded over the south of England were due largely to the serious downpour which accompanied the thunderstorms of the 17th; in the neighbourhood of the Thames Valley over 3 ins. were collected in the space of a few hours, and at Rickmansworth there was as much as 4·2 ins. The number of rainy days was rather large, especially in Ireland and Scotland; at Belmullet, Edgeworthstown, and Hawes Junction there were 25, at Glencarron 26, and at Stornoway and Markree Castle 27.

**Bright Sunshine** was very deficient, the per-centage of the possible amount of duration being below 40 generally and below 30 in Scotland and many parts of our southern counties. The highest per-centage values were 39 at Hastings and Douglas and 35 at Cambridge: the lowest were 13 at Fort Augustus and 24 at Braemar and Plymouth. In London there was only 27 per cent. of the possible amount.

\* The averages employed are—Pressure and Temperature for 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 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 89° 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. com- bined.	Minimum.	Date.	Maximum.	Date.
0. SCOTLAND, N.	Sumburgh Head	ins. 29°672	52°2	47°0	56°0	51°5	43	8th	60	26th, 28th, 31st
	Wick	29°725	54°3	44°2	59°4	51°8	37	3rd	68	30th
	Stornoway	29°740	53°3	47°0	57°7	52°4	40	8th, 11th, 17th, 25th.	63	20th, 21st, 31st
1. SCOTLAND, E.	Nairn	29°752	54°4	47°6	61°9	54°8	40	16th	71	26th
	Aberdeen	29°763	54°1	48°2	61°5	54°9	41	11th	70	21st, 30th
	Leith	29°788	56°8	48°9	64°5	56°7	43	8th	71	26th
2. ENGLAND, N.E.	Shields	29°795	56°3	50°0	63°0	56°5	44	5th	73	21st
	York	29°837	57°8	50°6	66°3	58°5	42	20th	73	21st
	Spurn Head	29°822	57°9	53°2	63°7	58°5	48	1st, 12th	72	13th
3. ENGLAND, E.	Yarmouth	29°848	58°2	52°1	64°5	58°3	42	12th	73	14th, 31st
	Cambridge	29°882	59°5	50°8	68°6	59°7	42	12th	75	16th
4. MIDLAND COUNTIES	Loughborough	29°882	58°3	51°9	67°9	59°9	43	12th	76	23rd
	Oxford	29°908	57°9	52°1	67°1	59°6	45	4th, 12th	75	23rd
5. ENGLAND, S.	London	29°900	59°1	52°6	68°1	60°4	43	12th	76	26th, 23rd
	Dungeness	29°888	59°3	52°9	64°8	58°9	40	12th	73	22nd
	Hurst Castle	29°939	59°2	54°4	65°2	59°8	48	4th, 6th, 12th, 20th.	72	22nd, 24th
6. SCOTLAND, W.	Ardrossan	29°809	55°5	50°9	60°8	55°9	42	10th	64	4th, 17th, 19th, 22nd.
7. ENGLAND, N.W.	Hawes Junction*	28°607	52°2	47°0	57°9	52°5	38	12th	64	21st, 31st
	Liverpool	29°866	57°2	53°3	63°6	58°5	48	12th	71	31st
	Holyhead	29°881	57°5	52°6	62°2	57°4	47	4th	72	23rd
8. ENGLAND S.W.	Pembroke	29°932	56°4	53°3	59°9	56°6	48	11th	64	24th
	Prawle Point	29°964	57°8	52°3	62°3	57°3	46	10th	70	20th, 21st, 22nd
9. IRELAND, N.	Malin Head	29°818	54°8	51°6	59°0	55°3	47	3rd	64	13th
	Donaghadee	29°857	56°9	53°4	64°8	59°1	49	10th, 15th	73	26th, 27th
	Mullaghmore	29°873	55°9	51°6	60°7	56°2	45	17th	65	13th, 31st
	Belmullet	29°890	56°2	51°7	59°7	55°7	44	17th	64	7th
10. IRELAND, S.	Parsonstown	29°914	55°6	49°3	64°1	56°7	38	10th, 11th	70	13th, 23rd
	Valencia	29°965	57°9	52°5	61°7	57°1	45	10th, 11th	65	31st
	Roche's Point	29°947	57°3	52°9	63°2	58°1	46	7th	71	23rd
CHANNEL ISLANDS	Scilly (St. Mary's)	29°973	57°8	54°2	60°9	57°6	50	5th, 6th	66	31st
	Jersey	29°990	59°8	54°9	64°9	59°9	50	4th	77	31st

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



## SUMMARY OF OBSERVATIONS, JULY 1890.

xxvii

REPORTING STATIONS in the BRITISH ISLANDS during the Month of JULY 1890.

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.
in.	%		ins.	in.																	
0.335	86	7.1	4.12	2.17	8th	24	0	0	0	0	12	0	8	4	0	2	4	1	7	5	0
354	83	7.2	3.41	0.42	23rd	22	0	1	1	1	15	1	8	2	1	1	2	5	3	9	0
384	95	8.3	3.94	0.62	20th	27	0	0	0	0	18	0	1	5	4	2	0	7	8	3	1
340	80	6.3	3.88	1.05	7th	21	0	0	0	1	8	0	2	0	3	1	0	4	11	3	7
321	77	7.7	2.76	1.34	7th	24	0	1	1	0	10	1	4	2	1	5	5	2	4	8	0
342	74	7.4	2.21	0.54	7th	19	0	0	1	0	11	0	2	3	2	1	2	2	17	2	0
364	80	7.6	1.49	0.52	2nd	15	0	0	1	0	8	1	3	2	0	0	3	5	6	11	1
379	79	6.7	2.63	0.71	16th	17	0	0	1	6	14	0	6	2	1	0	4	6	9	3	0
389	81	6.5	1.55	0.38	18th	16	0	1	2	0	10	5	3	2	1	0	2	10	8	5	0
410	84	5.3	4.48	1.09	18th	21	0	0	0	6	6	5	2	3	1	0	1	9	6	9	0
401	79	7.0	3.00	1.01	17th	19	0	0	2	1	15	0	4	1	1	0	1	14	4	6	0
381	78	7.4	2.16	0.48	18th	19	0	0	1	1	13	2	3	1	1	0	0	7	15	4	0
386	81	7.2	2.92	0.90	17th	17	0	0	1	6	15	0	3	0	0	0	1	12	7	8	0
393	78	7.1	4.75	1.79	17th	16	0	0	2	4	14	1	3	0	0	0	2	8	10	8	0
406	81	6.4	2.74	1.20	4th	14	0	0	2	1	9	5	6	2	0	0	0	6	11	5	1
455	89	5.8	2.95	1.41	17th	19	0	0	0	2	3	1	3	2	1	0	0	8	11	6	0
362	82	7.3	3.28	1.02	7th	18	0	0	0	1	14	0	0	3	1	0	3	10	9	4	1
350	90	8.0	4.90	0.88	26th	25	0	0	0	0	21	0	3	3	1	2	3	13	4	2	0
362	77	7.7	2.17	0.44	16th	18	0	0	0	1	17	0	2	2	0	1	0	6	14	6	0
388	82	6.1	1.60	0.41	25th	19	0	0	0	0	7	0	7	1	0	0	1	11	4	7	0
407	90	6.8	3.01	0.71	7th	18	0	0	0	0	10	5	5	1	1	1	4	6	9	4	0
427	89	7.4	2.41	0.50	4th	19	0	0	1	1	16	1	1	1	1	1	4	4	9	10	0
356	83	8.3	3.07	0.53	13th	24	0	0	0	2	23	0	5	1	0	0	4	6	7	8	0
392	85	5.9	1.49	0.26	23rd	19	0	0	0	3	3	0	4	6	0	0	1	6	10	4	0
364	81	7.3	3.33	0.62	13th	24	0	0	0	3	11	5	4	1	0	2	3	8	4	8	1
378	84	8.0	3.43	0.55	13th	25	0	0	0	1	21	0	6	1	0	1	1	5	11	6	0
399	90	8.1	2.14	0.36	25th	21	0	0	0	0	18	0	1	0	0	1	0	6	1	5	17
411	86	8.9	3.89	0.73	11th	22	0	0	0	0	23	5	6	2	0	0	3	6	6	6	1
391	83	6.6	2.95	0.80	7th	16	0	0	0	0	11	1	9	0	0	1	1	7	5	8	0
448	93	8.2	4.42	1.37	16th	16	0	0	0	0	19	1	5	1	2	0	1	8	8	6	0
429	84	7.8	4.25	1.55	17th	16	0	0	1	2	20	3	1	2	0	1	4	2	12	8	1

observations at this station are not reduced 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 1890.

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	*	*	*	*	*	*	*	*	*	*	*	133.5	25
LAIRG	45.0	59.2	52.1	37	19th, 25th	69	26th	23	2.45	0.53	12th	—	—
GLENCARRON	45.5	57.5	51.5	40	8th, 17th	63	19th	26	8.91	1.21	28th	—	—
FORT AUGUSTUS	47.7	60.5	54.1	38	17th	68	21st	23	4.74	1.35	13th	69.4	13
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	158.8	30
BRAEMAR	45.6	59.2	52.4	37	26th	70	21st	22	3.35	1.11	7th	126.7	24
OCHTERTYRE	†	†	†	†	†	†	†	†	†	†	†	—	—
MARCHMONT	47.4	61.4	54.4	42	20th	72	21st	19	2.98	0.82	7th	165.0	31
ALNWICK CASTLE	50.3	61.7	56.0	45	4th, 6th, 11th	72	21st	13	2.12	0.50	6th	—	—
DURHAM	49.3	65.6	57.5	43	5th	74	21st, 31st	16	1.79	0.39	2nd	159.1	31
SCARBOROUGH	51.2	64.1	57.7	41	12th	73	23rd	16	1.65	0.30	18th	†144.8	29
YORK	*	*	*	*	*	*	*	*	*	*	*	161.9	32
HILLINGTON	50.5	67.3	58.9	38	12th	75	13th	20	3.37	0.87	17th	168.1	34
GELDESTON	50.5	66.5	58.5	39	12th	74	15th	20	3.42	0.96	18th	167.4	34
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	171.2	35
ROTHAMSTED	50.8	66.7	58.8	42	12th	75	22nd	17	4.41	2.50	17th	—	—
INGATESTONE	50.6	67.0	58.8	41	12th	75	16th	17	4.89	2.41	17th	—	—
BAWTRY	49.8	66.5	58.2	43	4th, 12th	74	14th, 31st	16	2.23	0.50	1st	†148.8	30
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†155.1	31
CHEADLE	49.3	63.3	56.3	43	4th, 12th	70	13th	19	2.68	0.53	18th	—	—
CHURCHSTOKE	47.5	64.4	56.0	38	4th, 10th, 12th	71	21st	19	1.98	0.32	16th	161.7	32
HEREFORD	50.6	68.0	59.3	41	12th	76	21st	16	1.77	0.36	2nd	—	—
CIRENCESTER	49.4	65.8	57.6	37	4th	73	23rd	21	3.54	1.12	17th	148.8	30
OXFORD	*	*	*	*	*	*	*	*	*	*	*	159.8	32
LONDON	*	*	*	*	*	*	*	*	*	*	*	131.2	27
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	†167.3	34
STRATHFIELD TURGISS	51.0	68.7	59.9	42	4th	78	23rd	19	3.44	1.73	17th	—	—
HASTINGS	53.0	64.9	59.0	45	12th	73	16th, 17th, 22nd	13	4.01	1.78	4th	192.8	39
SOUTHAMPTON	53.2	68.6	60.9	46	4th, 6th, 7th	77	23rd	19	4.03	2.07	17th	157.3	32
STOWELL	51.2	63.9	57.6	42	4th	72	23rd	21	3.32	0.78	17th	—	—
LAUDALE	49.0	61.7	55.4	41	17th	65	1st, 11th, 19th, 20th, 21st, 31st.	24	6.55	1.07	13th	—	—
GLASGOW	49.5	62.4	56.0	43	12th	69	19th	19	4.01	1.04	7th	145.5	28
GLENLEE	47.4	61.9	54.7	37	12th	67	21st, 26th, 31st	22	3.81	0.71	2nd	—	—
DOUGLAS	50.6	62.7	56.7	45	7th, 12th	69	23rd	15	2.68	0.72	7th	194.9	39
NEWTON REIGNY	48.2	61.9	55.1	37	20th	68	13th, 31st	22	1.82	0.22	3rd	158.1	31
STONYHURST	50.4	62.2	56.3	43	12th	69	31st	22	4.23	0.69	25th	148.7	29
BLACKPOOL	53.5	62.9	58.2	49	2nd, 5th	68	25th, 31st	16	2.93	0.37	25th	155.6	31
MANCHESTER	50.0	64.1	57.1	42	12th	70	13th, 16th, 26th 31st.	20	3.07	0.34	25th	—	—
LLANDUDNO	53.1	63.4	58.3	45	12th	69	13th, 14th, 30th 31st.	14	1.64	0.28	20th	160.3	32
LLANDOVERY	49.3	66.5	57.9	36	10th	75	23rd	23	4.57	1.19	30th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	155.7	32
ARLINGTON	50.4	61.6	56.0	42	4th	68	23rd	24	4.91	0.92	7th, 27th	—	—
CULLOMPTON	51.0	66.2	58.6	40	4th	72	21st, 23rd	18	2.95	0.58	17th	122.7	25
FALMOUTH	52.9	62.1	57.5	47	11th	67	26th	19	4.38	1.04	16th	135.4	28
PLYMOUTH	53.5	65.9	59.7	47	4th	75	21st	18	4.96	1.29	16th	117.3	24
JERSEY	*	*	*	*	*	*	*	*	*	*	*	164.0	34
LONDONERRY	50.1	63.9	57.0	44	17th	71	1st, 5th	22	3.83	0.74	23rd	—	—
MARKREE CASTLE	49.0	61.6	55.3	36	17th	68	13th, 23rd, 31st	27	3.77	0.72	13th	135.4	27
BROOKBOROUGH	47.5	61.9	54.7	38	17th	68	19th	21	2.52	0.25	27th, 30th	—	—
ARMAGH	48.7	63.7	56.2	42	11th, 17th	70	22nd	22	2.12	0.38	4th	149.9	30
EDGEWORTHSTOWN	48.3	63.4	55.9	39	4th, 10th	71	23rd	25	2.95	0.50	25th	—	—
DUBLIN	51.9	64.3	58.1	44	5th	73	13th, 23rd	24	2.17	0.38	25th	158.6	32
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	123.0	25
KILKENNY CASTLE	49.7	64.6	57.2	41	7th, 10th	72	21st, 23rd	15	2.15	0.48	31st	—	—
WATERFORD	50.2	65.9	58.1	42	7th, 10th	76	21st	17	2.40	0.54	7th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	132.5	27
KILLARNEY	51.0	63.0	57.0	38	4th	69	21st, 23rd	17	2.69	0.36	11th, 13th	—	—
FOYNES	52.0	62.9	57.5	45	4th	71	13th	21	3.14	0.61	25th	—	—

\* For information see Table XIII.

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

‡ Observations incomplete.

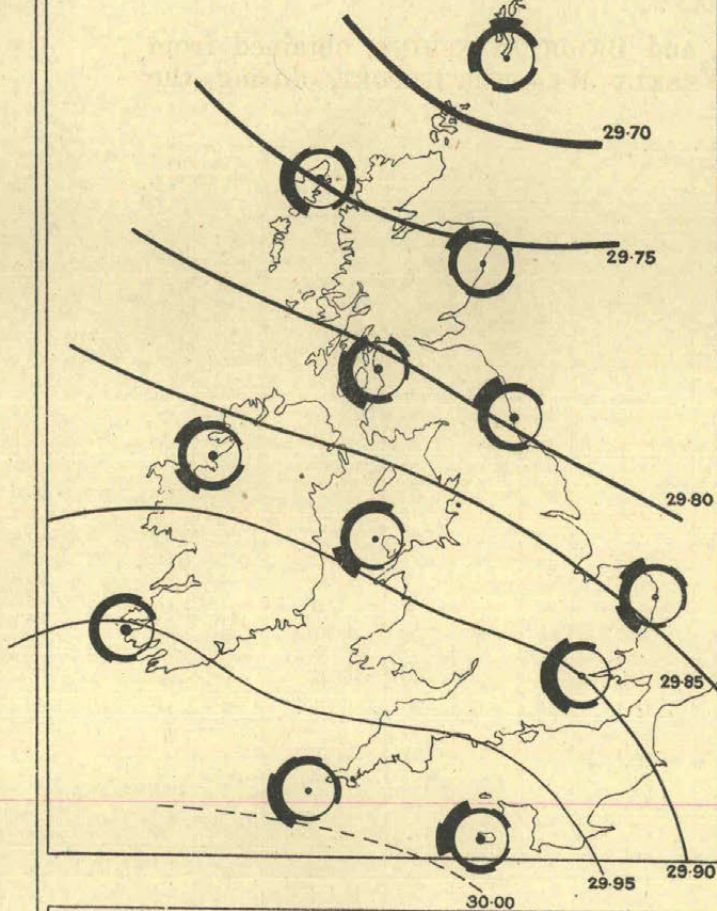


# MONTHLY WEATHER CHART, JULY, 1890.

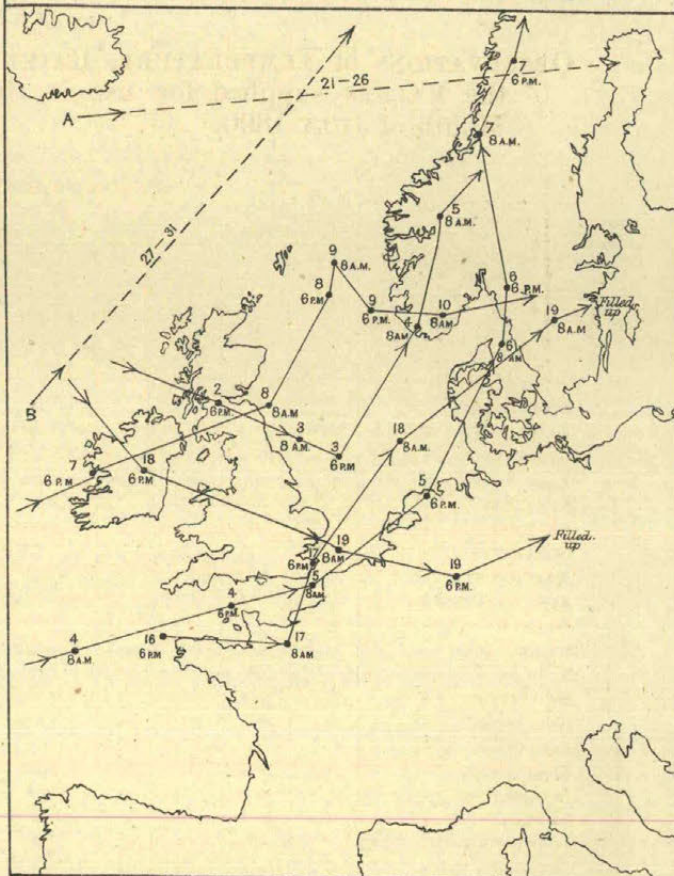
Monthly Summary.

Plate vii.

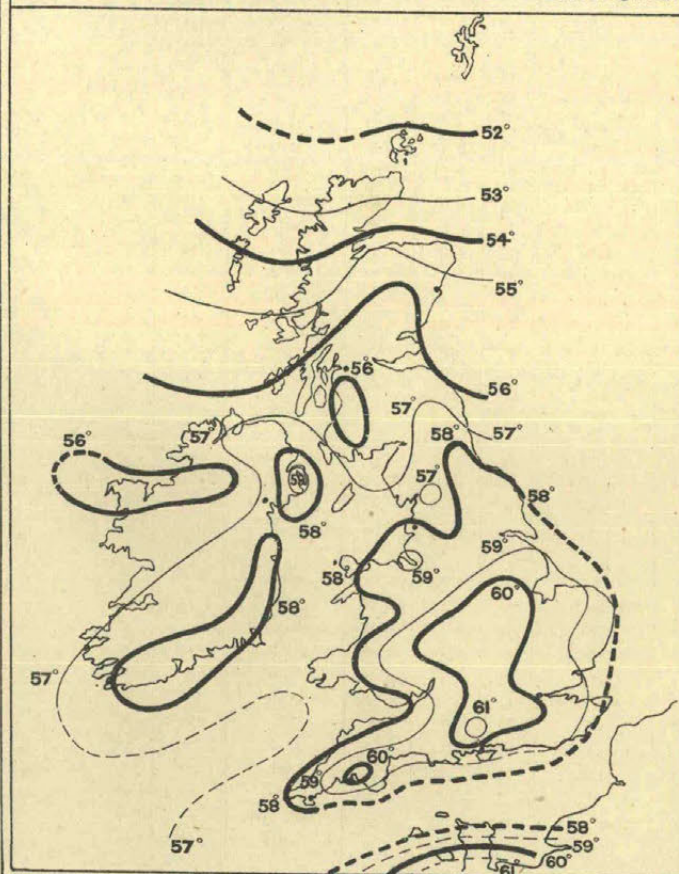
## 1 BAROMETER AND WIND.



