

# The Weather of September 1988

*A spectacular view of hurricane 'Helene'  
as it spirals away from the 'Americas'.*

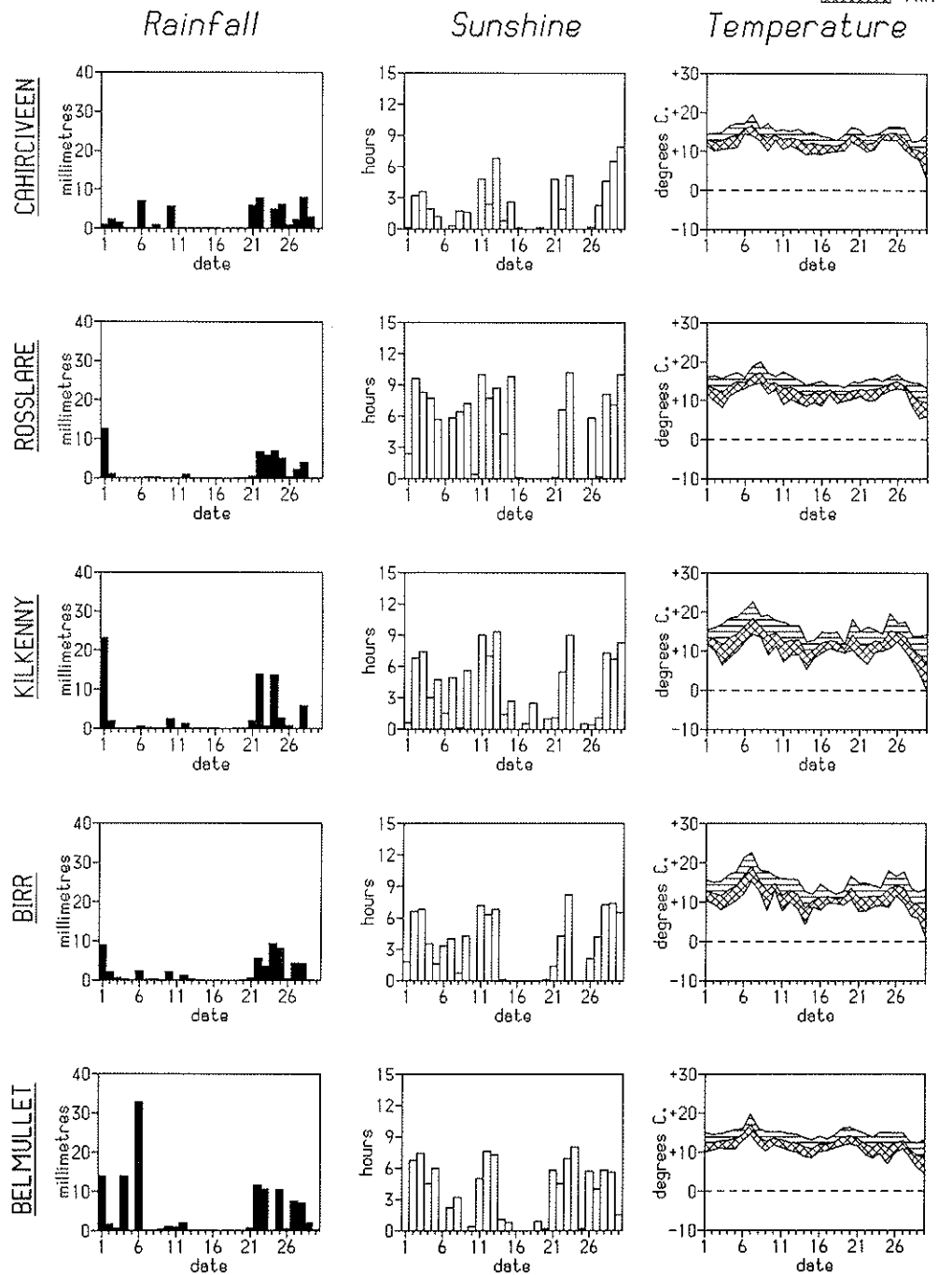