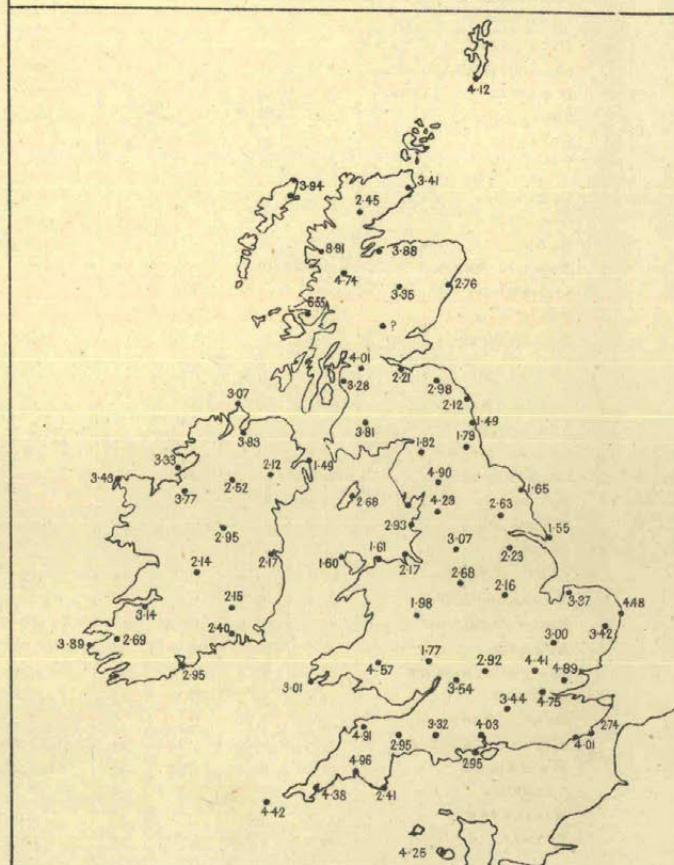
## 2. MOVEMENTS OF DEPRESSIONS.



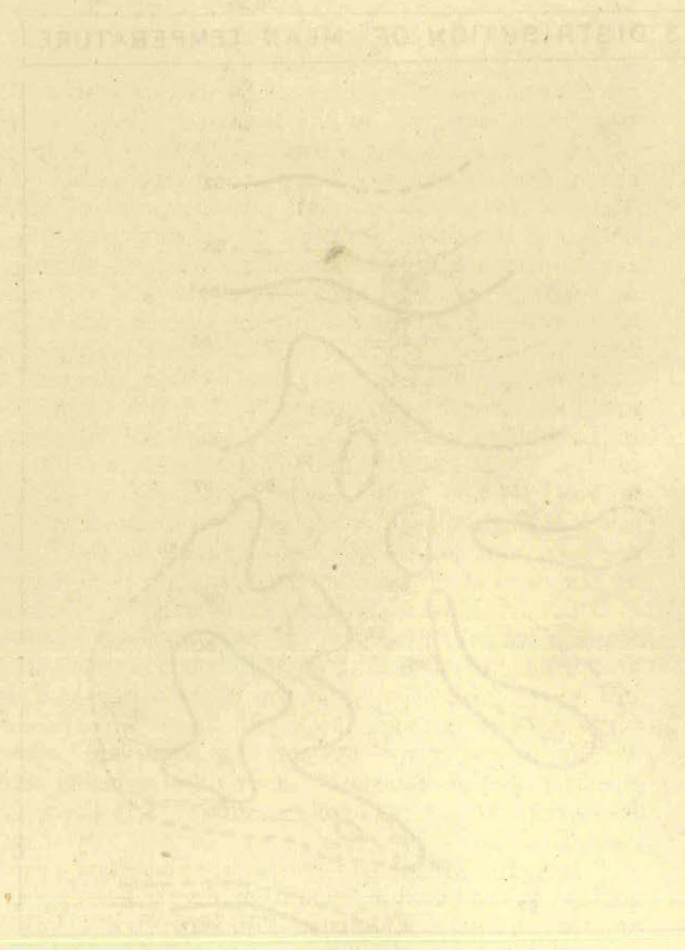
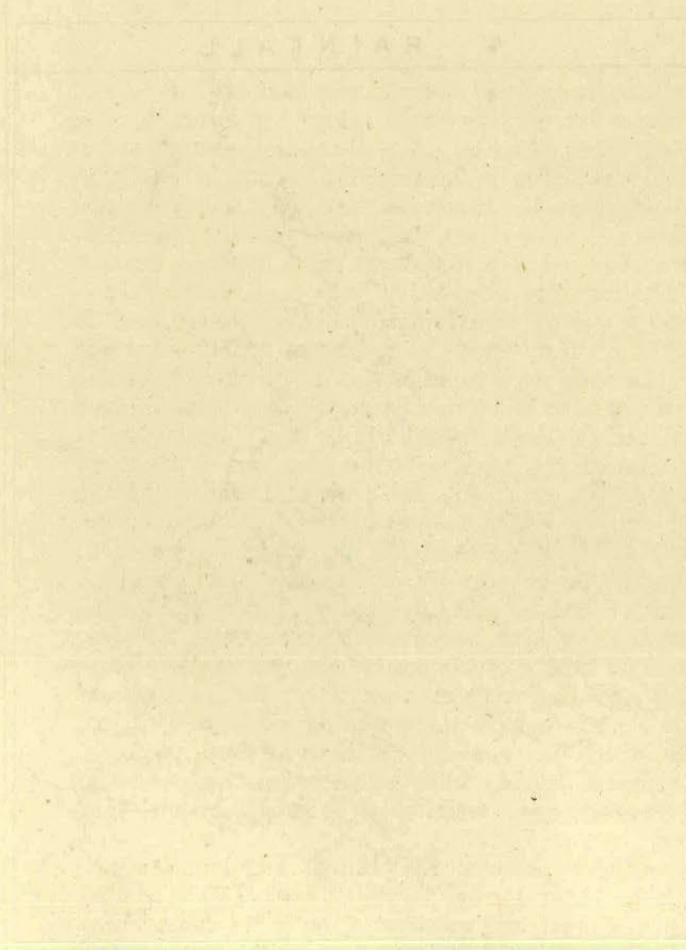
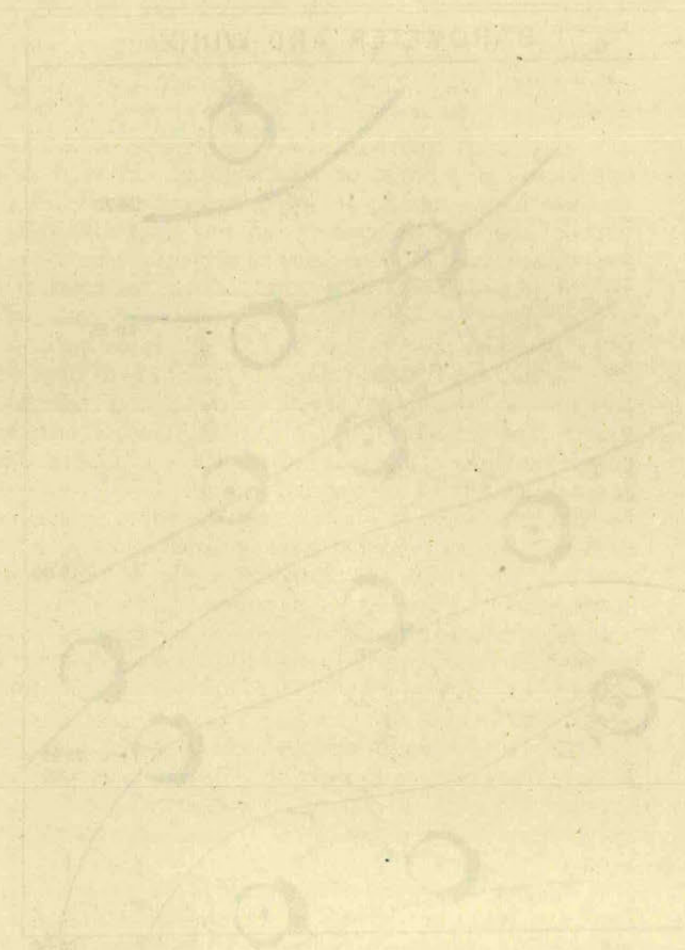
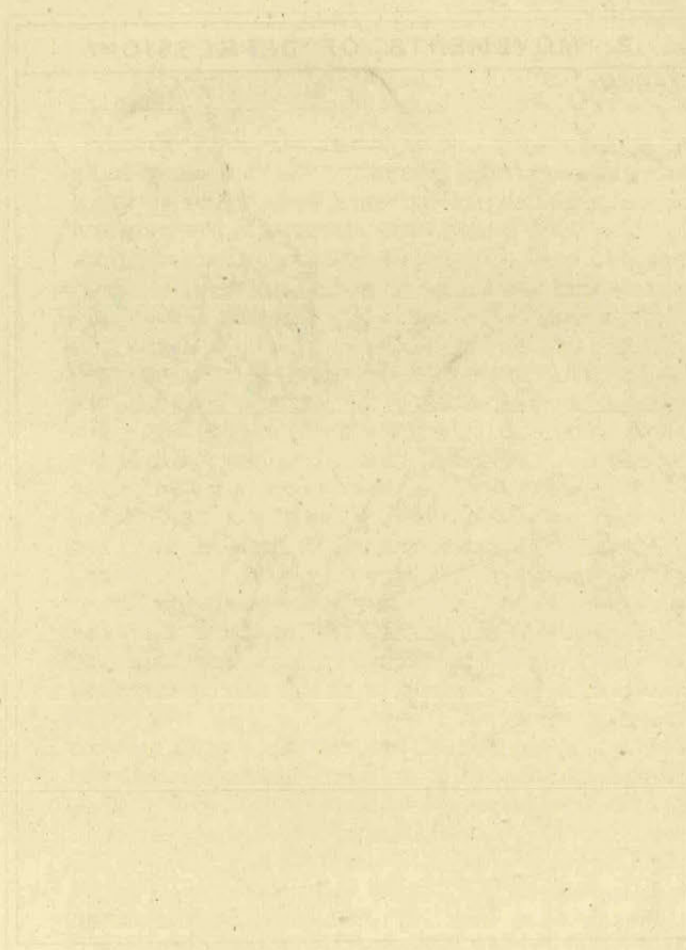
## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4 RAINFALL.









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

**AUGUST 1890.**

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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.; JOHN MENZIES & Co., 12, HANOVER  
STREET, EDINBURGH, and 21, DRURY STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

**General Summary.**—The weather of August was cool, showery, and unsettled, with severe thunderstorms in many parts of the country. Pressure was below the average generally, the deficiency being greatest in the north; temperature was also below the normal, especially in the more western and northern parts of the kingdom; the wind was chiefly Westerly, and blew with considerable strength in the west and south; and rainfall was considerably in excess of the average in most of the western and northern districts. Bright sunshine was fairly prevalent in the south, but very deficient in the north and north-west.

**Pressure.**—*Mean for the month at 8 a.m.* ranged from about 29·96 ins. in the Channel Islands and from between 29·90 ins. and 29·93 ins. over the southern parts of England and Ireland generally, to 29·75 ins. in the Hebrides and 29·72 in the Shetlands. The relative distribution of pressure was therefore of a fairly normal character, but the values were everywhere below the average\*; and, as the deficit was greatest (about 0·10 in.) in the extreme north, and least (about 0·05 in.) in the south, the gradients were somewhat steeper than usual for the time of year. *Highest* values were observed over the country generally on the 31st, when the barometer rose to between 30·1 ins. and 30·3 ins., but in many districts readings of almost equal height were observed on various occasions during the earlier half of the month. *Lowest* readings were recorded mostly on the 27th, when the barometer fell to between 29·2 ins. and 29·4 ins. In the northern parts of the kingdom, however, lower readings (29·0 ins. to 29·1 ins.) were registered during the passage of the well-marked depression of the 15th. *Range* was moderate.

**Depressions.**—The depressions observed were mostly shallow, but on the 15th a rather deep one moved north-eastwards across the northern parts of the kingdom, and occasioned gales over Ireland and England. The majority of the low-pressure systems travelled in an easterly or north-easterly direction across our Islands and the North Sea to Scandinavia, where they dispersed.

**Anticyclones.**—Four such systems were observed. In two cases the central portion of the anticyclone lay over France, and its influence was therefore confined to our southern districts. Between the 6th and 10th, however, a well-marked system moved slowly north-eastwards across the British Islands to Scandinavia, while at the close of the month a definite anticyclone spread over the United Kingdom from the westward.

**Wind** was mainly from some Westerly point, but at most stations there was a fair proportion of winds from the Eastward, while at Sumburgh Head there was much calm weather. Gales were numerous on many parts of our western and southern coasts; at Pembroke and Prawle Point there were as many as six, at Hurst Castle seven, and at Dungeness and Mullaghmore nine. At Valencia, however, there were only two, and at Belmullet and Roche's Point none at all.

**Temperature.**—*Mean at Sea Level* varied from 61° and upwards over Surrey, Hampshire, and portions of Sussex and Devonshire to a little below 55° in the inland parts of the north-west of Ireland and to a little below 53° in the Shetland Islands. These values were everywhere below the average\*, the deficit being small in the south of England, but large in all other districts. A well-marked area of cold is shown over the north-western and central parts of Ireland, where the mean temperature was as much as 4° or 5° below the normal. In the north of Scotland the general distribution was of a fairly normal character, but in other parts of Great Britain the ordinary summer type was greatly marked, while in Ireland it was altogether wanting. *Highest* readings were observed, as a rule, some time between the 4th and 8th; in Scotland the thermometer did not reach 75°, but over England it rose considerably above that point, the highest readings of all being 82° at Cambridge and 81° at Hillington, Loughborough, and in London. *Lowest* readings were observed mostly on the 30th or 31st, when the thermometer fell below 40° in nearly all districts. At Braemar and Markree Castle the absolute minimum was 32°, while at Glenlee and Llandovery it was as low as 31°. *Range* was generally moderate, but at Bawtry, Loughborough, and in London it amounted to 42°, while at Hillington, Cambridge, Strathfield Turgiss, and Llandovery it reached 43°. *Vapour Tension* ranged from 0·35 in. at Sumburgh Head and Aberdeen, and 0·37 in. at Malin Head and Mullaghmore, to between 0·40 in. and 0·45 in. over the south-west of Ireland and the south of England. *Relative Humidity* varied from 79 per cent. at Jersey and less than 85 per cent. over the northern and eastern parts of England, the south and east of Scotland, and most of the coasts of Ireland, to 90 per cent. at Hurst Castle, 91 per cent. at Stornoway, and 93 per cent. at Hawes Junction and Pembroke.

**Rainfall** was less than the average\* in the south-east of Ireland and the eastern, central, and south-western parts of England, the measurements in these localities varying between 1·5 ins. and 2·5 ins. In all other parts of the kingdom, however, there was a decided excess, the amounts being particularly large in the west of Scotland and the northern parts of Ireland and England; at Stonyhurst the total was as much as 7·0 ins. and at Glencarron 9·4 ins., while at Hawes Junction there was as much as 9·7 ins. The number of rainy days was somewhat large, especially in the western and northern districts, where it exceeded 20; at Stornoway there were as many as 25, and at Lairg 26, while at Aberdeen there were no fewer than 27. Amounts exceeding 1 in. in the space of 24 hours were recorded at one time or another in most districts.

**Bright Sunshine** was fairly abundant over the southern parts of the United Kingdom, the percentage of the possible amount of duration being as high as 59 at Jersey, 51 at Pembroke, 49 at Southampton, and 48 at Falmouth, Plymouth, and Valencia. In the north and north-west, however, there was a marked deficiency, the percentage values being as low as 21 at Fort Augustus, 25 at Fort William and Braemar, 26 at Leith, and 27 at Armagh.

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



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.							
			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°720	52°5	47°6	57°0	52°3	41	31st	62	1st
	Wick	29°758	55°5	46°2	59°7	53°0	38	25th, 30th	68	7th
	Stornoway	29°748	54°1	48°5	59°1	53°8	38	31st	68	8th, 9th, 10th
1. SCOTLAND, E.	Nairn	29°759	54°6	48°6	61°7	55°2	39	31st	73	4th
	Aberdeen	29°783	54°8	49°5	62°3	55°9	39	30th	74	5th
	Leith	29°788	55°9	49°9	63°2	56°6	42	24th	73	4th, 5th
2. ENGLAND, N.E.	Shields	29°797	55°3	50°4	64°1	57°3	41	29th	75	4th, 5th
	York	29°838	56°6	49°9	66°1	58°0	38	31st	78	5th, 6th
	Spurn Head	29°828	57°8	53°3	63°3	58°3	46	31st	71	4th
3. ENGLAND, E.	Yarmouth	29°856	59°1	52°8	64°3	58°6	43	31st	70	6th, 15th, 17th
	Cambridge	29°879	58°7	50°2	68°9	59°6	39	30th	82	5th
4. MIDLAND COUNTIES	Loughborough	29°876	57°3	50°5	68°3	59°4	39	30th	81	5th
	Oxford	29°893	57°1	51°5	67°0	59°3	40	30th, 31st	77	5th, 6th
5. ENGLAND, S.	London	29°895	58°9	52°8	68°8	60°8	39	31st	81	5th
	Dungeness	29°884	60°0	53°9	66°5	60°2	39	31st	74	1st, 2nd
	Hurst Castle	29°915	59°5	55°2	66°6	60°9	45	30th	73	12th
6. SCOTLAND, W.	Ardrossan	29°792	57°0	51°7	62°5	57°1	42	31st	71	8th, 10th
7. ENGLAND, N.W.	Hawes Junction*	28°606	51°6	46°9	58°0	52°5	35	31st	68	6th
	Liverpool	29°851	56°9	53°2	63°1	58°2	46	30th	74	4th
	Holyhead	29°858	58°0	53°2	62°7	58°0	49	24th, 27th, 29th, 30th.	69	7th
8. ENGLAND, S.W.	Pembroke	29°896	57°2	54°6	61°0	57°8	48	30th	66	7th, 9th
	Prawle Point	29°925	58°6	52°3	63°0	57°7	45	30th	68	7th, 12th
9. IRELAND, N.	Malin Head	29°800	55°5	52°7	59°6	56°2	48	26th	67	5th
	Donaghadee	29°835	56°2	53°2	63°2	58°2	45	31st	77	4th
	Mullaghmore	29°848	56°3	51°9	61°3	56°6	44	31st	72	8th
	Belmullet	29°868	56°8	52°3	60°7	56°5	43	27th	75	8th
10. IRELAND S.	Parsonstown	29°890	55°0	48°6	63°8	56°2	36	31st	74	8th
	Valencia	29°930	57°7	52°4	63°3	57°9	42	31st	74	8th
	Roche's Point	29°912	57°2	52°6	62°9	57°8	47	29th	67	10th
CHANNEL ISLANDS	Seilly (St. Mary's)	29°923	59°5	54°1	62°5	58°3	50	25th, 27th, 28th	67	17th
	Jersey	29°958	61°4	55°6	66°3	61°0	45	30th	74	10th

\* Hawes Junction is 1,135 feet above mean sea level, and the



REPORTING STATIONS in the BRITISH ISLANDS during the Month of AUGUST 1890.

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.							WIND.												
			Total Fall in the Month.	Maximum Fall in One Day.		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.				
in.	%		ins.	ins.																					
0.346	88	8.2	2.02	0.87	21st	20	0	0	0	0	19	0	5	2	3	2	2	4	5	2	6				
*391	89	6.9	3.65	0.65	26th	20	0	1	1	5	15	0	2	1	5	3	3	4	1	11	1				
*384	91	7.8	4.40	0.62	22nd	25	0	0	1	1	20	2	3	2	2	3	3	7	2	5	4				
*370	87	6.8	4.58	1.32	26th	21	0	0	1	1	11	0	1	0	3	1	0	5	9	1	11				
*351	82	7.0	2.68	0.66	15th	27	0	0	3	1	7	0	1	1	4	2	4	9	2	8	0				
*369	83	6.4	3.13	1.64	12th	19	0	0	1	1	12	0	1	5	3	0	1	4	15	1	1				
*372	85	7.6	4.61	1.90	12th	18	0	0	1	0	14	1	2	1	1	4	4	8	6	5	0				
*380	82	5.2	3.95	0.87	10th	17	0	0	1	10	7	0	1	0	6	0	5	4	12	3	0				
*401	83	5.8	1.82	0.70	10th	17	0	0	3	1	8	4	2	4	1	0	4	9	10	1	0				
*412	82	3.8	1.46	0.32	11th	17	0	0	3	14	1	0	2	5	1	0	4	5	9	4	1				
*406	83	6.7	1.68	0.47	10th	16	0	0	1	3	15	0	4	3	2	0	2	12	6	2	0				
*388	82	5.8	2.04	0.43	10th, 28th	15	0	0	2	4	8	2	1	2	3	1	1	4	14	3	2				
*387	82	5.5	2.36	0.67	19th	19	0	1	1	11	12	0	1	4	2	0	1	8	9	6	0				
*400	81	6.5	2.10	0.67	19th	15	0	0	3	6	11	3	2	5	1	0	0	8	8	4	3				
*417	81	6.8	3.26	1.01	10th	19	0	0	5	0	8	9	4	5	1	0	0	2	12	4	3				
*454	90	5.0	3.52	0.85	26th	19	0	0	0	2	2	7	4	4	2	1	0	4	11	5	0				
*394	85	7.6	2.66	0.55	25th	17	0	0	0	1	15	1	1	4	3	0	3	8	6	4	2				
*358	93	7.6	9.68	1.62	15th	23	0	1	2	0	18	0	4	3	5	3	1	11	4	0	0				
*373	81	7.4	4.51	1.73	10th	20	0	1	3	2	14	0	2	1	3	3	3	6	10	3	0				
*407	84	6.7	2.96	0.75	25th	18	0	0	1	0	8	0	4	2	2	0	1	7	7	5	3				
*434	93	6.2	2.07	0.31	10th	17	0	0	0	0	9	6	2	3	2	3	0	8	7	6	0				
*436	80	6.6	3.35	1.85	9th	17	0	0	1	1	10	6	7	2	1	0	5	4	8	4	0				
*370	84	8.0	3.09	0.62	14th	20	0	0	0	1	21	1	5	1	3	1	3	5	1	12	0				
*389	86	5.5	1.69	0.28	14th	21	0	0	0	0	3	2	3	5	2	1	0	5	11	4	0				
*374	82	7.2	4.91	1.15	22nd	22	0	1	0	2	9	9	2	1	4	1	4	5	5	7	2				
*383	83	7.3	5.35	1.44	14th	21	0	0	0	2	16	0	5	0	4	1	2	4	6	9	0				
*378	88	6.4	3.16	0.88	22nd	21	0	1	0	2	9	0	0	0	0	1	0	10	1	3	16				
*417	87	6.9	2.86	0.43	22nd	20	0	0	1	2	13	2	6	1	1	1	2	5	6	5	4				
*375	80	5.4	2.01	0.30	1st	14	0	0	1	0	4	0	4	0	2	2	0	2	10	11	0				
*451	89	6.8	2.02	0.40	9th	18	0	0	2	0	9	0	4	1	2	1	1	3	11	8	0				
*426	79	5.5	2.06	0.31	27th	14	0	1	2	2	6	3	0	3	2	1	0	6	11	8	0				

barometrical observations at this station are not corrected 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 1890.

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.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	137°0	29
LAIRG	46°6	60°1	53°4	35	31st	72	7th	26	3°06	0°70	26th	—	—
GLENCARRON	47°3	59°1	53°2	37	31st	73	8th	24	9°42	1°45	16th	—	—
FORT AUGUSTUS	49°0	61°1	55°1	35	29th	72	10th	21	2°16	0°62	26th	95°6	21
FORT WILLIAM	49°9	61°3	55°6	36	29th	71	9th, 10th	19	5°81	1°24	4th	116°4	25
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	155°1	33
BRAEMAR	46°4	59°4	52°9	32	31st	70	5th	21	3°49	0°95	12th	114°7	25
LEITH	*	*	*	*	*	*	*	*	*	*	*	†120°4	26
OCHTERTYRE	47°4	65°7	56°6	36	30th	72	2nd	15	2°56	0°73	11th	—	—
MARCHMONT	47°4	61°9	54°7	38	25th	70	2nd	19	5°92	2°10	12th	142°3	31
ALNWICK CASTLE	49°5	60°8	55°2	41	24th, 30th	71	5th	21	6°84	1°87	12th	—	—
DURHAM	48°9	65°0	57°0	39	31st	78	5th	21	4°09	1°81	12th	163°0	36
SCARBOROUGH	51°4	63°4	57°4	45	25th, 29th, 31st	78	5th	22	3°87	0°82	1st	†167°7	—
YORK	*	*	*	*	*	*	*	*	*	*	*	158°2	35
HILLINGTON	49°5	67°0	58°3	38	25th, 30th	81	5th	12	2°66	0°92	10th	175°7	39
GELDESTON	50°5	66°8	58°7	40	30th, 31st	78	5th	17	2°21	0°58	11th	199°7	45
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	185°1	42
ROTHAMSTED	49°9	66°2	58°1	38	31st	79	5th	19	2°38	0°53	19th	—	—
BAWTRY	49°5	66°8	58°2	38	31st	80	6th	19	2°85	1°02	11th	†141°6	31
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†168°2	37
CHEADLE	48°7	62°8	56°8	40	24th	73	4th	17	3°56	0°72	10th	—	—
CHURCHSTOKE	47°8	64°2	56°0	34	30th	72	4th	16	3°75	0°74	1st	149°5	33
HEREFORD	50°3	66°9	58°6	35	30th	76	4th	17	2°22	0°73	9th	—	—
CIRENCESTER	49°1	66°2	57°7	37	24th	75	6th	18	1°92	0°51	9th	168°7	38
OXFORD	*	*	*	*	*	*	*	*	*	*	*	190°3	43
LONDON	*	*	*	*	*	*	*	*	*	*	*	168°6	38
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	†199°6	45
STRATHFIELD TURGIS	50°6	68°7	59°7	36	30th	79	5th	14	2°31	0°81	19th	—	—
HASTINGS	54°2	65°6	59°9	45	25th, 31st	73	1st, 6th	19	4°41	1°35	9th	194°1	44
SOUTHAMPTON	53°1	69°5	61°3	42	30th	79	6th	16	3°63	1°23	9th	217°3	49
STOWELL	51°2	64°6	57°9	40	30th	74	7th	18	3°12	0°88	9th	—	—
LAUDALE	48°7	62°6	55°7	40	29th	72	8th, 9th	24	6°41	1°13	15th	—	—
GLASGOW	49°9	62°0	56°0	41	31st	69	5th, 8th	18	3°98	0°66	22nd	136°9	30
GLENLEE	46°6	63°2	54°9	31	31st	71	8th	20	3°09	0°85	14th	—	—
DOUGLAS	50°5	61°9	56°2	43	31st	66	4th, 6th, 11th	15	3°89	1°28	10th	190°9	42
NEWTON REIGNY	47°1	61°9	54°5	35	30th, 31st	70	4th	22	3°63	0°53	22nd	153°2	34
STONYHURST	50°2	61°9	56°1	39	31st	70	4th, 5th	22	7°04	1°24	22nd	146°6	32
BLACKPOOL	†	63°6	†	†	†	71	8th	20	5°41	1°06	17th	169°2	37
MANCHESTER	50°3	63°2	56°8	42	28th, 29th, 30th, 31st.	73	4th	20	4°88	0°94	10th	—	—
LLANDUDNO	52°8	62°9	57°9	44	30th	73	4th	19	3°95	0°92	10th, 22nd	†170°6	38
LLANDOVERY	49°0	66°3	57°7	31	30th	74	4th	24	4°77	0°75	15th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	226°4	51
ARLINGTON	50°7	63°0	56°9	40	30th	75	7th	22	4°43	0°97	9th	—	—
CULLOMPTON	49°9	67°3	58°6	35	30th	74	4th, 7th	19	3°40	1°03	9th	198°8	45
FALMOUTH	53°5	63°0	58°3	44	30th	69	7th	17	4°81	1°56	18th	210°3	48
PLYMOUTH	54°4	68°5	61°5	46	30th	75	7th	16	2°82	0°81	9th	212°2	48
JERSEY	*	*	*	*	*	*	*	*	*	*	*	259°9	59
LONDONDERY	49°4	63°8	56°6	42	27th	76	8th	24	5°77	1°36	14th	—	—
MARKREE CASTLE	46°3	62°3	54°3	32	31st	73	8th	22	5°04	0°97	14th	157°6	35
BROOKEBOROUGH	45°6	62°2	53°9	34	30th	73	8th	19	3°10	0°61	14th	—	—
ARMAGH	47°2	62°9	55°1	38	31st	70	7th, 8th	20	3°38	0°79	10th	123°5	27
EDGEWORTHSTOWN	47°0	63°2	55°1	37	31st	72	8th	25	3°04	0°60	22nd	—	—
DUBLIN	51°5	62°9	57°2	42	31st	75	4th	20	2°80	0°85	22nd	172°5	38
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	167°7	37
KILKENNY CASTLE	48°4	63°6	56°0	36	29th	74	4th	18	2°89	0°61	10th	—	—
WATERFORD	49°4	65°5	57°5	39	29th	70	7th, 11th	21	2°18	0°31	9th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	214°0	48
KILLARNEY	49°0	63°2	56°1	38	30th, 31st	73	6th	†19	3°88	0°67	10th	—	—
FOYNES	51°1	63°3	57°2	41	30th	74	8th	18	3°60	0°95	22nd	—	—

\* For information see Table XV.

† The bright sunshine values entered to Leith are recorded at Edinburgh, those entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those entered to Loughborough at Thurstaston, and those to Dungeness at Westgate-on-Sea.

‡ Minimum thermometer broken.

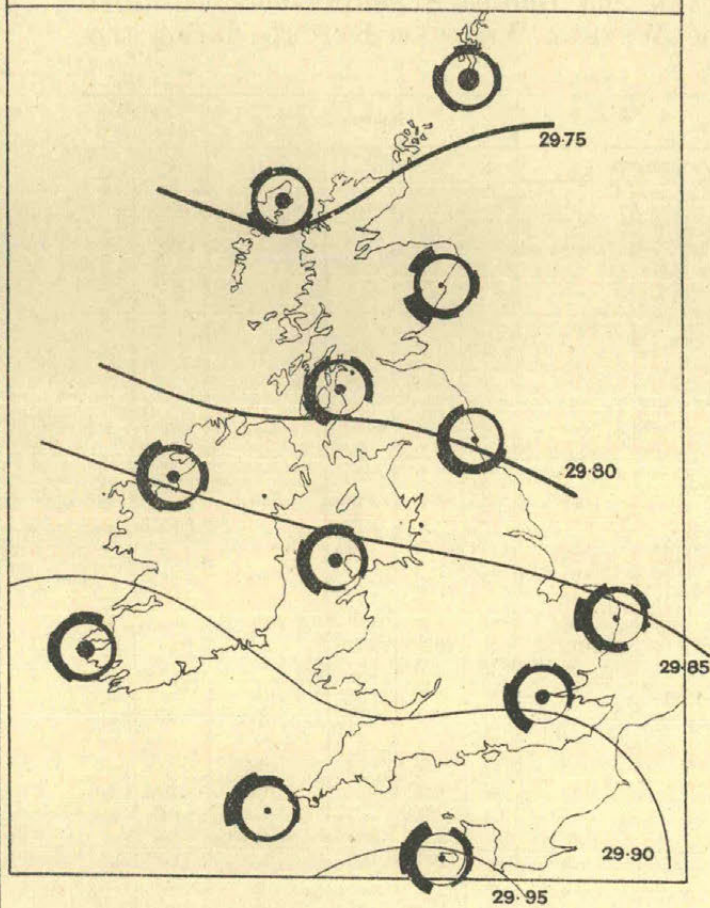


# MONTHLY WEATHER CHART, AUGUST, 1890.

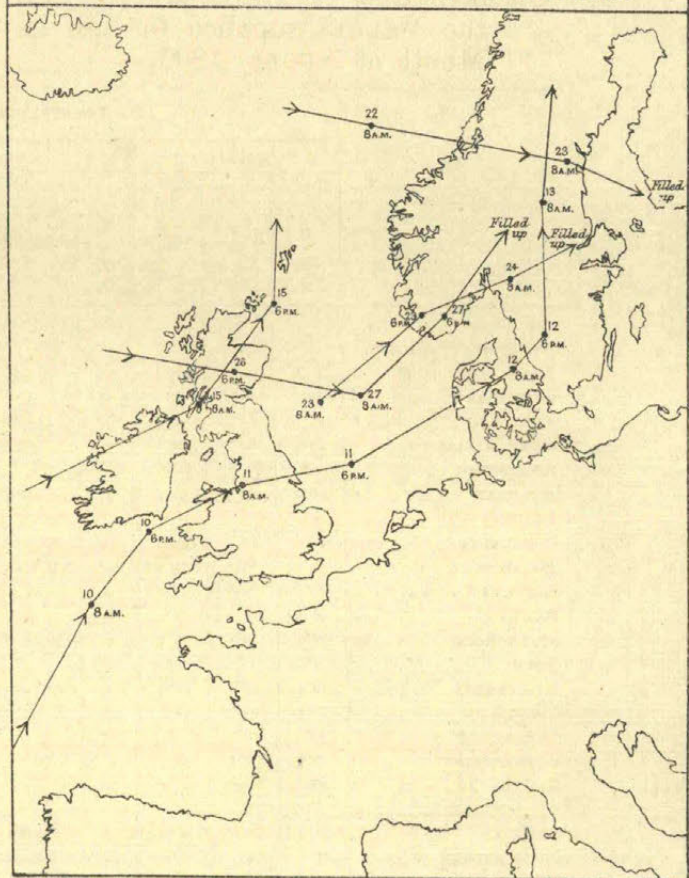
Monthly Summary.

Plate viii.

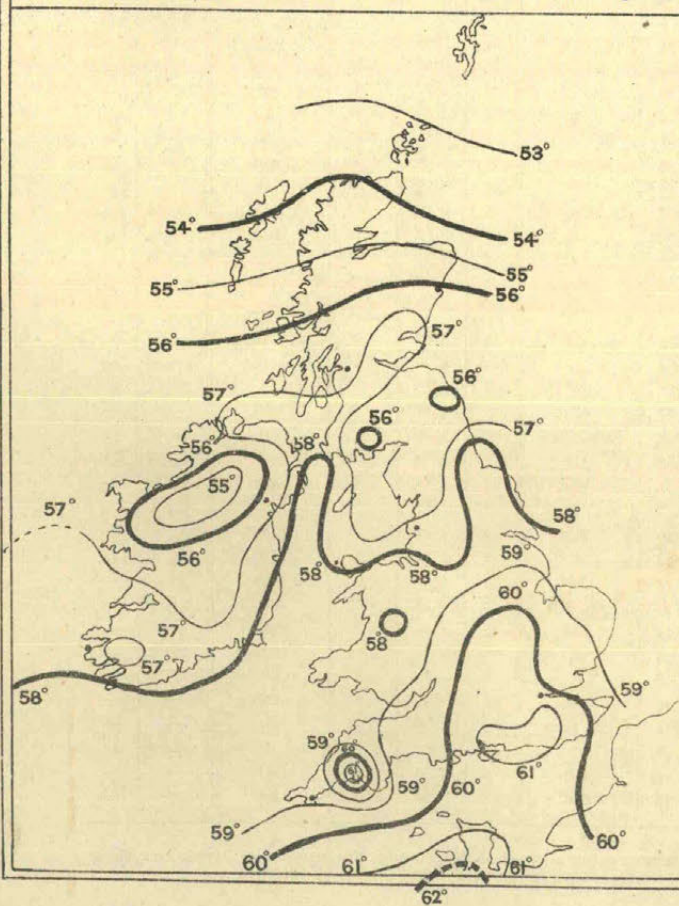
## 1. BAROMETER AND WIND.



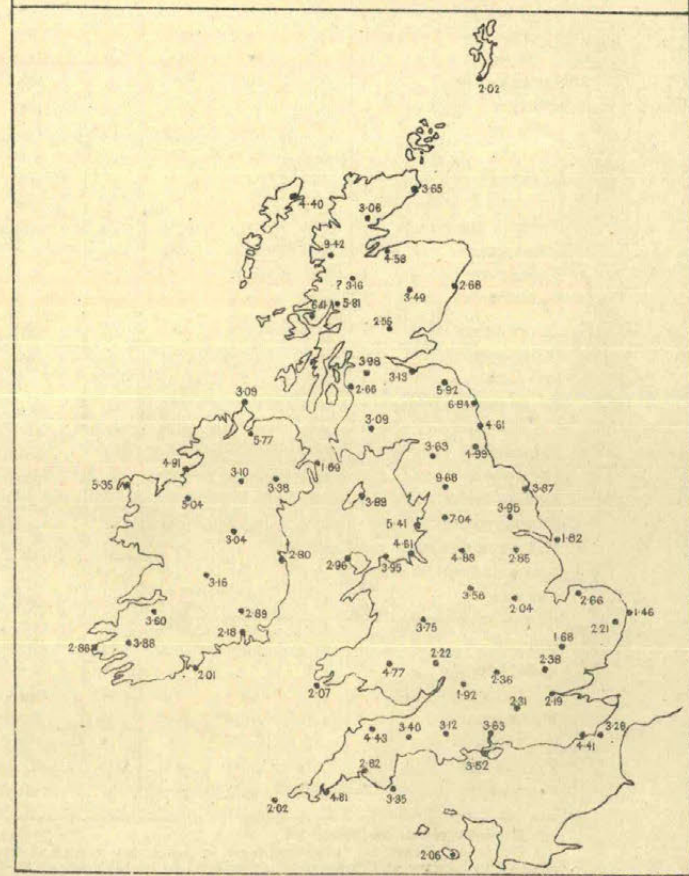
## 2. MOVEMENTS OF DEPRESSIONS.



## 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,

## SEPTEMBER 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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.; JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and 21, DRURY STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

**General Summary.**—The month of September was for the most part fine, warm, and dry. Pressure and temperature were everywhere in excess of the average, the winds were chiefly South-westerly, and rainfall was considerably less than the normal, excepting in the extreme north-western parts of the kingdom. Bright sunshine was abundant, especially in the south. Thunderstorms occurred in many parts of Great Britain between the 17th and 23rd, and heavy rain fell in the west of Scotland and the north-west of England at the close of the period.

**Pressure.**—Mean for the month at 8 a.m. ranged from 30·15 ins. and upwards over the Channel, the south and south-east of England to a little below 29·90 ins. in the Shetlands, the values being everywhere above the average.\* The excess was greatest (0·2 in. and upwards) in the south and east of England, and least (about 0·12 in.) on our extreme north and north-west coasts, the result being that the mean gradient, which was favourable for South-westerly rather than for Westerly winds, was considerably steeper than is usual at this season of the year. *Highest* readings were recorded very generally on the 6th or 7th, when the barometer rose to between 30·3 ins. and 30·5 ins. in all parts of the kingdom. *Lowest* were observed during the passage of the deep depression of the 20th–21st, when the mercury fell below 29·0 ins. in some parts of Ireland, and below 29·5 ins. in many parts of Great Britain. *Range* was somewhat large for the time of year in the west, but moderate in the east.

**Depressions.**—In the course of the month several large depressions travelled along to the westward and northward of our Islands, some in the definite tracks laid down on Map 2, Plate IX., and others in the directions shown by the generalized arrows marked A and B. In only one case did the centre of any disturbance advance over our Islands, and in that instance the path of the system lay over our extreme western and northern coasts.

**Anticyclones.**—Two such systems were observed. The first, a very persistent one, prevailed almost continuously from the 1st to the 14th, and embraced the greater part of western Europe. The second appeared over Spain on the 23rd, and subsequently spread northwards to France and the southern parts of the United Kingdom. After the 28th, however, the system moved away to southern Europe and the Mediterranean.

**Wind** was mainly South-westerly, but considerable local variations were shown. At several of our stations there was a fairly large proportion of winds from the South-eastward, while at Scilly and Jersey there were breezes from every point of the compass. Gales were rare, excepting in the extreme north-west, where they were somewhat numerous: at Mullaghmore there were five, while at Stornoway there were as many as nine.

**Temperature.**—*Mean at Sea Level* varied from 61° and upwards in the Channel Islands and over several parts of the southern and midland counties of England to a little below 54° in the Shetlands. The general distribution over England and Ireland was of an irregular and abnormal character, for although the mean values were in excess of the average\* in all parts of our Islands, the amount of this excess varied greatly in different localities. The largest difference seems to have occurred over the central parts of all three kingdoms, where it amounted to from 3° to 4°; in other localities the excess was rarely more than 2°. *Highest* values were observed as a rule between the 6th and 8th, when the thermometer exceeded 75 in most parts of Great Britain. *Lowest* occurred pretty generally on the 1st, excepting in Ireland and the north of Scotland, where they were registered on irregular dates later in the month. Ground frosts occurred over the inland parts of England, but in only one instance (at Hillington on the 1st) did the sheltered thermometer fall to 32°. *Range* was somewhat large at the inland stations, the greatest amount being 50° at Llandovery, 46° at Hillington, and 45° at Loughborough. *Vapour Tension* ranged from a little below 0·38 in. in the Shetlands and east of Scotland to between 0·44 in. and 0·46 in. on the south and south-west coasts of our Islands. *Relative Humidity* was below 85 per cent. in the east of Scotland and south-east of England, but was as high as 91 per cent. at Sumburgh Head, 92 at Scilly, and 93 at Stornoway, Donaghadee, and Pembroke.

**Rainfall** was exceedingly slight over the eastern and central parts of England, where the aggregate amount was in many cases considerably less than an inch; at Cambridge there was only 0·18 in. and at Spurn Head 0·47 in. In the western and northern parts of the kingdom, however, the amounts were far larger, as much as 8·8 ins. being reported at Glencarron, 8·5 ins. at Laudale, 6·9 ins. at Fort William, 6·4 ins. at Belmullet, and 6·3 ins. at Hawes Junction. Owing mainly to a heavy fall which occurred on the 30th, the aggregate amount in the west of Scotland, the north-west of England, and the extreme north of Ireland was in excess of the average,\* but in all other localities there is a considerable deficit, the amounts of over central and eastern England being less than one-third of the normal.