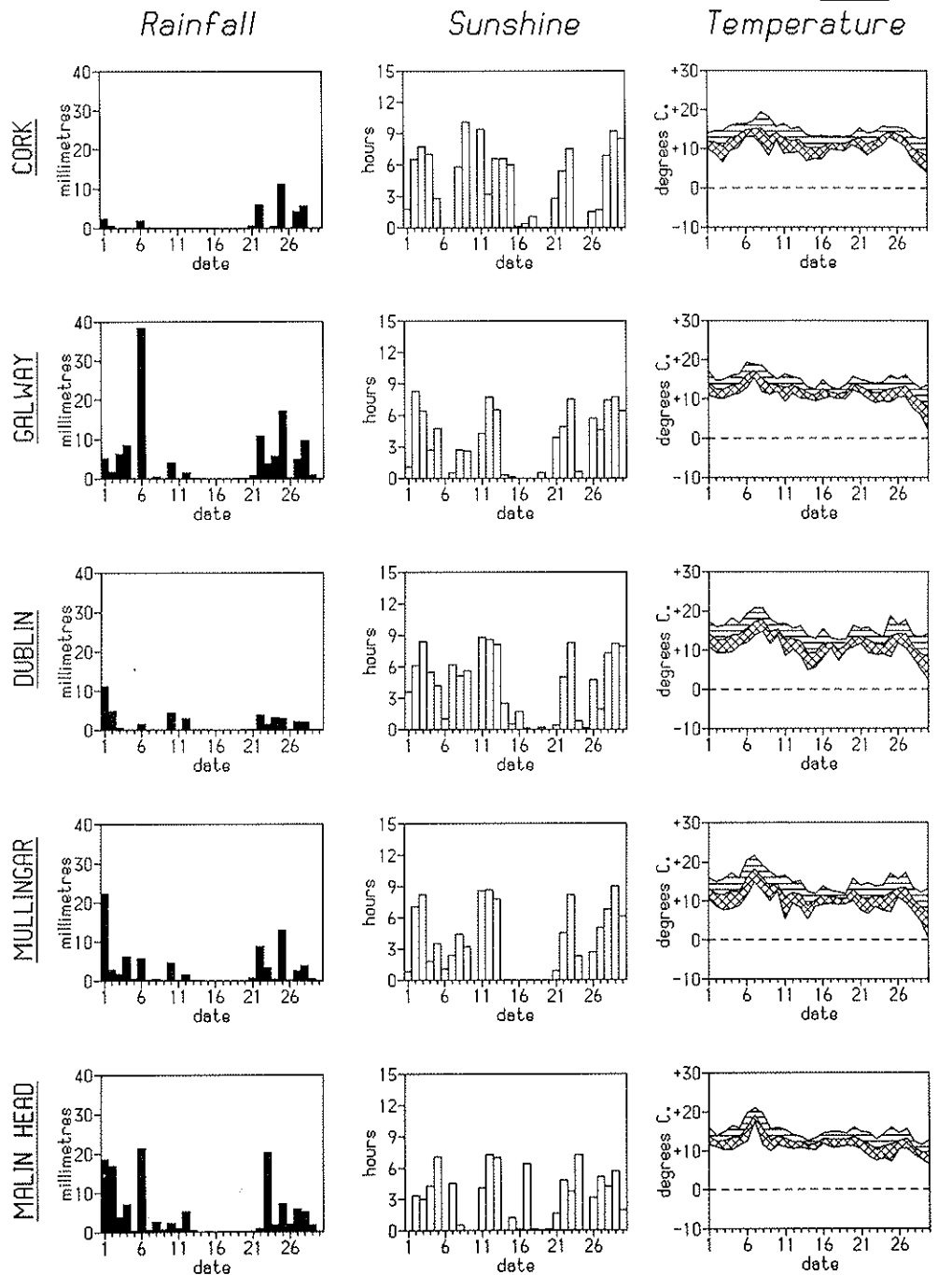
Moving northeastwards it later  
became a major extratropical  
depression in mid-Atlantic