**Bright Sunshine.**—The amount of bright sunshine was large, except over the extreme western and northern parts of the kingdom. At Southampton the per-centage of the possible amount of duration reached 50 and at Jersey 51, while at Geldeston and Hastings it is as high as 53. At Fort Augustus and Armagh, however, the per-centage value was only 26, at Glasgow 25, and at Valencia Island 22.

\* The averages employed are—*Pressure and Temperature* for 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 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°903	53°5	49°3	57°1	53°2	43	1st, 12th, 30th	65	8th
	Wick	29°949	56°1	49°1	61°4	55°3	40	13th, 30th	73	8th
	Stornoway	29°893	55°2	49°5	60°0	54°8	42	23rd	67	7th, 8th
1. SCOTLAND, E.	Nairn	29°937	56°1	48°8	65°1	57°0	38	13th	75	7th, 8th
	Aberdeen	29°995	56°2	50°3	63°4	56°9	38	1st	75	8th
	Leith	30°010	57°4	50°6	66°4	58°5	42	13th	76	8th
2. ENGLAND, N.E.	Shields	30°051	55°9	50°7	64°9	57°8	40	1st	76	8th
	York	30°105	56°1	51°4	67°8	59°6	37	1st	76	8th, 16th
	Spurn Head	30°111	58°7	54°5	64°5	59°5	47	1st	72	8th
3. ENGLAND, E.	Yarmouth	30°147	58°8	53°6	64°5	59°1	41	1st	72	27th
	Cambridge	30°157	57°9	49°5	71°7	60°6	35	1st	79	27th
4. MIDLAND COUNTIES	Loughborough	30°142	56°0	50°3	70°7	60°5	36	1st	81	8th
	Oxford	30°163	55°5	49°8	68°6	59°2	36	1st	77	9th
5. ENGLAND, S.	London	30°170	57°2	51°3	70°6	61°0	38	1st	77	10th
	Dungeness	30°169	60°4	54°7	67°0	60°9	46	13th	72	6th
	Hurst Castle	30°177	59°0	54°1	66°9	60°5	44	1st	72	10th, 15th
6. SCOTLAND, W.	Ardrossan	30°006	57°0	52°8	62°1	57°5	45	10th	69	7th
7. ENGLAND, N.W.	Hawes Junction*	28°853	53°7	48°7	60°3	54°5	35	1st	71	8th
	Liverpool	30°100	57°5	53°8	64°8	59°3	44	1st	77	8th
	Holyhead	30°086	58°4	54°2	63°8	59°0	48	1st	70	7th, 8th, 13th, 15th.
8. ENGLAND, S.W.	Pembroke	30°119	58°1	55°3	61°5	58°4	48	1st	69	6th
	Prawle Point	30°169	58°7	53°9	63°9	58°9	46	1st	73	6th
9. IRELAND, N.	Malin Head	29°959	55°7	53°2	60°8	57°0	46	30th	71	7th
	Donaghadee	30°040	56°7	53°8	63°3	58°6	49	25th	70	3rd
	Mullaghmore	29°993	56°8	53°7	62°0	57°9	49	5th, 10th, 30th	73	7th
	Belmullet	29°986	57°1	53°6	61°0	57°3	49	10th, 18th, 19th	72	7th
10. IRELAND, S.	Parsonstown	30°048	56°5	51°7	64°1	57°9	42	1st	75	6th
	Valencia	30°056	58°5	54°5	62°4	58°5	48	18th	67	6th
	Roche's Point	30°078	58°0	53°7	63°3	58°5	47	18th	67	26th
CHANNEL ISLANDS	Scilly (St. Mary's)	30°119	59°2	54°0	62°4	58°2	50	20th	67	15th
	Jersey	30°192	61°2	54°6	66°8	60°7	43	1st	77	10th

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



## SUMMARY OF OBSERVATIONS, SEPTEMBER 1890.

XXXV

REPORTING STATIONS in the BRITISH ISLANDS during the Month of SEPTEMBER 1890.

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.
in.	%		ins.	ins.																	
0.375	91	8.1	3.35	0.63	28th	18	0	0	0	0	19	2	0	0	0	8	1	3	9	3	6
*387	85	6.6	2.73	1.00	30th	18	0	0	0	2	13	0	1	0	0	2	13	4	2	7	1
*404	93	8.3	4.02	0.90	29th	24	0	1	0	0	20	9	0	2	0	1	4	12	7	1	3
*372	82	5.9	1.63	0.99	30th	12	0	0	0	1	3	0	0	0	1	0	2	9	4	2	12
*367	81	6.7	1.73	0.66	30th	13	0	0	0	3	12	3	0	1	0	4	8	8	4	5	0
*390	83	5.5	2.42	1.30	30th	9	0	0	1	7	8	4	0	0	1	4	3	3	15	2	2
*382	86	7.8	1.63	0.31	2nd	14	0	0	1	1	16	3	0	0	0	6	4	10	7	2	1
*404	89	6.3	2.07	0.43	21st	14	0	0	0	10	15	0	1	0	2	5	8	5	8	1	0
*420	86	4.7	0.47	0.09	4th	10	0	0	0	5	8	1	1	1	1	3	5	11	7	1	0
*427	87	2.7	1.14	0.45	18th	8	0	0	1	18	0	0	0	1	0	4	3	3	10	6	3
*416	87	5.5	0.18	0.10	18th	4	0	0	0	6	10	0	0	2	0	3	6	11	3	3	2
*405	90	6.5	1.41	0.69	21st	11	0	0	1	4	8	0	0	0	3	9	1	5	9	1	2
*394	89	5.6	1.01	0.68	21st	8	0	0	1	10	11	0	0	2	0	3	7	6	5	2	5
*395	84	6.0	0.83	0.44	23rd	7	0	0	2	9	11	1	0	0	3	2	6	8	8	2	1
*438	84	5.7	0.82	0.27	17th	10	0	0	2	0	2	1	3	2	1	3	3	4	8	2	4
*442	89	6.1	1.01	0.56	21st	7	0	0	0	2	4	3	4	3	4	2	2	5	6	2	2
*405	87	7.6	4.08	0.72	1st, 30th	14	0	0	0	2	17	0	1	1	5	4	3	7	5	3	1
*390	94	7.0	6.25	2.12	30th	19	0	0	1	5	17	0	1	0	3	6	4	9	3	1	3
*405	85	7.3	1.48	0.46	17th	14	0	0	0	4	14	0	1	0	1	10	2	8	5	3	0
*424	87	7.1	2.90	0.79	30th	15	0	0	0	3	15	3	3	0	0	3	5	11	3	2	3
*452	93	6.7	1.60	0.52	21st	19	0	0	0	0	7	4	2	1	3	4	6	7	5	2	0
*438	89	6.6	0.61	0.19	19th	10	0	0	0	3	9	2	1	2	4	1	6	3	6	5	2
*395	89	7.8	5.65	0.85	17th, 30th	22	0	0	0	5	21	4	1	0	0	5	8	7	7	2	0
*427	93	7.7	2.57	0.68	20th	16	0	0	0	0	10	2	1	3	0	3	5	8	10	0	0
*405	87	8.2	4.47	0.76	30th	21	0	0	0	1	15	5	0	0	6	4	4	10	2	3	1
*421	90	9.0	6.35	0.96	30th	23	0	0	0	2	26	2	2	0	3	3	3	6	10	3	0
*404	88	8.2	2.91	0.85	21st	18	0	0	0	1	17	0	0	0	0	7	1	8	0	0	14
*440	89	9.0	3.18	0.63	14th	19	0	0	0	0	23	4	2	0	3	4	4	8	3	2	4
*415	86	6.2	2.11	0.85	20th	12	0	0	1	0	7	3	2	0	1	6	3	7	8	3	0
*461	92	7.4	2.20	1.19	18th	10	0	0	0	1	13	3	3	2	4	2	7	4	6	2	0
*440	82	5.4	0.89	0.34	21st	8	0	0	0	6	9	3	2	2	6	2	2	3	6	6	1

barometrical observations at this station are not reduced 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 1890.

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.						
STORNOWAY	.	.	.	.	.	.	.	.	.	.	.	114.8	30
LAIRG	46.9	62.7	54.8	36	13th	78	7th	19	2.79	1.16	30th	—	—
GLENCARRON	48.9	61.6	55.3	39	30th	76	13th	19	8.84	3.15	25th	—	—
FORT AUGUSTUS	49.9	64.0	57.0	41	13th	75	13th	17	3.43	0.81	30th	98.0	26
FORT WILLIAM	50.9	61.7	56.3	42	13th	71	15th	21	6.91	1.69	25th	102.0	27
ABERDEEN	.	.	.	.	.	.	.	.	.	.	.	133.6	35
BRAEMAR	46.9	61.1	54.0	37	13th	72	7th	16	3.01	1.08	30th	127.5	34
LEITH	.	.	.	.	.	.	.	.	.	.	.	†123.4	33
OCHTERTYRE	48.6	66.8	57.7	40	9th	79	7th	12	3.56	1.54	30th	—	—
MARCHMONT	48.5	64.8	56.7	39	1st	75	7th, 8th	17	2.05	0.50	30th	127.8	34
ALNWICK CASTLE	51.0	62.9	57.0	45	12th	71	8th	14	1.95	0.38	17th	—	—
DURHAM	50.4	67.6	59.0	36	1st	76	8th	13	1.82	0.44	21st	143.6	38
SCARBOROUGH	52.9	64.8	58.9	41	1st	74	8th	11	1.57	0.52	21st	†145.6	39
YORK	.	.	.	.	.	.	.	.	.	.	.	123.5	33
HILLINGTON	48.3	68.2	58.3	32	1st	78	9th	7	0.75	0.24	17th	155.8	42
GELDESTON	50.7	68.3	59.5	38	1st	77	9th	6	0.85	0.32	18th	199.1	53
CAMBRIDGE	.	.	.	.	.	.	.	.	.	.	.	174.5	47
ROTHAMSTED	48.6	67.9	58.3	34	1st	75	10th, 27th	8	1.12	0.60	23rd	168.1	45
BAWTRY	48.2	68.6	58.4	35	1st	78	9th	9	1.21	0.56	21st	†142.3	38
LOUGHBOROUGH	.	.	.	.	.	.	.	.	.	.	.	†159.5	43
CHEADLE	50.5	65.0	57.8	39	1st	73	8th	12	0.75	0.11	20th	—	—
CHURCHSTOCK	48.5	66.5	57.5	35	1st	76	8th	12	0.84	0.34	17th	144.7	39
HEREFORD	49.3	68.5	58.9	35	1st	75	5th, 8th, 27th	9	0.61	0.21	19th	—	—
CIRENCESTER	47.1	67.2	57.2	33	1st	74	16th	12	1.29	0.48	21st	136.2	36
OXFORD	.	.	.	.	.	.	.	.	.	.	.	160.4	43
LONDON	.	.	.	.	.	.	.	.	.	.	.	142.6	38
DUNGENESS	.	.	.	.	.	.	.	.	.	.	.	†182.9	49
STRATHFIELD TURGISS	47.7	69.5	58.6	33	1st	76	10th	9	0.75	0.33	21st	—	—
HASTINGS	54.8	66.3	60.6	44	1st	72	6th	8	1.50	0.46	19th	199.4	53
SOUTHAMPTON	51.6	69.0	60.3	39	1st	78	5th, 10th	7	1.35	0.51	21st	188.5	50
STOWELL	50.4	65.1	57.8	39	1st	72	6th, 9th	11	1.99	0.48	21st	159.6	43
LAUDALE	50.3	62.8	56.6	44	29th, 30th	72	7th	23	8.49	2.15	25th	—	—
GLASGOW	50.9	62.2	56.6	44	10th	69	7th	15	4.23	1.12	30th	92.7	25
GLENLEE	48.2	63.1	55.7	37	10th	69	7th, 8th	20	4.37	0.73	30th	—	—
DOUGLAS	51.2	62.5	56.9	43	1st, 19th	67	5th, 7th, 8th	17	4.06	1.13	30th	128.0	34
NEWTON REIGNY	49.5	64.4	57.0	36	1st	74	7th, 8th	13	3.30	1.61	30th	139.3	37
STONYHURST	51.3	63.0	57.2	39	1st	73	8th	17	5.16	1.57	30th	118.0	32
BLACKPOOL	†	64.5	†	†	†	76	8th	16	3.35	1.23	30th	79.0	21
MANCHESTER	51.4	64.8	58.1	39	1st	75	8th	15	1.73	0.47	30th	—	—
LLANDUDNO	54.7	65.1	59.9	48	13th	75	8th	15	1.68	0.40	30th	113.6	30
LLANDOVERY	48.1	69.5	58.8	33	1st	83	6th	17	2.36	0.40	30th	—	—
PEMBROKE	.	.	.	.	.	.	.	.	.	.	.	131.1	35
ARLINGTON	50.3	63.9	57.1	38	1st	73	9th	16	2.54	0.57	19th	—	—
CULLOMPTON	48.6	67.3	58.0	34	1st	75	6th, 27th	12	0.99	0.31	23rd	147.9	40
FALMOUTH	53.5	63.0	58.3	46	1st	70	6th	10	2.50	1.42	17th	156.0	42
PLYMOUTH	54.2	67.0	60.6	42	1st	75	6th	6	1.16	0.72	17th	162.6	44
JERSEY	.	.	.	.	.	.	.	.	.	.	.	190.6	51
LONDONDERRY	50.8	64.2	57.5	43	10th	76	7th	18	5.40	1.12	17th	—	—
MARKREE CASTLE	50.2	63.5	56.9	39	10th	73	7th	20	3.65	0.84	21st	74.8	20
BROOKEBOROUGH	49.9	63.2	56.6	39	10th, 25th	74	7th	19	4.29	0.69	30th	—	—
ARMAGH	50.6	64.0	57.3	39	19th	74	8th	17	3.05	0.60	30th	97.6	26
EDGEWORTHSTOWN	50.6	63.8	57.2	41	25th	73	7th	21	3.34	0.76	21st	—	—
DUBLIN	54.4	64.7	59.6	48	23rd	71	7th	14	2.47	0.88	20th	126.9	34
PARSONSTOWN	.	.	.	.	.	.	.	.	.	.	.	98.3	26
KILKENNY CASTLE	51.8	64.4	58.1	43	23rd	72	27th	12	2.58	0.81	20th	—	—
WATERFORD	51.6	65.5	58.6	43	18th	72	3rd, 5th, 11th, 27th.	10	2.32	0.86	20th	—	—
VALENCIA	.	.	.	.	.	.	.	.	.	.	.	82.8	22
KILLARNEY	52.3	64.0	58.2	41	18th	70	8th	16	3.03	0.55	20th	—	—
FOYNES	53.6	63.4	58.5	46	9th	71	7th	21	3.27	0.99	20th	—	—

\* For information see Table XVII.

† The bright sunshine values entered to Leith are recorded at Edinburgh, those entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those entered to Loughborough at Thurstaston, and those entered to Dungeness at Westgate-on-Sea.

‡ Thermometer broken.

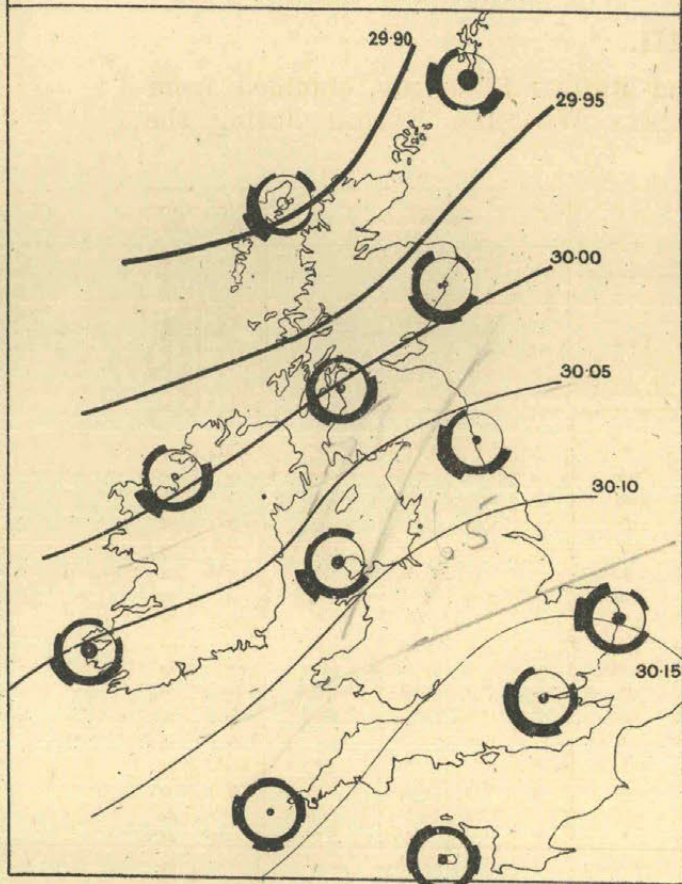


# MONTHLY WEATHER CHART SEPTEMBER, 1890.

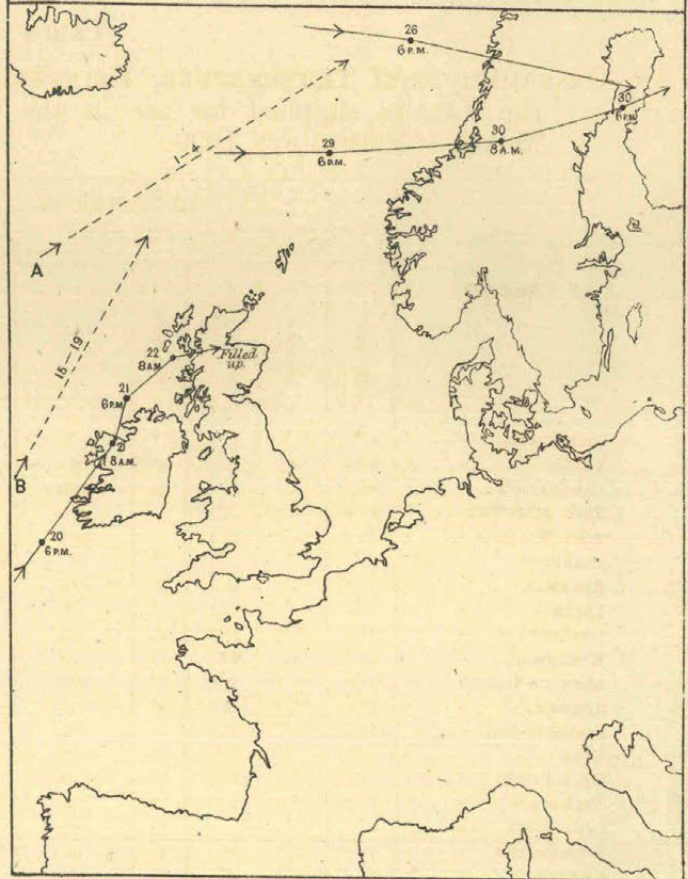
Monthly Summary.

Plate IX.

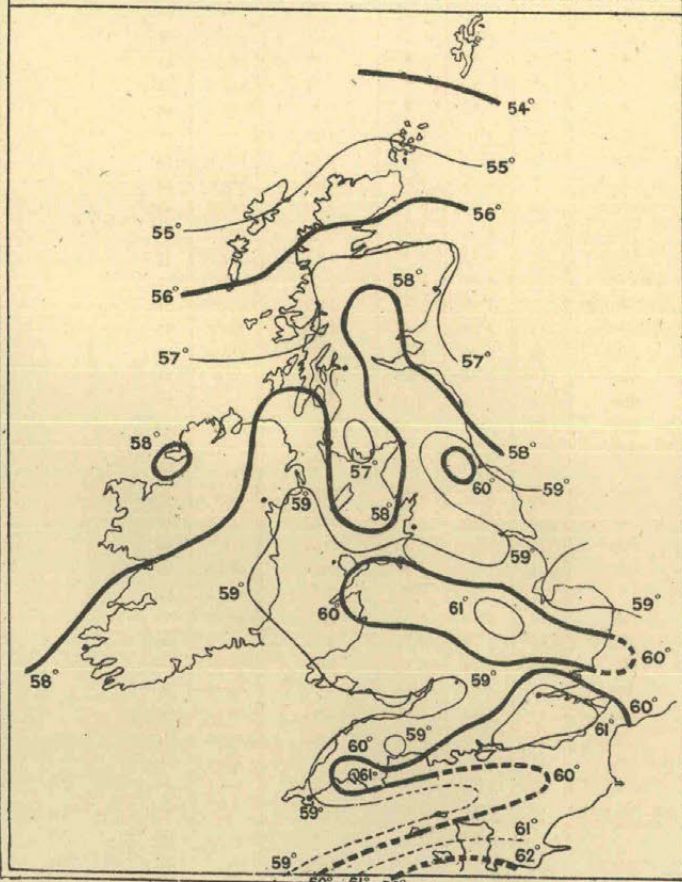
## 1. BAROMETER AND WIND.



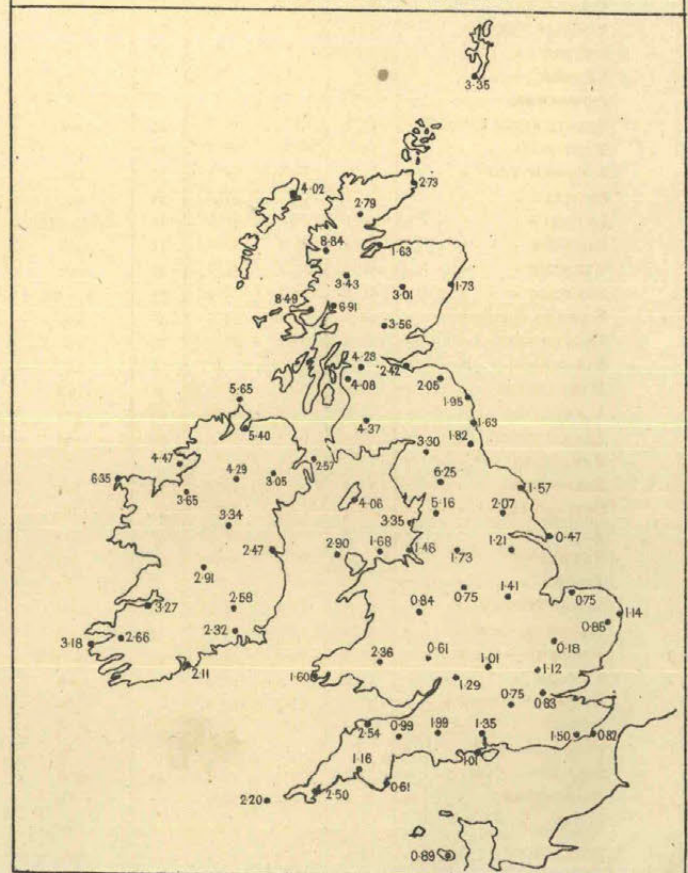
## 2. MOVEMENTS OF DEPRESSIONS.



## 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,

## OCTOBER 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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.; JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and 21, DRURY STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

**General Summary.**—The weather of October was fair and dry in the early part of the month excepting in the west of Scotland, where exceedingly heavy rains fell during the first few days. Towards the middle of the period conditions became less settled, and at its close the weather was unusually cold for the time of year. Pressure and temperature were everywhere in excess of the average; the winds were mainly Westerly; rainfall was very deficient over England and the east of Ireland, slightly less than the average in the west of Ireland, but greatly in excess over the west of Scotland. The amount of bright sunshine, although deficient in the extreme west and north of the kingdom, was in excess over the south of England. Thunder and lightning occurred in various parts of the country about the middle of the month, and brilliant aurora was seen in Scotland.

**Pressure.**—*Mean for the month at 8 a.m.* varied from between 30·15 ins. and 30·20 ins. over the south of Ireland, the south-west of England, to a little below 29·75 ins. in the Shetlands, and was everywhere in excess of the average.\* In the extreme north of Scotland the difference from the normal did not amount to more than 0·10 in. or 0·12 in., and in the Shetlands it was almost inappreciable, but over the south-western parts of the United Kingdom the values were more than 0·30 in. above the average. The mean gradient was therefore steeper than usual, and was in favour of winds from the northward rather than from the southward of west. *Highest* readings were recorded on the 22nd, when the barometer rose to between 30·40 ins. and 30·55 ins. in nearly all parts of the country. *Lowest* were observed very generally on the night of the 15th, when the barometer fell to about 29·0 ins. in the north of Scotland, but in other parts of the kingdom the minimum was not so low. *Range* was rather large in the extreme north, moderate elsewhere.

**Depressions.**—Numerous depressions, of considerable size and depth, advanced over Scandinavia from the westward or north-westward, and in many cases the systems spread southwards over the North Sea to our eastern coasts, the most striking instance of this kind occurring between the 15th and 18th. At the very commencement, and also at the extreme end of the month, the centre of a well-marked, though somewhat shallow, depression travelled eastwards directly across Scotland.

**Anticyclones.**—Several such systems were observed. In the majority of cases the anticyclones advanced over our Islands from the westward, and afterwards moved away in a southerly direction, but on the 12th and 13th a large system spread northwards from France. In no case did the anticyclone continue in the neighbourhood of our Islands for more than three or four days at a time.

**Winds** were chiefly from the Westward, but in the extreme north of Scotland there was a fair proportion of Northerly breezes, while at Scilly and Jersey there were frequent instances in which the wind was North-easterly or Easterly. Gales were rather numerous, excepting on our southern coasts; at Spurn Head there were 9, at Mullaghmore 12, and at Stornoway 13.

**Temperature.**—*Mean at Sea Level* varied from between 54° and 55° on our extreme south-west coasts to a little below 50° over South Wales, the northern and eastern parts of England, and some parts of central Ireland, and to a little below 47° in the Shetland Islands. Its relative distribution was fairly normal, but the actual values were in all cases above the average,\* the excess ranging in most cases from one to two degrees. In the central and south-eastern parts of Scotland, however, it amounted to about three degrees. *Highest* values were recorded at various times during the earlier part of the month; in the majority of places they occurred between the 9th and 13th. *Lowest* were observed very generally on the 27th or 28th, when sharp frost occurred in nearly all parts of the kingdom. The minima over England were the lowest recorded in October for very many years past; at Loughborough the thermometer fell to 20°, at Newton Reigny to 21°, and at Hawes Junction and Strathfield Turgiss to 22°. *Range* was large, especially at the inland stations: viz., 49° at Loughborough, 47° at Rothamsted, 46° at Oxford, and 45° at Bawtry and Strathfield Turgiss. *Vapour Tension* ranged from 0·28 in., or less over the north and east of Scotland and the central parts of England, and 0·30 in. over central Ireland to between 0·38 in. and 0·40 in. in our extreme south-west coasts. *Relative Humidity* was below 85 per cent. on the north-east coasts of Great Britain and also over North Wales and the south-east of Ireland. At Donaghadee and Scilly, however, the per-centage was as high as 92°, at Hurst Castle 93°, and at Stornoway 96°.

**Rainfall** was less than an inch and a half over the east of Ireland, and over the greater part of England, the lowest values of all being 0·6 in. at Dublin, 0·7 in. at Scilly, and 0·9 in. at Bawtry. On the west coast of Ireland there were more than 4 ins., while in the west of Scotland, where an exceedingly heavy fall occurred at the commencement of the month, the amounts were considerably over 12 ins. At Glencarron, where the aggregate quantity was no less than 23·1 ins., the rainfall of the 2nd amounted to 5·9 ins., a fall of 3·5 ins. being marked on the same day at Fort William. In comparison with the average\* the values showed a marked deficiency over Ireland and England, but a considerable excess in the west of Scotland, and a less decided excess in the northern and eastern parts of that country. Over England the amounts were in most cases less than half the average.

**Bright Sunshine** was very deficient in the extreme west and north, the per-centage of the possible amount of duration being as low as 14 at Fort Augustus, 17 at Fort William, 18 at Stornoway, and 21 at Glasgow and Markree Castle. Over the southern and eastern parts of England, however, more than 40 per cent of the possible quantity was recorded, the highest values of all being 50 at Geldeston and 44 at Rothamsted.

\* The averages employed are—*Pressure and Temperature* for the 20 years, 1861–80; *Rainfall* for the 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 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.
0. SCOTLAND, N.	Sumburgh Head	ins. 29'741	46°5	41°9	50°6	46°3	30	27th	56
	Wick	29'845	47°0	41°1	52°9	47°0	30	26th, 27th, 28th.	63
	Stornoway	29'863	47°6	42°3	52°7	47°5	30	27th, 28th	59
1. SCOTLAND, E.	Nairn	29'875	47°4	42°5	54°0	48°3	29	28th	65
	Aberdeen	29'883	46°9	42°4	55°3	48°9	32	27th, 28th	70
	Leith	29'939	48°9	44°0	56°6	50°3	30	28th	66
2. ENGLAND, N.E.	Shields	29'955	48°4	42°5	55°9	49°2	27	28th	67
	York	30°024	47°5	41°9	56°4	49°2	26	28th, 29th	66
	Spurn Head	30°002	50°2	46°4	55°6	51°0	35	27th	66
3. ENGLAND, E.	Yarmouth	30°030	48°9	44°0	55°9	50°0	30	28th	65
	Cambridge	30°094	47°6	41°0	59°1	50°1	28	28th	72
4. MIDLAND COUNTIES	Loughborough	30°087	45°6	41°2	58°1	49°7	20	28th	69
	Oxford	30°125	45°8	41°5	57°5	49°5	23	28th	69
5. ENGLAND, S.	London	30°117	46°7	41°9	58°3	50°1	24	28th	68
	Dungeness	30°103	49°1	43°5	58°2	50°9	23	28th	67
	Hurst Castle	30°156	49°9	45°6	58°5	52°1	32	28th	64
6. SCOTLAND, W.	Ardrossan	29'977	50°1	45°3	55°2	50°3	29	28th	59
7. ENGLAND, N.W.	Hawes Junction*	28'777	45°1	40°4	49°7	45°1	22	28th	56
	Liverpool	30°067	49°8	46°1	55°7	50°9	34	28th	63
	Holyhead	30°080	52°7	49°4	56°8	53°1	38	26th, 27th	62
8. ENGLAND, S.W.	Pembroke	30°146	52°4	49°5	56°2	52°9	37	27th	60
	Prawle Point	30°177	52°6	47°0	58°4	52°7	35	27th, 28th	65
9. IRELAND, N.	Malin Head	29'939	50°3	47°3	54°4	50°9	36	27th	59
	Donaghadee	30°039	49°6	45°3	57°4	51°4	33	26th	64
	Mullaghmore	30°061	51°2	47°9	55°7	51°8	38	26th	62
	Belmullet	30°117	52°2	48°4	55°6	52°0	34	26th	60
10. IRELAND, S.	Parsonstown	30°124	48°2	43°7	57°1	50°4	32	18th, 19th	64
	Valencia	30°178	55°2	51°0	58°6	54°8	41	26th, 27th	63
	Roche's Point	30°163	53°3	49°0	58°6	53°8	39	27th	64
CHANNEL ISLANDS	Scilly (St. Mary's)	30°180	54°9	50°2	57°8	54°0	41	27th	63
	Jersey	30°193	53°2	47°4	60°1	53°8	37	28th	71

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



## SUMMARY OF OBSERVATIONS, OCTOBER 1890.

xxxix

REPORTING STATIONS in the BRITISH ISLANDS, during the Month of OCTOBER 1890.

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

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

TENSION OF VAPOUR.	RELATIVE HUMIDITY.	AMOUNT OF CLOUD.	RAINFALL.		Date.	WEATHER.							WIND.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
			Total Fall in the Month.	Maximum Fall in One Day.		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.	Calas.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
in.	%		ins.	in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</

barometric observations at this station are not corrected 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 1890.

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	*	*	*	*	*	*	*	*	*	*	*	55.2	18
LAIRG	41.4	52.2	46.8	25	26th	64	13th	28	6.00	1.38	and	—	—
GLENCARRON	42.2	51.6	46.9	28	28th	59	12th	29	23.11	5.90	2nd	—	—
FORT AUGUSTUS	42.9	53.8	48.4	28	28th	62	11th	24	6.78	1.96	2nd	43.3	14
FORT WILLIAM	45.0	53.4	49.2	33	27th	59	11th	24	12.58	3.54	2nd	52.0	17
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	103.7	33
BRAEMAR	41.0	50.9	46.0	28	27th	61	10th	21	4.45	1.15	16th	81.5	26
LEITH	*	*	*	*	*	*	*	*	*	*	*	77.9	25
OCHTERTYRE	41.1	56.4	48.8	27	27th	66	5th	17	2.16	0.62	30th	—	—
MARCHMONT	42.1	54.2	48.2	28	28th	65	10th	17	2.77	0.45	25th, 30th	96.3	30
ALNWICK CASTLE	44.9	54.4	49.7	31	27th	62	4th	12	2.50	0.81	24th	—	—
DURHAM	42.8	55.7	49.3	28	28th	66	12th	15	1.48	0.33	26th	123.2	39
SCARBOROUGH	44.0	54.1	49.1	31	28th	64	4th	15	2.21	0.73	26th	104.5	33
YORK	*	*	*	*	*	*	*	*	*	*	*	90.6	28
HILLINGTON	41.1	57.4	49.3	28	28th	69	4th	14	1.48	0.30	31st	125.0	39
GELDESTON	40.9	58.4	49.7	27	28th	70	4th, 12th	16	1.65	0.33	26th	160.9	50
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	130.7	43
ROTHAMSTED	39.3	57.0	48.2	22	28th	69	3rd	13	1.45	0.40	7th	142.3	44
BAWTRY	41.5	57.5	49.5	24	27th	69	12th	11	0.86	0.20	28th	115.5	36
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	127.0	39
CHEADLE	41.7	54.3	48.0	29	27th	65	5th	17	2.30	0.47	25th	—	—
CHURCHSTOCK	40.6	56.0	48.3	29	20th, 28th	70	12th	17	1.62	0.27	7th, 15th	105.9	33
HEREFORD	41.4	57.1	49.3	30	28th	66	4th	13	1.53	0.36	6th	—	—
CIRENCESTER	40.7	56.5	48.6	29	28th	66	13th	12	1.45	0.48	25th	127.8	39
OXFORD	*	*	*	*	*	*	*	*	*	*	*	136.2	42
LONDON	*	*	*	*	*	*	*	*	*	*	*	102.2	31
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	120.2	37
STRATHFIELD TURGISSE	40.2	58.6	49.4	22	28th	67	4th	16	1.16	0.31	25th	—	—
HASTINGS	45.5	57.6	51.6	30	28th	67	13th	15	1.46	0.30	25th	134.3	41
SOUTHAMPTON	43.1	59.3	51.2	28	28th	70	14th	14	0.92	0.26	15th, 25th	136.3	42
STOWELL	42.6	56.8	49.7	30	28th	66	13th	16	1.87	0.36	25th	110.2	34
LAUDALE	43.8	56.2	50.0	31	26th, 27th, 28th	68	3rd	28	12.68	1.74	2nd	—	—
GLASGOW	44.0	53.5	48.8	29	28th	59	5th, 10th, 12th	19	2.32	0.64	30th	64.9	21
GLENLEE	41.7	55.1	48.4	23	28th	63	11th, 12th	20	3.60	0.57	14th	—	—
DOUGLAS	45.7	55.7	50.7	28	28th	62	4th, 10th	17	2.32	0.45	6th	104.1	32
NEWTON REIGNY	41.6	54.1	47.9	21	28th	65	12th	20	2.81	0.51	14th	88.8	28
STONYHURST	43.1	53.7	48.4	24	28th	60	5th, 7th, 12th	16	5.20	0.80	24th	88.8	28
BLACKPOOL	46.0	55.1	50.6	28	28th	62	5th	14	2.33	0.43	16th	70.6	22
MANCHESTER	42.3	54.4	48.4	24	28th	66	12th	18	2.94	0.46	16th	—	—
LLANDUDNO	47.5	56.8	52.2	37	26th	66	10th	16	1.74	0.32	25th	—	—
LLANDOVERY	40.1	57.4	48.8	27	19th	70	12th	27	4.80	1.17	6th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	103.4	32
ARLINGTON	43.4	56.8	50.1	32	28th	66	12th	20	5.52	0.80	7th	—	—
CULLOMPTON	42.2	59.5	50.9	30	19th, 20th	67	13th, 14th	17	1.60	0.61	31st	133.9	41
FALMOUTH	47.9	56.9	52.4	38	27th	62	4th	17	2.18	0.50	26th	136.7	42
PLYMOUTH	45.2	58.3	52.0	35	28th	64	12th	14	1.37	0.31	27th	132.1	40
JERSEY	*	*	*	*	*	*	*	*	*	*	*	134.0	41
LONDONERRY	45.8	55.8	50.8	34	26th	62	10th	20	3.54	0.51	15th	—	—
MARKREE CASTLE	45.2	56.2	50.7	32	8th	65	4th	23	4.18	0.63	15th	65.9	21
BROOKBOROUGH	42.8	55.3	49.1	31	28th	62	3rd	14	2.54	0.43	6th	—	—
ARMAGH	43.9	56.2	50.1	32	26th, 27th	63	5th	13	1.75	0.32	6th	72.1	22
EDGEWORTHSTOWN	43.6	56.3	50.0	33	26th	63	10th	21	2.29	0.50	15th	—	—
DUBLIN	46.1	57.2	51.7	34	27th	65	5th	11	0.64	0.16	25th	116.5	36
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	98.9	31
KILKENNY CASTLE	44.6	57.6	51.1	33	2nd, 27th	66	3rd	14	2.10	0.88	6th	—	—
WATERFORD	45.4	58.6	52.0	35	2nd, 26th, 27th	65	4th, 7th	11	1.46	0.58	6th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	80.2	25
KILLARNEY	47.1	59.3	53.2	31	1st	70	1st	17	3.37	0.64	31st	—	—
FOYNES	48.0	57.7	52.9	38	26th	65	3rd	19	2.90	0.68	6th	—	—

\* For information see Table XIX.

† The bright sunshine values entered to Leith are recorded at Edinburgh, those entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those entered to Loughborough at Thurstaston, and those to Dungeness at Westgate-on-Sea. The bright sunshine values at Llandudno are doubtful.

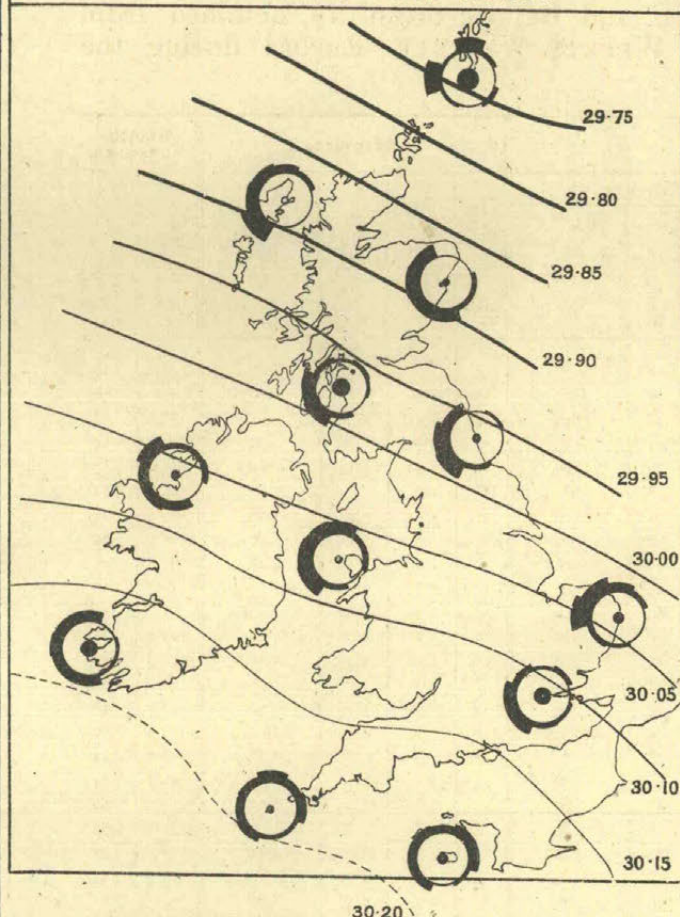


# MONTHLY WEATHER CHART, OCTOBER, 1890.

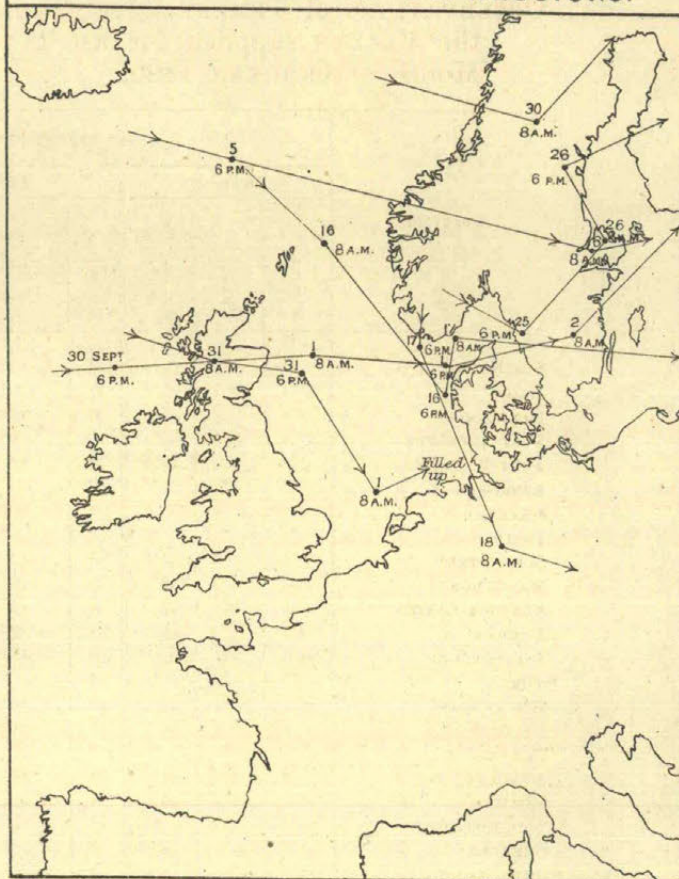
Monthly Summary

Plate X.