*The infra-red satellite picture was taken by the American geostationary  
satellite GOES at 1730Z on the 27th of September 1988*

# Distribution of daily values

Max  
Mean  
Min

Max  
Mean  
Min



Station	Rainfall		Air Temperature				Sunshine		Wind		Number of days with							
	Total	Most in a Day	Means of	Mean	Extreme Temperature		Total	Most in a Day	Max Gale Gust	Rain*	Snow	Air Frost	Hail	Thunder	Fog	Gale Gusts		
		Amount			Date(s)	Max											Min	Highest Date(s)
Beaumont	119.3	32.9	14.8	12.5	19.8	7	4.5	30	101.3	8.0	24	52	19	-	-	-	16	
Birr	55.8	9.4	15.6	12.4	22.6	7	1.1	30	94.5	8.2	23	41	19	-	-	-	7	
Cahiriveen	58.4	8.0	15.2	13.0	19.4	7	3.1	30	64.5	7.9	30	48	15	-	-	-	8	
Casement	50.8	15.5	15.8	12.2	22.9	7	1.7	30	115.6	9.2	30	53	15	-	-	-	13	
Claremorris	128.9	28.6	15.2	12.0	18.9	7	0.0	30	76.3	6.5	2	50	18	-	-	-	9	
Clones	123.3	23.2	15.4	12.2	21.3	7	1.8	30	105.1	8.6	12	52	18	-	-	-	10	
Cork Airport	34.0	11.2	14.9	9.5	19.4	8	4.0	30	118.6	10.1	9	46	10	-	-	-	6	
Dublin Airport	41.1	11.2	16.0	9.6	20.7	7, 8	2.5	30	120.8	8.8	11	44	13	-	-	-	6	
Galway	120.9	38.4	15.2	10.2	19.2	6	2.3	30	97.1	8.3	2	44	17	-	-	-	7	
Kilkenny	70.2	23.1	16.4	9.2	22.6	7	-0.1	30	107.9	9.3	13	45	14	-	-	-	5	
Malin Head	125.6	21.3	15.1	10.5	21.0	7	6.5	30	86.4	7.3	12, 24	54	22	-	-	-	18	
Mullingar	79.7	22.4	15.2	8.7	21.7	7	0.6	30	103.1	9.0	29	43	19	-	-	-	9	
Roche's Point	35.7	9.6	15.1	10.2	18.3	8	5.1	30	128.6	10.1	30	50	9	-	-	-	8	
Rosslare	47.5	12.6	15.6	10.6	20.0	8	5.5	29	142.2	10.2	23	53	13	-	-	-	11	
Shannon Airport	80.9	23.8	16.0	10.7	21.6	6	2.5	30	84.6	8.7	30	49	19	-	-	-	4	

NOTES: Rainfall in millimetres. Temperatures in Degrees Celsius. Sunshine in Hours and Wind in Knots. Gale Gust = Gust of > 33.5 Knots. \* = days with 0.2mm or more

All data published in this bulletin are provisional. The final values will be published in the Monthly Weather Report