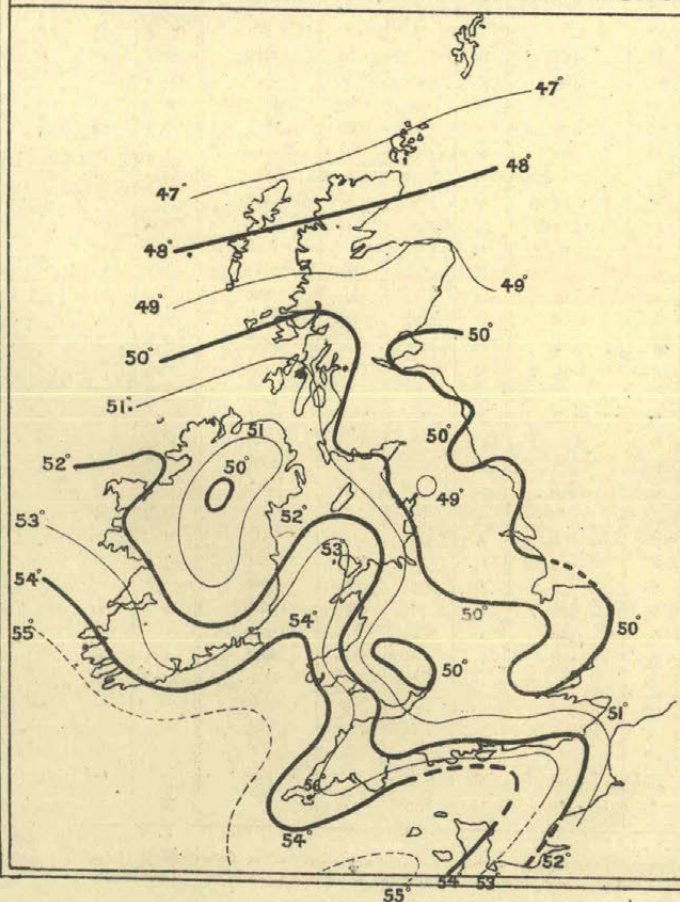
## 1. BAROMETER AND WIND.



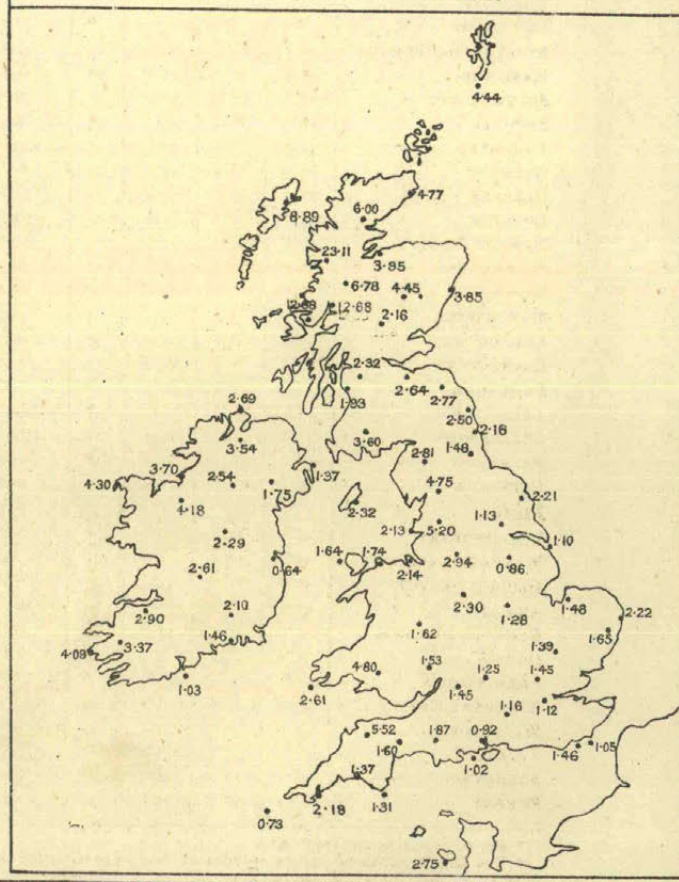
## 2. MOVEMENTS OF DEPRESSIONS.



## 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,

## NOVEMBER 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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.; JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and 21, DRURY STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 134, GRAFTON STREET, DUBLIN.

**General Summary.**—The weather of November was very changeable and unsettled; heavy gales occurred in many districts on the 6th and 7th, and snowstorms at the close of the month. Lightning was seen in various parts of the kingdom about the middle of the period, and bright aurora in the north of Scotland. Pressure was below the average, excepting in the extreme south and south-west; temperature was a little above its ordinary height; the winds were mainly Westerly; and rainfall was greatly in excess in all localities excepting the inland parts of Southern England. Bright sunshine was fairly abundant in the west and south, but somewhat deficient in the north and east.

**Pressure.**—*Mean for the Month at 8 a.m.* varied from between 29·90 ins. and 29·95 ins. over the extreme south and south-west of our Islands and the English Channel, to a little below 29·65 ins. in the Shetlands and Hebrides. In the localities first mentioned the values did not differ much from the average,\* but in other districts they were below it, and as the difference was greatest (0·10 in. to 0·12 in.) in the extreme north, the mean gradient was steeper than usual. *Highest* readings were recorded on the 19th or 20th over the southern parts of the kingdom, but on the 26th or 27th in the more northern districts. In the former case the barometer rose to between 30·4 ins. and 30·5 ins., but in the latter it was not much above 30·3 ins. *Lowest* readings were observed as a rule during the passage of the deep depression of the 6th–7th, when the barometer fell below 29·0 ins. in nearly all parts of the country. In the extreme north, however, the lowest readings were recorded on the night of the 1st. *Range* was somewhat large.

**Depressions** were numerous in the early part of the month, the most important being that of the 6th–7th, in which case the centre passed directly across Ireland and England to the Dutch coasts. During the latter part of the period the weather was somewhat quieter, a striking exception being observed, however, between the 22nd and 25th, when a large and very complex depression advanced over Scandinavia from the north-westward and travelled across Europe to the south of Russia. The system was marked by the prevalence of strong winds or gales over nearly the whole Continent, and exceedingly heavy rains in Germany and Austria.

**Anticyclones.**—Two only were observed in the neighbourhood of our Islands. Between the 15th and 18th one of these systems extended over the United Kingdom from the southward, and ultimately spread north-eastward to Scandinavia; on the 19th and 20th it gradually receded in a southerly direction. In the second instance a large high-pressure area extended over us from the north-eastward in the rear of the depression of the 22nd–25th. At the close of the month it was moving south-eastwards, and breaking up.

**Winds** varied greatly in direction, but were, as a rule, from some Westerly point (South-west to North-west). Gales were numerous, 10 or more being reported at several of our northern, western, and southern stations; at Stornoway there were 19 and at Mullaghmore 20. The gale which occurred with the depression of the 6th–7th was severe in the north and north-west.

**Temperature.**—*Mean at sea level* varied from 49° and upwards in the Scilly and Channel Islands to a little below 41° in Lincolnshire and many of the inland parts of Scotland, and patches of relative cold being shown over South Wales and some parts of Central Ireland. The relative distribution agreed fairly well with the normal, but the actual values were a little above the average\* excepting in isolated parts of England, where there was a slight deficiency. In the majority of cases the excess did not amount to more than one degree. *Highest* readings were observed on somewhat irregular dates, but over the kingdom generally they occurred on the 19th. *Lowest* readings were recorded very generally between the 27th and 30th, and were exceptionally low; hard frost occurred in nearly all districts, and in Kent and Surrey it was particularly severe. At two of our stations the thermometer fell to 14°, and at Braemar to 10°. The daily maxima at this time were unusually low for the season. *Range* was large, especially over the inland parts of Great Britain; at Southampton and Cullompton it amounted to 43°, at Braemar to 44°, at Gleddeston to 45°, and at Cambridge to 46°. *Vapour Tension* ranged from less than 0·22 in. in the east of Scotland to 0·30 in. at Valencia and to 0·32 in. at Scilly. *Relative Humidity* was least over the Channel Islands, the north of Ireland, and the north-east coasts of Great Britain, the lowest per-centage of all being 83 at Mullaghmore and Jersey. Over the greater part of England, however, and on our extreme south-western, western, and northern coasts there was rather more than 90 per cent.

**Rainfall** was considerably in excess of the average,\* except over the inland parts of southern England, where the total amount for the month was less than two inches. In Ireland, Wales, and the north-west of England the aggregate varied from four to eight and a half inches, while in the Isle of Man and the west of Scotland it exceeded ten ins., the heaviest amount of all being 13·1 ins. at Glenlee. The largest falls in 24 hours were 2·6 ins. at Douglas (Isle of Man), 2·2 ins. at Stonyhurst, and 2·1 ins. at Glenlee. The number of rainy days was very large; at Laudale, Holyhead, and Edgeworthstown there were 28, and at Valencia 29.

**Bright Sunshine** was fairly abundant in the western and southern parts of the kingdom, the per-centage of the possible amount being as high as 33 at Falmouth and Dublin, and 32 at Pembroke. In the northern and eastern districts, however, the per-centage was in many cases below 20; at Fort Augustus the value was only 13, and at Fort William 14. In London, also, the per-centage was (locally) as low as 14.

\* 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.							
			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°637	44°4	40°2	47°2	43°7	35	23rd, 26th	55	19th
	Wick	29°688	42°4	38°0	46°9	42°5	32	27th, 28th	54	19th
	Stornoway	29°644	43°6	37°8	47°6	42°7	32	3rd, 8th, 27th	54	18th
1. SCOTLAND, E.	Nairn	29°699	40°6	34°8	47°2	41°0	19	27th	56	18th, 19th
	Aberdeen	29°745	40°5	36°7	46°6	41°7	23	28th	58	19th
	Leith	29°751	41°4	35°8	48°8	42°3	26	27th	60	19th
2. ENGLAND, N.E.	Shields	29°760	42°1	36°1	48°6	42°4	25	30th	61	19th
	York	29°811	40°3	34°5	48°3	41°4	24	27th	57	18th, 19th
	Spurn Head	29°791	42°7	38°8	47°4	43°1	29	27th, 30th	55	19th
3. ENGLAND, E.	Yarmouth	29°814	42°3	36°9	46°6	41°8	23	30th	56	23rd
	Cambridge	29°858	40°9	34°9	49°2	42°1	15	30th	61	23rd
4. MIDLAND COUNTIES	Loughborough	29°843	40°1	35°8	49°2	42°5	25	28th, 30th	59	20th, 23rd
	Oxford	29°881	40°5	36°7	48°5	42°6	21	29th	56	2nd, 14th, 19th, 22nd, 23rd.
5. ENGLAND, S.	London	29°867	41°9	37°3	49°8	43°6	21	28th, 29th	59	23rd
	Dungeness	29°855	43°3	38°2	51°0	44°6	17	28th	58	15th, 17th
	Hurst Castle	29°906	44°1	39°9	50°8	45°4	20	29th	58	15th, 16th
6. SCOTLAND, W.	Ardrossan	29°752	43°6	38°8	48°6	43°7	25	28th	55	1st
7. ENGLAND, N.W.	Hawes Junction*	28°548	37°6	32°6	43°5	38°1	18	27th	52	14th, 19th
	Liverpool	29°823	42°5	39°5	48°7	44°1	27	27th, 30th	59	19th
	Holyhead	29°824	46°4	43°5	50°8	47°2	30	27th	57	23rd
8. ENGLAND S.W.	Pembroke	29°887	47°4	44°3	50°7	47°5	28	27th	56	1st, 14th
	Prawle Point	29°934	44°8	40°0	50°5	45°3	19	27th	57	1st, 20th
9. IRELAND, N.	Malin Head	29°714	43°8	40°4	48°5	44°5	32	27th, 28th, 30th	54	20th
	Donaghadee	29°785	43°3	38°3	49°7	44°0	30	29th	57	19th, 20th
	Mullaghmore	29°770	45°5	41°1	50°6	45°9	28	28th, 29th	57	1st, 14th, 18th
	Belmullet	29°776	45°4	40°7	50°0	45°4	26	28th	56	1st
10. IRELAND, S.	Parsonstown	29°844	41°7	36°9	50°2	43°6	20	29th	61	19th
	Valencia	29°890	47°9	41°9	52°8	47°4	27	27th, 28th	58	1st, 3rd, 13th, 14th.
	Roche's Point	29°889	46°3	41°8	51°9	46°9	27	27th	59	23rd
CHANNEL ISLANDS	Scilly (St. Mary's)	29°929	49°2	45°4	51°9	48°7	29	28th	57	3rd, 6th, 14th
	Jersey	29°957	47°6	43°8	52°8	48°3	16	29th	59	14th, 16th

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



REPORTING STATIONS in the BRITISH ISLANDS during the Month of NOVEMBER 1890.

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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
in.	%		ins.	in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

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 1890.

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.						
STONOWAY	*	*	*	*	*	*	*	*	*	*	*	50.9	22
LAIRG	34.7	45.1	39.9	19	27th	57	18th	26	5.96	1.07	6th	—	—
GLENCARRON	35.2	46.3	40.8	21	27th	55	19th	26	10.62	1.67	22nd	—	—
FORT AUGUSTUS	35.4	47.0	41.2	18	27th	56	19th	25	5.27	0.71	22nd	30.1	13
FORT WILLIAM	37.3	47.3	42.3	22	27th	56	2nd	27	9.23	1.12	1st	33.9	14
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	57.5	24
BRAEMAR	31.7	42.5	37.1	10	27th	54	19th	18	5.03	1.32	6th	45.2	19
LEITH	*	*	*	*	*	*	*	*	*	*	*	†39.6	17
OCHTERTYRE	33.2	46.9	40.1	19	26th	57	1st, 19th	23	6.74	1.64	6th	—	—
MARCHMONT	33.9	46.2	40.1	22	30th	57	19th	25	4.85	0.55	9th, 26th	50.0	21
ALNWICK CASTLE	36.0	47.9	42.0	26	29th	57	20th	23	4.99	0.93	5th	—	—
DURHAM	34.0	47.2	40.6	23	29th, 30th	61	19th	24	3.27	0.83	23rd	56.4	23
SCARBOROUGH	37.4	47.1	42.3	27	30th	56	15th, 20th	23	2.91	0.56	23rd	†65.7	26
YORK	*	*	*	*	*	*	*	*	*	*	*	44.6	18
HILLINGTON	34.1	47.5	40.8	14	30th	56	15th, 23rd, 24th	21	3.02	0.55	23rd	59.7	24
GELDESTON	35.0	48.5	41.8	14	30th	59	23rd	23	4.02	0.81	23rd	45.0	18
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	58.8	23
ROTHAMSTED	35.4	48.1	41.8	18	30th	57	23rd	22	2.58	0.62	6th	68.2	27
BAWTRY	32.9	48.3	40.6	21	26th, 29th	59	19th	22	2.91	0.51	6th, 27th	†49.4	19
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	†62.1	24
CHEADLE	36.2	47.2	41.7	23	27th	59	20th	25	5.97	1.20	6th, 23rd	—	—
CHURCHSTOKE	35.6	49.0	42.3	20	27th	62	19th	23	4.89	1.12	8th	56.7	22
HEREFORD	37.4	49.5	43.5	24	27th	60	19th	20	2.07	0.49	6th	—	—
CIRENCESTER	33.9	47.8	40.9	18	30th	57	23rd	17	2.33	0.48	6th	66.6	26
OXFORD	*	*	*	*	*	*	*	*	*	*	*	57.1	22
LONDON	*	*	*	*	*	*	*	*	*	*	*	37.8	14
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	†67.7	26
STRATHFIELD TURGIS	34.4	49.2	41.8	18	29th	58	23rd	18	1.62	0.43	6th	—	—
HASTINGS	39.4	49.6	44.5	16	28th	57	17th	26	3.20	0.41	6th	71.3	27
SOUTHAMPTON	38.1	51.0	44.6	16	29th	59	1st, 23rd	18	1.94	0.54	6th	62.9	24
STOWELL	37.3	48.6	43.0	16	29th	57	23rd	23	2.55	0.51	6th	—	—
LAUDALE	38.4	49.8	44.1	26	27th	60	18th, 19th	28	10.87	1.50	29th	—	—
GLASGOW	37.1	46.9	42.0	22	27th	55	19th	22	5.38	0.81	14th	37.2	16
GLENLEE	34.5	47.8	41.2	22	27th	56	18th	24	13.09	2.07	6th	—	—
DOUGLAS	39.3	50.0	44.7	28	29th	59	18th	26	10.35	2.56	6th	62.6	25
NEWTON REIGNY	33.0	47.2	40.1	18	29th	58	19th	24	5.54	1.23	8th	55.3	23
STONYHURST	36.8	47.4	42.1	25	27th	56	19th	23	8.17	2.18	22nd	52.5	21
BLACKPOOL	38.0	47.6	42.8	26	27th	55	19th	23	6.91	0.97	23rd	50.1	20
MANCHESTER	37.1	48.3	42.7	25	27th	58	19th	25	5.85	1.17	22nd	—	—
LLANDUDNO	41.2	51.1	46.2	29	30th	60	14th, 19th	21	5.81	0.99	6th	?	?
LLANDOVERY	36.0	49.3	42.7	17	27th	57	14th, 22nd, 23rd	27	7.30	1.35	6th	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	83.5	32
ARLINGTON	39.8	48.4	44.1	24	29th	56	14th	25	7.08	0.80	8th	—	—
CULLOMPTON	37.7	49.7	43.7	15	29th	58	8th	22	3.45	0.73	6th	63.9	24
FALMOUTH	42.5	50.5	46.5	23	29th	57	2nd, 14th	23	5.30	0.72	15th	87.9	33
PLYMOUTH	40.4	47.7	44.1	22	29th	58	2nd, 15th	22	3.72	0.55	6th	71.2	27
JERSEY	*	*	*	*	*	*	*	*	*	*	*	64.6	24
LONDONDERRY	37.9	48.8	43.4	25	28th	57	14th	25	7.70	1.42	6th	—	—
MARKREE CASTLE	35.7	49.4	42.6	16	28th	56	14th, 19th, 23rd	27	7.35	1.43	6th	59.7	24
BROOKBOROUGH	34.5	49.0	41.8	16	28th	56	14th, 15th	25	8.11	1.27	6th	—	—
ARMAGH	36.9	49.5	43.2	21	27th	58	14th, 19th	26	6.54	1.21	6th	65.5	26
EDGEWORTHSTOWN	36.0	48.8	42.5	21	29th	58	19th	28	6.54	1.11	6th	—	—
DUBLIN	39.5	51.0	45.3	26	29th	63	19th	27	4.21	0.63	10th	84.2	33
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	78.6	31
KILKENNY CASTLE	36.9	50.3	43.6	23	29th	60	19th	24	4.48	0.68	6th	—	—
WATERFORD	37.9	50.9	44.4	27	9th	59	22nd, 23rd	23	4.53	0.73	6th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	70.7	28
KILLARNEY	38.9	52.6	45.8	17	28th, 29th	60	2nd	24	8.07	1.41	13th	—	—
FOYNES	40.1	50.7	45.4	26	28th, 29th	61	19th	26	5.97	0.85	6th	—	—

\* For information see Table XXI.

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

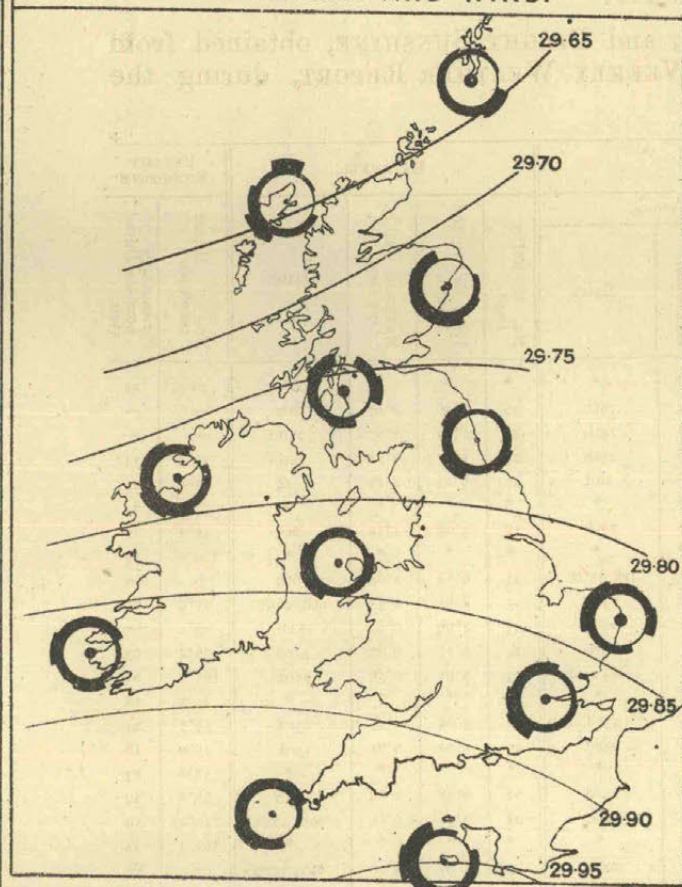


# MONTHLY WEATHER CHART, NOVEMBER, 1890.

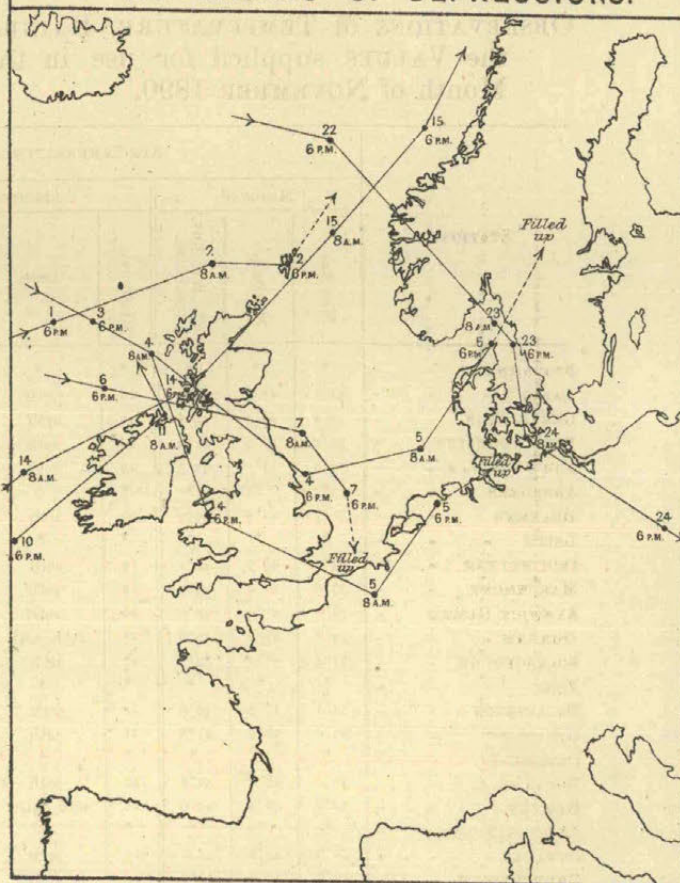
Monthly Summary.

Plate xi.

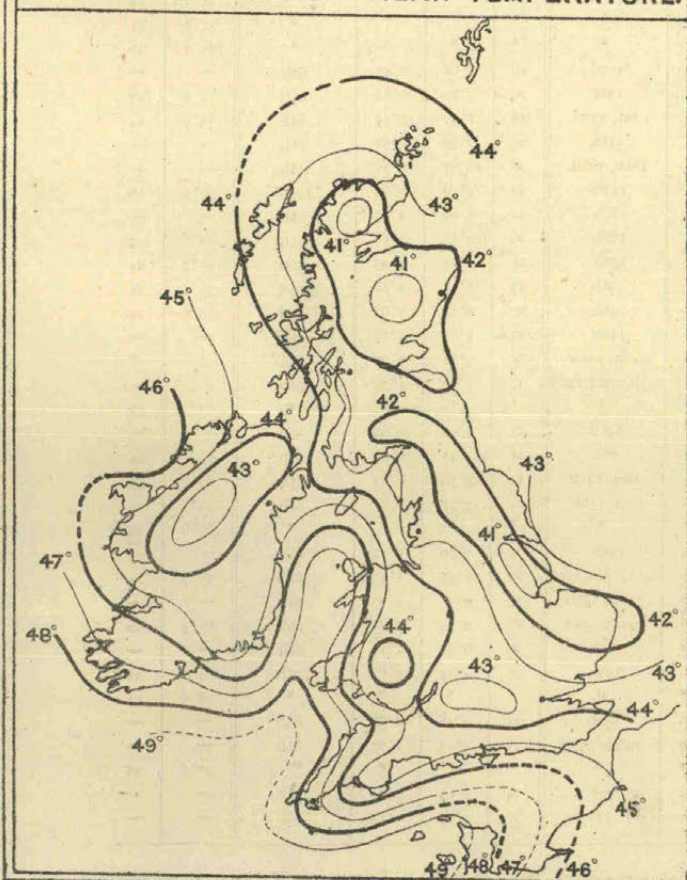
## 1. BAROMETER AND WIND.



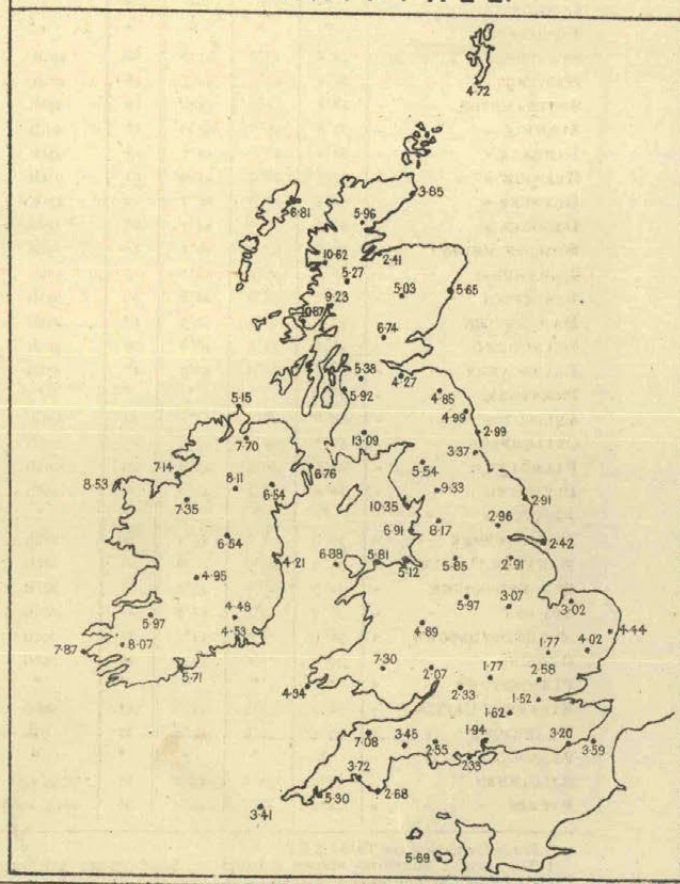
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4. RAINFALL.



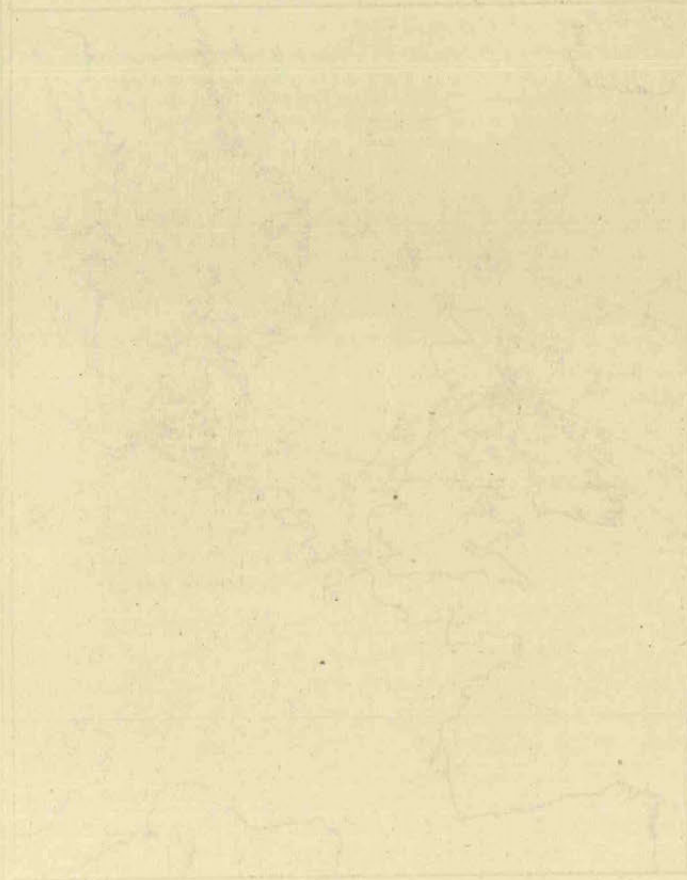


MONTHLY WEATHER CHART NOVEMBER 1890

1. BAROMETER AND WIND



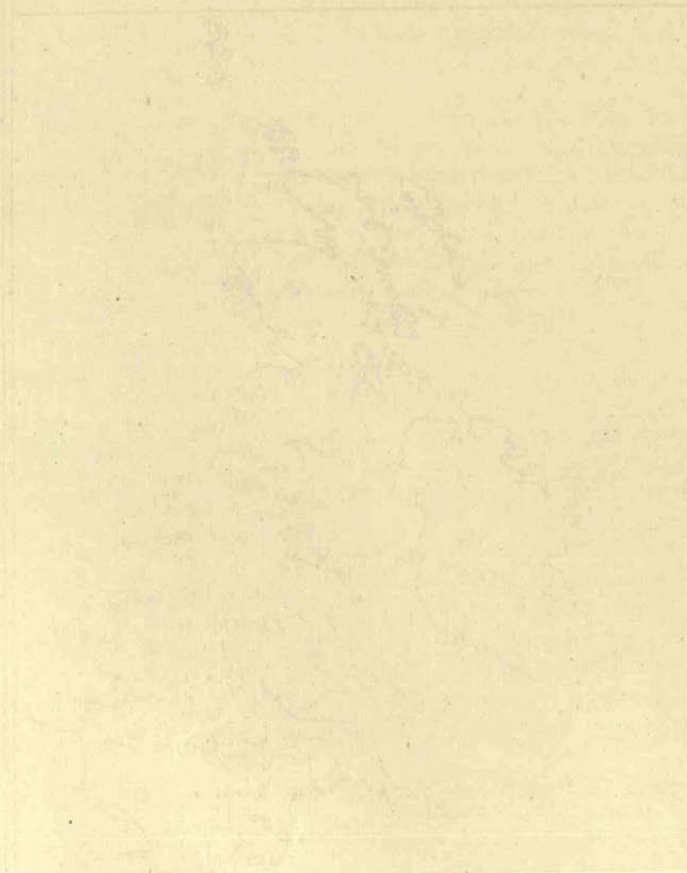
2. MOVEMENTS OF DEPRESSIONS



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, DECEMBER 1890.

(Issued as a Supplement to the Weekly Weather Report, 1890.)

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.; JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and 21, DRURY STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, DUBLIN.

**General Summary.**—The weather of December was dull, gloomy, and exceptionally cold over England, with thick local fogs and occasional falls of snow. In Ireland and the west and north of Scotland, however, the conditions were much less unfavourable. Pressure was considerably above the average, excepting in the south-west of England; temperature was greatly below the normal; the winds were mainly Easterly in the south, but Southerly in the north; and rainfall was very deficient in most places. The amount of bright sunshine was excessively small over the inland parts of Great Britain.

**Pressure.**—Mean for the month at 8 a.m. varied from 30·10 ins. and upwards off the north-east coasts of Great Britain to 29·95 ins. and less in the extreme south-west of England. The mean distribution was, therefore, of quite an abnormal character, the gradient being favourable for Easterly winds over the southern parts of the kingdom and for Southerly winds in the north. In the Channel Islands and the south-west of England the values did not differ materially from the average,\* but in all other parts of the country there was a decided excess, the departure amounting to 0·3 in. or more in the north and east of Scotland. *Highest* readings were recorded on the 26th and 29th, when the barometer rose to between 30·3 ins. and 30·5 ins. in nearly all districts. *Lowest* readings were observed very generally on the 19th, when the mercury fell in most places to between 29·2 ins. and 29·3 ins. *Range* was small for the time of year.

**Depressions.**—The depressions which reached our Islands from the Atlantic were mostly of a "V-shaped" character, and dispersed over the western and northern parts of the kingdom. Between the 15th and 17th a shallow system, which had appeared in the first case off the north-east of England, moved southwards to the Bay of Biscay, and afterwards travelled in a south-easterly direction across France to the Mediterranean; while at the beginning and end of the month depressions were drifting about in an irregular manner over Spain and the Bay of Biscay.

**Anticyclones.**—These were very numerous and persistent. In the majority of cases the systems extended over our Islands from a large high-pressure area which existed almost continuously over Russia, but in one or two instances the anticyclone advanced from the westward, while on the 21st a well-marked system was formed directly over the United Kingdom.

**Winds.**—In the northern parts of our Islands the winds were chiefly Southerly, but in the more southern districts there was an unusually large proportion from the Eastward. At Liverpool, Pembroke, and Jersey there were no fewer than 27 days with winds from an Easterly point (North-east to South-east), at Hurst Castle 26, and at Yarmouth 24. Gales were very rare on our south and east coasts, but were somewhat numerous in the extreme west and north, the largest numbers reported being 11 at Mullaghmore and 10 at Stornoway.

**Temperature.**—Mean at sea-level ranged from 43° at Scilly and from between 41° and 42° in the extreme south of Ireland to 37° and less over central Ireland, to 36° and less in various parts of central Scotland, and to between 28° and 30° over the eastern and south-midland counties of England. The winter distribution was, therefore, very strongly marked, and the actual values were everywhere below the average.\* In the extreme north and north-east of Scotland the deficit was rather less than 1°, and over central Ireland it varied from 3° to 4°, but over central England and the inland parts of our eastern and southern counties it amounted to not less than 9° or 10°. *Highest* readings were observed very generally on the 1st, but in some parts of England they occurred on the 4th; in the eastern, midland, and southern districts the daily maxima were unusually low, and the temperature never exceeded 45°. *Lowest* readings were observed mostly between the 21st and 23rd, when very severe frost occurred over England; at Stokesay (Salop) the thermometer fell to 1°, at Cambridge to 4°, and at Hereford to 6°. *Range* was moderate. *Vapour Tension* was less than 0·14 in. over the central parts of England, but exceeded 0·20 in. on our extreme south-western, western, and northern coasts, the highest value of all being 0·25 in. at Scilly. *Relative Humidity* varied from 80 per cent. in London, 82 at Aberdeen, and 83 at Jersey, to 94 at York, 95 at Hurst Castle, and 100 at Hawes Junction.

**Rainfall** was exceedingly slight over England and central Scotland, the total amounts being less than an inch in most places and as low as 0·39 in. at Rothamsted, 0·43 in. at Braemar, and 0·45 in. at Manchester. In the south of Ireland, however, there were more than 4 ins. and on the south coast of Devon and Cornwall more than 5 ins. In the districts last mentioned the aggregate fall did not differ much from the average,\* but in all other localities there was a very considerable deficit, the amounts over eastern and central England and western and central Scotland being in many cases less than one-fourth of the normal. Rainy days were somewhat frequent in the extreme west and north; at Sumburgh Head there were 21, at Valencia 22, and at Aberdeen 23. Over the greater part of England the number varied between 7 and 11.

**Bright Sunshine.**—The amount of bright sunshine was fairly large in the extreme north of Scotland, the west and south of Ireland, and the Channel Islands, the per-centage of the possible amount being as high as 30 at Jersey and 26 at Stornoway. In all other districts the amount was excessively small, less than 5 per cent. being recorded at many of the English stations and also at Leith. At York the total sunshine for the month was only 1·1 hours, while in London there was no more than one tenth of an hour, the per-centage of the possible amount being in each case inappreciable.

\* The averages employed are—*Pressure* and *Temperature* for 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 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.							
			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°067	40°5	37°1	43°2	40°2	32	21st	53	1st
	Wick	30°070	39°8	35°7	42°8	39°3	26	21st	54	1st
	Stornoway	30°004	39°7	33°9	42°9	38°4	25	7th	53	1st
1. SCOTLAND, E.	Nairn	30°051	36°1	30°5	40°6	35°6	20	19th	57	1st
	Aberdeen	30°106	37°2	34°2	40°5	37°4	15	22nd	55	1st
	Leith	30°080	36°6	31°8	40°2	36°0	22	22nd	57	1st
2. ENGLAND, N.E.	Shields	30°073	36°1	31°0	39°0	35°0	21	22nd	49	1st
	York	30°097	32°0	28°5	36°3	32°4	14	22nd	46	4th
	Spurn Head	30°063	35°2	32°2	37°5	34°9	25	23rd	45	4th
3. ENGLAND, E.	Yarmouth	30°054	33°4	29°4	36°0	32°7	22	1st, 30th, 31st	43	3rd, 4th
	Cambridge	30°069	27°9	22°9	33°0	28°0	4	22nd, 23rd	44	4th
4. MIDLAND COUNTIES	Loughborough	30°076	28°9	25°2	33°6	29°4	7	22nd	44	1st
	Oxford	30°057	27°7	24°7	32°5	28°6	8	23rd	43	4th
5. ENGLAND, S.	London	30°035	29°5	26°1	34°7	30°4	14	22nd	45	4th
	Dungeness	29°994	33°1	28°4	37°2	32°8	12	31st	43	3rd, 4th, 9th
	Hurst Castle	30°004	32°7	29°5	37°2	33°4	19	15th	43	1st, 3rd, 4th, 5th.
6. SCOTLAND, W.	Ardrossan	30°066	36°8	33°0	40°4	36°7	27	13th, 14th	51	1st
7. ENGLAND, N.W.	Hawes Junction*	28°797	29°6	25°9	33°5	29°7	15	13th	45	1st
	Liverpool	30°056	31°7	29°0	35°9	32°5	17	21st	46	1st
	Holyhead	30°028	36°9	34°2	40°9	37°6	26	22nd, 31st	51	1st
8. ENGLAND, S.W.	Pembroke	29°990	37°3	33°7	40°7	37°2	19	31st	51	1st
	Prawle Point	29°970	37°7	33°6	41°0	37°3	25	31st	46	10th, 11th, 19th
9. IRELAND, N.	Malin Head	30°004	39°8	36°6	42°7	39°7	32	17th, 18th	53	1st
	Donaghadee	30°051	40°2	37°2	43°5	40°4	26	21st	53	1st
	Mullaghmore	30°000	40°0	36°6	43°3	40°0	28	21st	55	1st
	Belmullet	29°995	38°6	35°4	43°2	39°3	30	17th	53	2nd
10. IRELAND S.	Parsonstown	30°004	34°3	30°0	41°1	35°6	20	21st, 22nd	54	1st
	Valencia	29°967	41°9	37°4	46°3	41°9	31	31st	54	1st
	Roche's Point	29°977	40°4	36°7	45°4	41°1	28	17th	51	1st, 2nd, 11th
CHANNEL ISLANDS	Scilly (St. Mary's)	29°906	43°4	39°7	45°7	42°7	30	31st	51	10th
	Jersey	29°971	36°2	31°8	40°4	36°1	22	31st	49	19th

\* Hawes Junction is 1,135 feet above mean sea level, and the



REPORTING STATIONS in the BRITISH ISLANDS during the Month of DECEMBER 1890.

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.
in.	%		ins.	ins.																	
0.228	91	8.8	1.80	0.41	12th	21	1	0	0	0	24	0	3	3	0	9	10	2	1	0	4
217	89	7.3	1.65	0.43	14th	17	3	2	0	1	14	5	3	2	1	4	11	5	2	2	1
222	91	7.9	1.39	0.72	19th	16	2	1	0	1	17	10	5	1	0	7	2	11	1	3	1
194	91	6.8	0.58	0.14	2nd	10	1	0	0	2	11	0	0	1	5	1	1	3	8	1	11
182	82	8.4	2.81	0.78	2nd	23	6	6	1	0	21	6	3	0	5	6	11	3	1	2	0
190	88	8.2	1.43	0.90	2nd	10	3	0	0	0	17	0	3	2	7	5	2	2	5	0	5
181	85	8.2	1.29	0.28	25th	14	4	1	0	0	16	5	2	1	7	4	7	2	4	3	1
170	94	8.3	0.74	0.10	25th	15	2	0	0	4	24	0	3	3	12	4	6	0	0	0	3
173	84	7.6	0.53	0.12	4th	11	1	0	0	2	16	5	1	4	9	3	6	4	1	2	1
173	91	7.1	0.58	0.22	26th	7	5	0	0	3	11	4	1	1	13	10	2	3	0	0	1
141	92	9.0	0.61	0.22	18th	9	6	0	0	1	26	0	7	6	8	1	3	1	0	0	5
138	88	9.1	0.56	0.12	15th	11	9	1	0	3	28	0	1	6	11	5	0	1	1	2	4
133	88	9.4	0.59	0.25	18th	11	8	0	0	2	29	0	3	11	6	2	1	0	1	1	6
131	80	9.1	0.78	0.18	19th, 20th	11	12	0	0	2	27	0	0	7	10	3	2	2	2	0	5
168	89	7.7	0.72	0.20	3rd	8	4	0	0	0	16	2	2	4	11	8	4	1	0	0	1
178	95	7.9	1.09	0.41	19th	8	4	0	0	1	12	7	2	16	9	1	2	1	0	0	0
200	92	7.8	0.80	0.56	2nd	8	1	0	0	3	20	1	1	13	6	1	4	1	0	1	4
164	100	7.8	0.94	0.19	25th	11	6	0	0	3	20	0	1	16	7	4	1	2	0	0	0
151	85	8.8	0.87	0.14	22nd	12	3	0	0	0	24	0	2	3	12	12	2	0	0	0	0
199	91	7.3	2.42	0.50	18th	12	1	0	0	0	14	0	1	3	12	4	5	1	0	0	5
195	88	8.0	3.14	0.62	1st	14	2	0	0	0	12	2	0	7	15	5	1	1	0	2	0
208	92	9.2	5.45	1.58	5th	16	4	2	0	0	25	9	4	11	9	3	1	1	1	1	0
211	87	7.9	1.18	0.39	18th	14	1	1	0	4	21	5	1	4	4	6	12	0	1	3	0
232	93	7.5	2.89	0.81	2nd	20	0	0	0	0	12	7	0	4	6	6	7	3	4	1	0
209	85	6.1	2.40	0.91	18th	10	0	0	0	7	6	11	1	5	5	7	3	3	2	2	3
211	90	4.6	2.21	0.69	18th	19	1	0	0	13	10	6	2	2	12	6	3	2	0	4	0
183	93	6.7	1.68	0.51	2nd	9	2	0	0	3	15	0	0	2	0	8	0	0	0	1	20
234	89	7.0	4.85	1.44	18th	22	1	0	0	1	12	6	3	7	9	5	2	1	1	1	2
216	87	7.2	4.44	0.65	1st, 5th	16	2	0	0	0	16	4	6	6	9	2	5	1	1	1	0
249	88	7.5	3.47	0.56	23rd	19	0	1	0	0	9	2	0	9	10	4	4	2	0	2	0
178	83	7.7	1.56	0.52	18th	12	5	3	0	2	16	2	0	3	18	6	1	0	0	2	1

barometrical 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 1890.