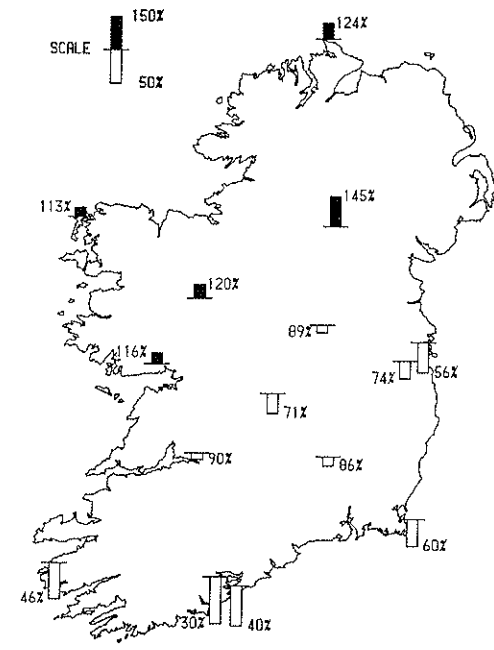
September 1988

# Cool with widely varying rainfall

Broadly, September's weather maps showed two spells of unsettled weather separated by dry but rather dull anticyclonic conditions between 14th and 19th. On 1st a low moved eastwards across the north of the country and the blustery westerly which followed persisted until 3rd. Winds were still moderate to fresh for the All-Ireland hurling final on Sunday 4th but fortunately there were very few showers until evening when a trough moving eastwards triggered widespread and heavy showers. During 5th and early on 6th warm fronts crossed the country and we got into a warm, humid, southerly airflow. Late on 7th and early on 8th a cold front moved eastwards across the country and caused some thundery activity in the northeast and east. A westerly airflow then developed with sun and a few showers. Late on 9th and on 10th frontal troughs gave some light rain in a southwesterly windflow; this was again followed by a veer of wind to the west on 11th. Between 12th and 14th, with pressure rising gradually, shower activity was slight and winds veered northwesterly as a high pressure area approached from the Atlantic. As it continued slowly eastwards the weather remained dry but mostly cloudy with light winds and a dry surface for the football final on 18th. The anticyclone continued to be the dominant weather feature until 20th, when it was centred to the southeast of Ireland and there was rain for a time in the northwest. Depressions crossed the country between 22nd and 24th giving spells of rain in all areas. On 25th we were in a humid southwesterly windflow; this was followed by a fresher, cooler westerly airflow with a mixture of sun and showers, some of which were heavy, between 26th and 28th. Shower activity was damped down during 29th as pressure rose and on 30th an anticyclone was passing eastwards just over the south of Ireland.

## RAINFALL

Totals for the month showed a marked south-north gradient, with totals of 115 to 130 millimetres in the west and north and less than 40 mm in the Cork area. This was mainly because Ulster and Connaught had totals of 50 to 75 mm between 1st and 6th while south Munster escaped with 5 to 11 mm. Percentages of normal rainfall ranged from 30% at Cork Airport to 145% at Clones but in most areas they were between 60% and 120% of normal. Highest daily total was 38.4 mm recorded at Galway on 6th. Spells of heavy rain also occurred on 1st and early on 2nd and on 25th, while some heavy showers were recorded late on 4th and during 27th-28th. Conditions were dry everywhere between 14th and 19th and many parts of the south and east had only small amounts of rain between 3rd and 21st.



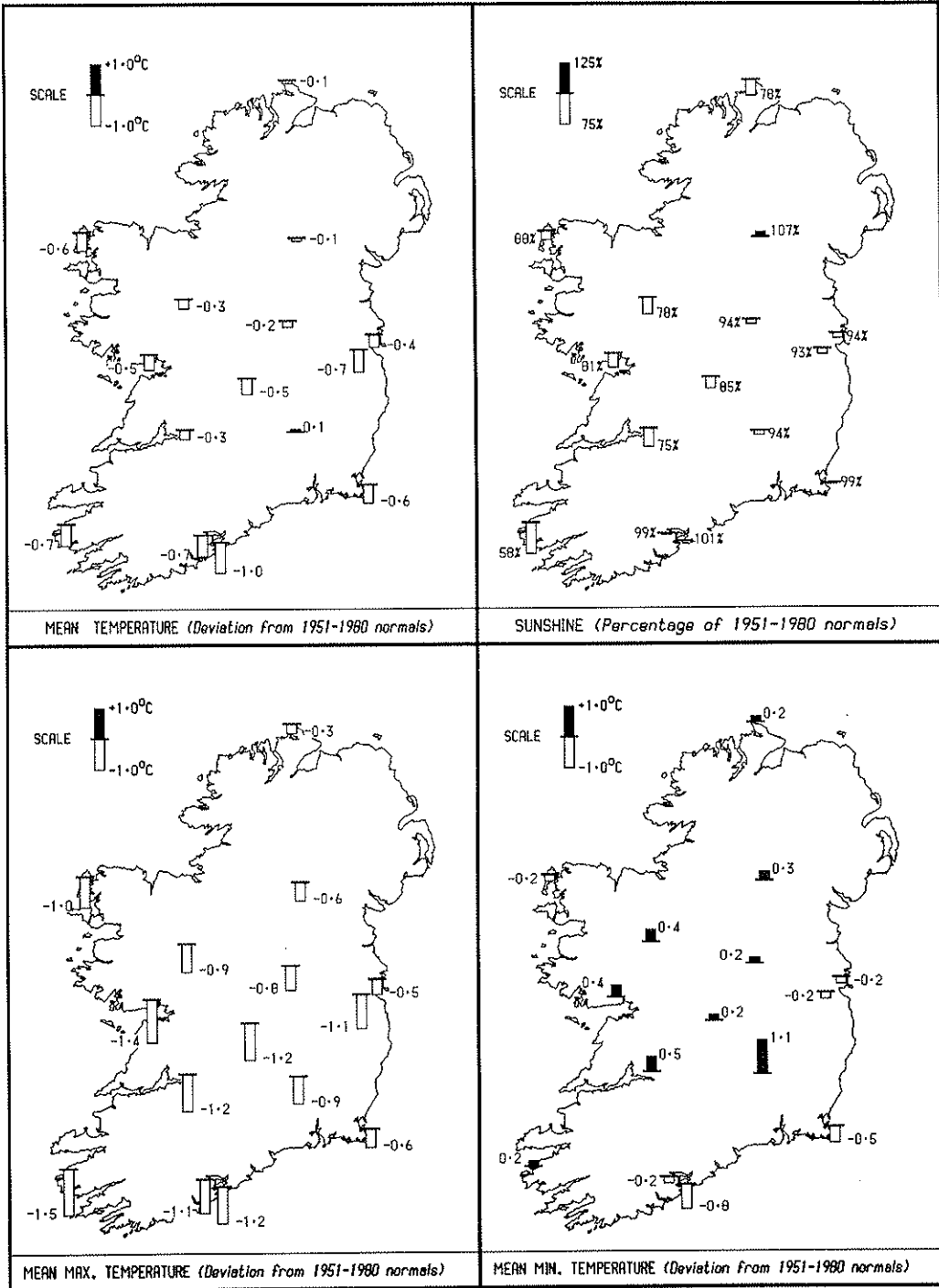
Rainfall percentage of (1951-1980) normals