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.	Min. and Max. combined.	Minimum.	Date.	Maximum.	Date.						
STORNOWAY	*	*	*	*	*	*	*	*	*	*	*	50.2	26
LAIRG	29.1	38.9	34.0	21	21st	56	1st	14	1.06	0.35	22nd	—	—
GLENCARRON	29.9	39.2	34.6	22	17th	52	1st, 2nd	13	2.28	0.56	19th	—	—
FORT AUGUSTUS	31.2	41.0	36.1	22	10th	54	1st, 2nd	10	0.63	0.20	2nd	16.8	8
FORT WILLIAM	33.6	42.1	37.9	26	21st	53	1st	9	0.93	0.38	1st	25.4	13
ABERDEEN	*	*	*	*	*	*	*	*	*	*	*	18.1	9
BRAEMAR	29.7	36.9	33.3	16	21st	52	1st	14	0.43	0.09	4th	9.7	5
LEITH	*	*	*	*	*	*	*	*	*	*	*	77.2	3
OCHTERTYRE	30.5	38.1	34.3	21	9th	52	1st	17	1.14	0.42	2nd	—	—
MARCHMONT	30.0	37.1	33.6	18	13th, 14th	50	1st	20	2.50	0.54	2nd	21.0	10
ALNWICK CASTLE	31.7	38.1	34.9	18	13th	50	1st	16	2.11	0.40	24th	—	—
DURHAM	29.5	36.8	33.2	19	14th, 22nd	49	1st	16	1.73	0.25	25th	10.8	5
SCARBOROUGH	31.5	37.3	34.4	23	15th, 21st	45	3rd, 4th	14	0.99	0.25	27th	118.5	8
YORK	*	*	*	*	*	*	*	*	*	*	*	1.1	0
HILLINGTON	24.4	34.0	29.2	8	22nd	44	4th	13	0.51	0.25	19th	31.5	14
GELDESTON	24.8	35.9	30.4	13	2nd, 22nd	44	9th	8	0.51	0.15	26th	32.1	14
CAMBRIDGE	*	*	*	*	*	*	*	*	*	*	*	5.1	2
ROTHAMSTED	24.2	32.9	28.6	7	22nd	43	4th	10	0.39	0.11	18th	6.1	3
BAWTRY	26.4	34.3	30.4	10	20th	44	2nd	14	0.65	0.14	2nd	111.1	5
LOUGHBOROUGH	*	*	*	*	*	*	*	*	*	*	*	77.1	3
CHEADLE	26.2	33.4	29.8	16	20th	42	2nd, 4th	11	0.79	0.15	23rd	—	—
CHURCHSTOKE	25.5	33.3	29.4	9	21st	46	1st	8	0.85	0.30	18th	8.5	4
HEREFORD	26.0	33.8	29.9	6	22nd	44	1st	15	1.25	0.39	18th	—	—
CIRENCESTER	22.9	33.4	28.2	8	23rd	43	4th	9	0.88	0.41	18th	5.9	3
OXFORD	*	*	*	*	*	*	*	*	*	*	*	5.2	2
LONDON	*	*	*	*	*	*	*	*	*	*	*	0.1	0
DUNGENESS	*	*	*	*	*	*	*	*	*	*	*	138.9	16
STRATHFIELD TURGISS	23.2	33.3	28.3	8	22nd	44	4th, 5th	10	0.85	0.25	18th	—	—
HASTINGS	29.0	36.0	32.5	17	31st	42	9th	7	0.73	0.21	3rd	48.6	20
SOUTHAMPTON	26.2	35.1	30.7	17	15th, 20th, 25th	43	4th	11	1.64	0.65	20th	20.7	9
STOWELL	25.6	33.7	29.7	12	31st, 25th	47	4th	15	2.07	0.79	20th	—	—
LAUDALE	34.1	42.9	38.5	25	6th	58	1st	16	1.75	0.66	9th	—	—
GLASGOW	33.0	39.7	36.4	24	21st, 22nd	52	1st	12	1.40	0.80	2nd	4.4	2
GLENLEE	29.8	37.3	33.6	15	21st	52	1st	9	1.80	0.84	2nd	—	—
DOUGLAS	34.4	40.5	37.5	19	20th	51	1st	16	2.79	1.14	22nd	15.1	7
NEWTON REIGNY	27.6	35.6	31.6	14	13th, 14th	50	2nd	7	0.46	0.15	23rd	12.3	6
STONYHURST	28.4	35.8	32.1	13	22nd	44	2nd, 4th	8	0.54	0.14	15th	14.6	7
BLACKPOOL	29.4	35.8	32.6	18	20th, 22nd	44	1st, 3rd	7	0.30	0.10	1st	9.7	4
MANCHESTER	28.4	35.5	32.0	13	20th	45	5th	9	0.45	0.12	23rd	—	—
LLANDUDNO	30.9	39.0	35.0	20	20th, 21st	52	1st	11	1.32	0.20	1st, 18th, 22nd	27.6	12
LLANDOVERY	25.8	36.0	30.9	12	22nd	45	1st	13	1.01	0.28	23rd	—	—
PEMBROKE	*	*	*	*	*	*	*	*	*	*	*	37.5	16
ARLINGTON	28.3	36.8	32.6	16	31st	43	1st, 3rd	8	1.81	0.45	1st	—	—
CULLOMPTON	28.1	35.9	32.0	18	31st	44	1st	15	2.17	0.60	18th	8.4	4
FALMOUTH	35.2	43.0	39.1	25	30th	49	10th	18	5.13	0.98	23rd	19.2	8
PLYMOUTH	32.4	40.8	36.6	24	31st	47	11th, 23rd	15	5.32	1.28	18th	31.2	13
JERSEY	*	*	*	*	*	*	*	*	*	*	*	75.4	30
LONDONERRY	33.1	41.3	37.2	20	21st	54	1st	14	1.52	0.74	18th	—	—
MARKEE CASTLE	30.9	40.9	35.9	20	10th	54	1st	12	2.52	0.94	18th	53.3	24
BROOKEBOROUGH	30.7	40.3	35.5	14	21st	52	1st	9	2.53	1.57	18th	—	—
ARMAGH	32.2	41.1	36.7	16	21st	54	1st	14	1.67	0.78	18th	34.4	15
EDGEWORTHSTOWN	30.9	39.8	35.4	20	20th, 21st	54	1st	15	1.86	0.56	18th	—	—
DUBLIN	35.7	42.6	39.2	24	21st	54	1st	11	1.86	0.60	2nd	27.2	12
PARSONSTOWN	*	*	*	*	*	*	*	*	*	*	*	47.6	21
KILKENNY CASTLE	31.6	41.6	36.6	18	21st	52	1st, 3rd	11	1.88	0.70	18th	—	—
WATERFORD	34.0	42.7	38.4	24	21st, 31st	51	1st, 2nd	14	3.62	0.82	18th	—	—
VALENCIA	*	*	*	*	*	*	*	*	*	*	*	44.1	19
KILLARNEY	32.3	43.6	38.0	21	26th, 27th, 28th	54	1st	16	5.24	1.90	11th	—	—
FOYNES	32.4	42.6	37.5	25	26th, 31st	57	1st	18	3.29	1.34	11th	—	—

\* For information see Table XXIII.

† The bright sunshine values entered to Leith are recorded at Edinburgh, those entered to Scarborough are recorded at Oswaldkirk, those entered to Bawtry at Worksop, those entered to Loughborough at Thurgarton, and those to Dungeness at Westgate-on-Sea.

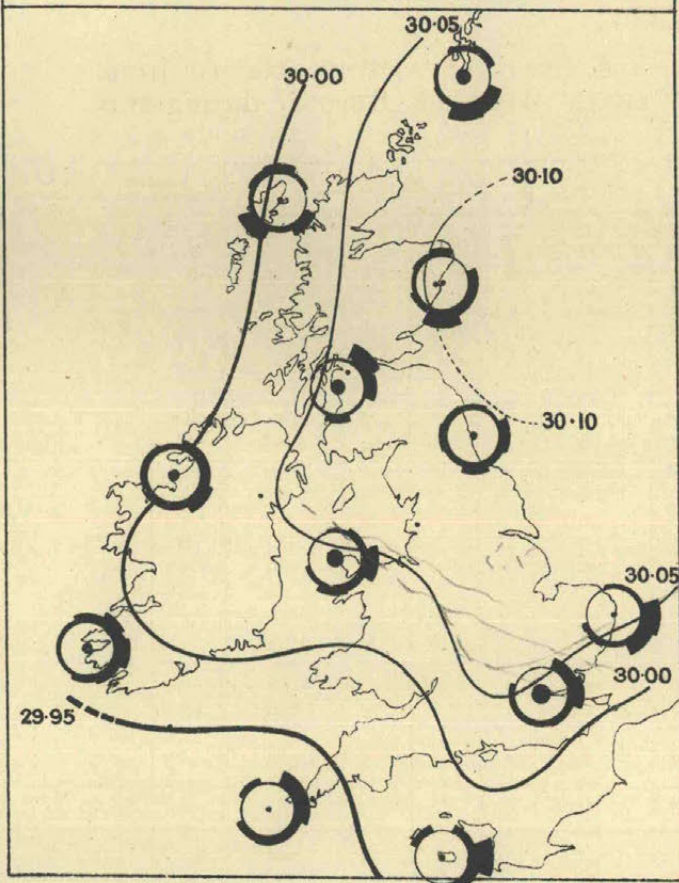


# MONTHLY WEATHER CHART, DECEMBER, 1890.

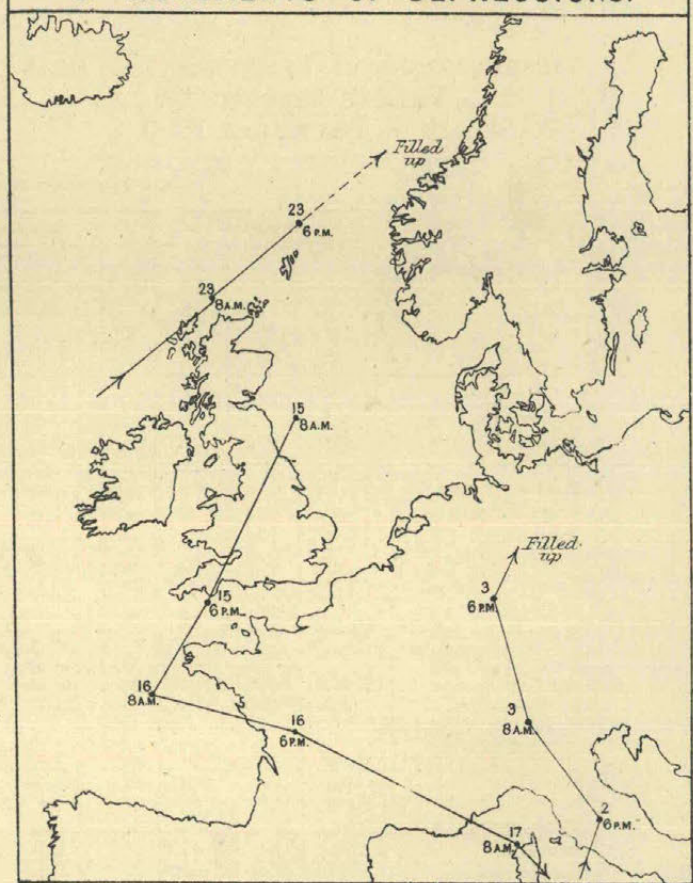
Monthly Summary.

Plate xii.

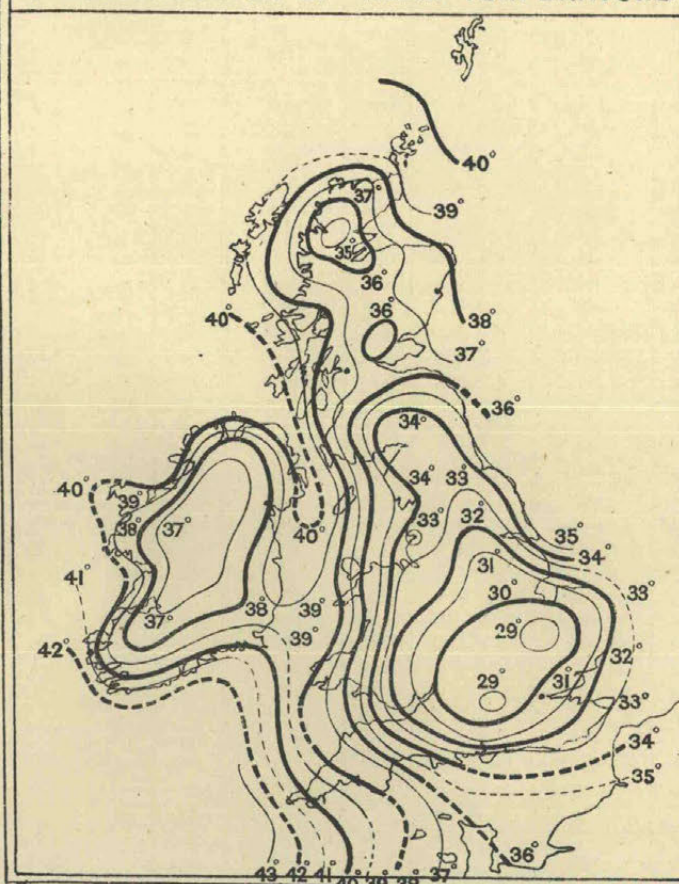
## 1. BAROMETER AND WIND.



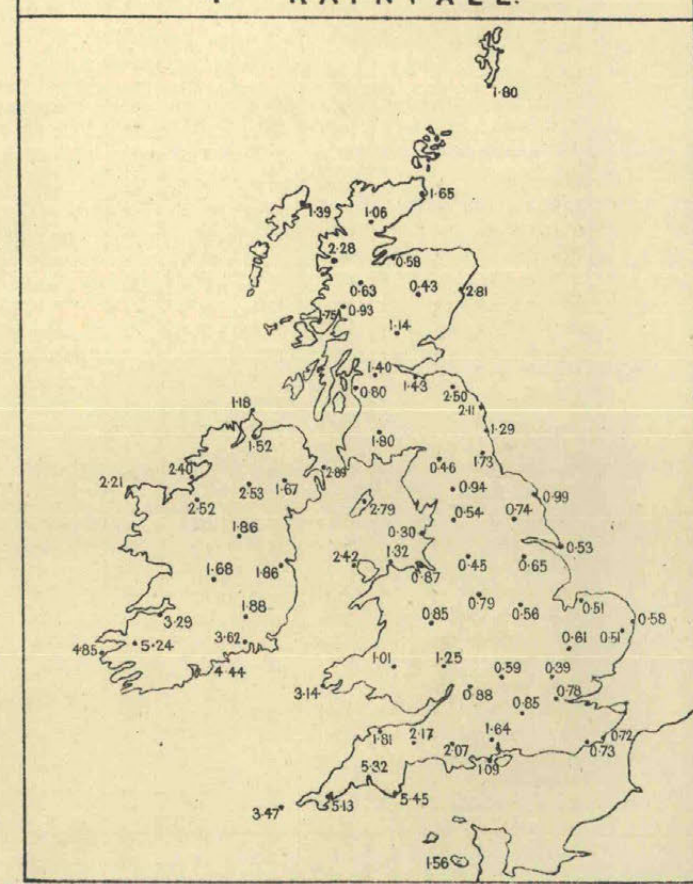
## 2. MOVEMENTS OF DEPRESSIONS.



## 3. DISTRIBUTION OF MEAN TEMPERATURE.



## 4. RAINFALL.

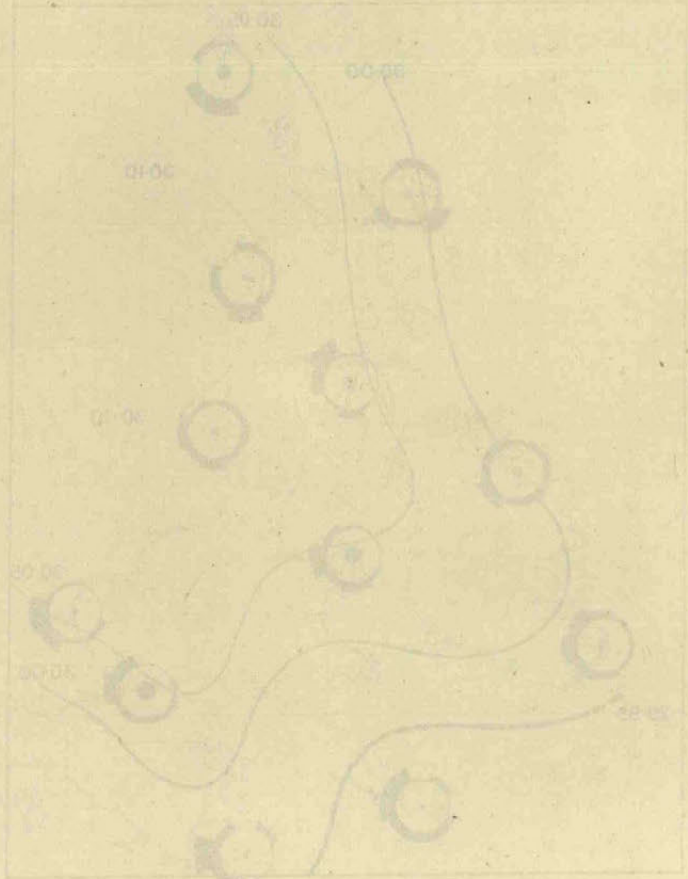




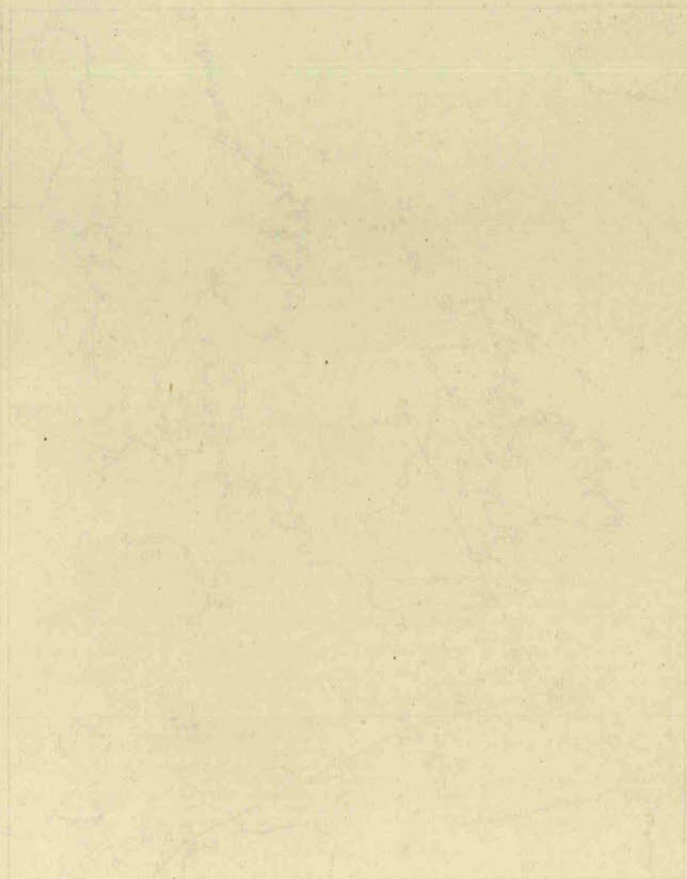
# MONTHLY WEATHER CHART-DECEMBER 1890

Barometer Summary

1. BAROMETER AND WIND



2. MOVEMENTS OF DEPRESSIONS



3. DISTRIBUTION OF MEAN TEMPERATURE



4. RAINFALL