## LOW DAYTIME TEMPERATURES

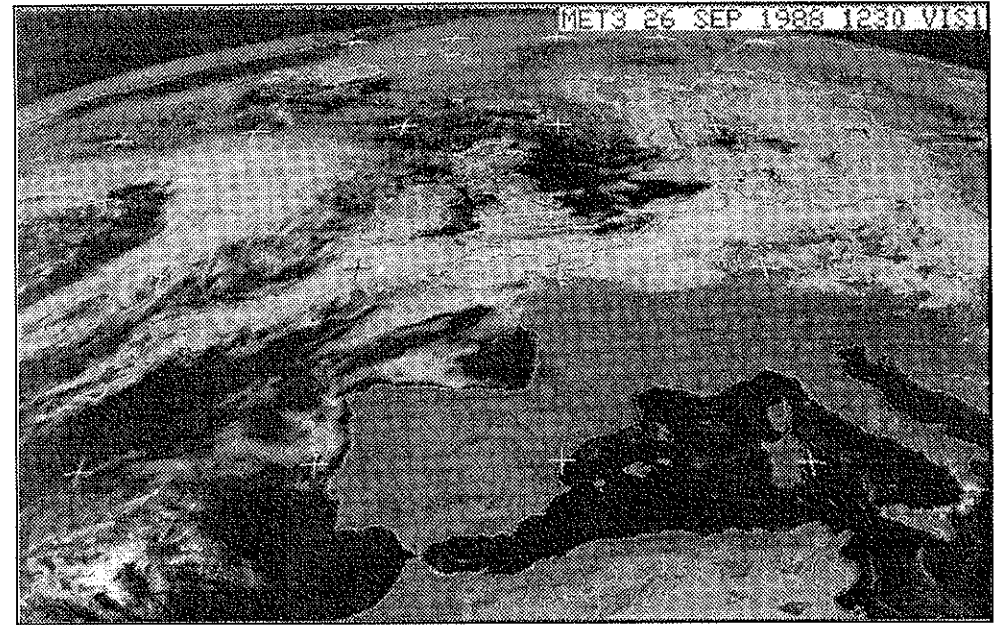
Mean maximum temperatures were between 0.3°C and 1.5°C below normal in most areas and were the lowest for 11 to 14 years at 10 of our 15 stations. Only between 6th and 8th, and to a lesser extent on 25th, were daytime temperatures well above normal. Highest temperatures of the month were recorded on 7th when three inland stations had values in excess of 22°C. Daytime temperatures were consistently low between 14th and 24th and also on 28th and 29th. By way of contrast nighttime temperatures were above normal except in some coastal districts. Values ranged

(continued on back page)

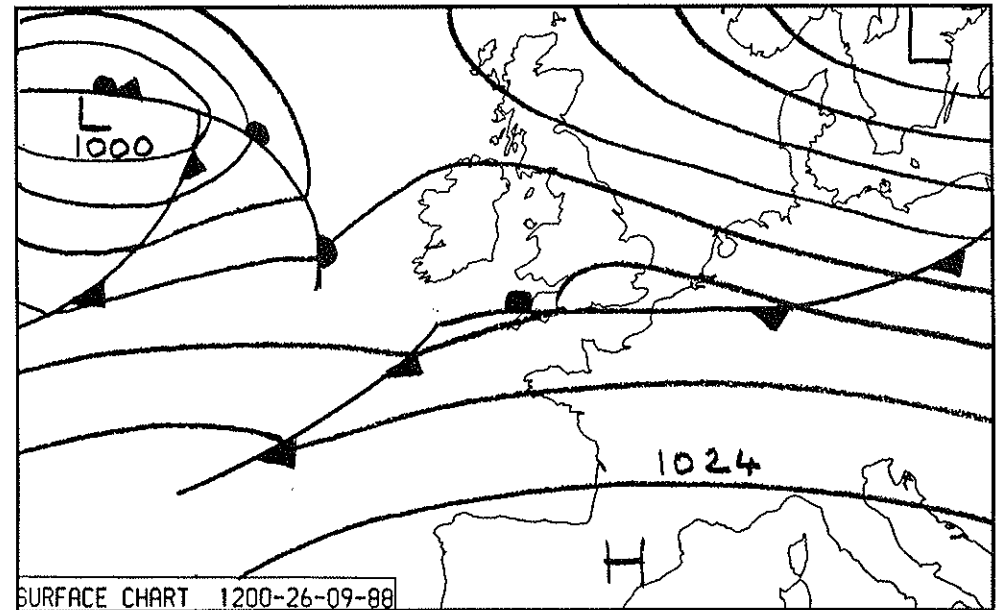
**Differences from average**



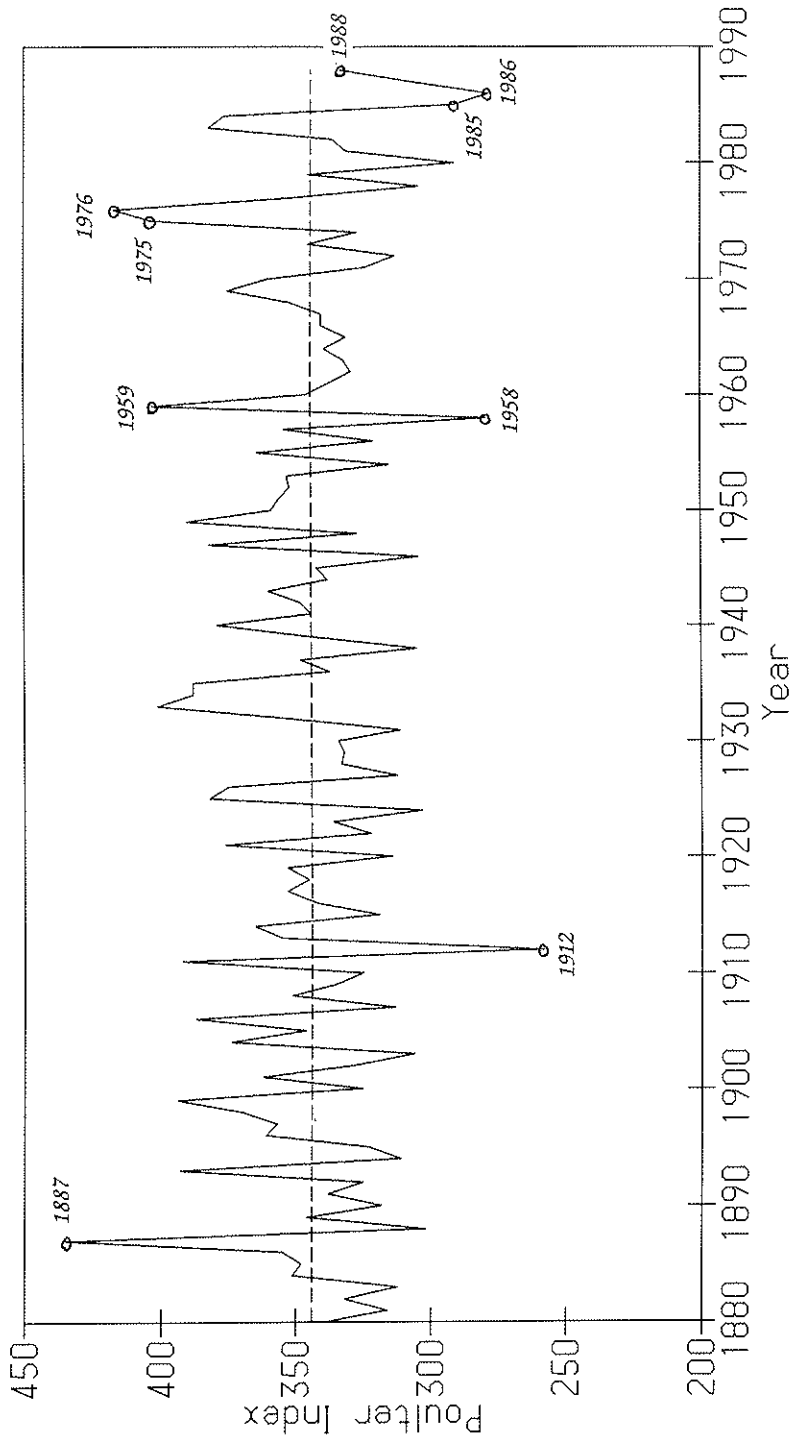
**View at 36,000km from METEOSAT on 26th**



The minor wave disturbance on the front to the south is moving eastwards giving slight rain at times near the south coast. The cloud system to the west moved across the country on the 27th.



# Over 100 years of Summer at Phoenix Park



## Poulter Index of Summer Weather (June, July, August)

	Malin Head	Dublin	Birr	Valentia
Average Index	341	337	326	355

Year	Percentage of average			
1971	98.8	96.1	103.7	94.9
1972	92.1	95.7	99.7	93.8
1973	101.2	102.4	101.8	99.2
1974	106.7	97.0	91.4	93.8
1975	112.6	119.6	121.2	117.5
1976	119.9	123.7	124.2	116.6
1977	111.7	107.7	100.9	109.0
1978	94.7	90.2	91.4	89.3
1979	92.1	102.4	98.1	92.1
1980	91.2	86.4	86.5	82.3
1981	94.7	98.2	98.5	101.4
1982	98.8	99.7	103.7	107.0
1983	113.8	117.2	113.8	117.2
1984	104.4	111.6	112.0	107.9
1985	82.7	86.4	76.4	79.2
1986	94.7	82.5	80.4	85.4
1987	91.8	91.1	94.2	101.1
1988	90.0	98.8	92.6	89.0

(continued from page 5)

from 1.1°C above normal at Kilkenny to 0.6°C below normal at Roches' Point but in most areas were near or above normal. Coolest night was 30th when temperatures fell to near freezing point at a number of inland stations and Kilkenny (-0.1°C) had the first air frost of Autumn. Minimum temperatures were highest between 6th and 10th. Mean temperatures for the month were below normal in most areas but ranged from 0.1°C above normal at Kilkenny to 1.0°C below normal at Roches' Point.

## SUNSHINE

In most places percentages of normal sunshine varied between 75% and 100%. However, at Cahirciveen only 58% of normal sunshine or a total of 64.5 hours was recorded, making it the dullest September there since records began in 1892. However much of east Munster, Leinster and east Ulster had between 93% and 107% of normal sunshine. Spells when there was a fair amount of sun but also scattered showers occurred between 2nd and 5th, 11th and 13th, on 22nd and 23rd and also on 28th and 29th. In the anticyclonic conditions of 30th many areas had between 6 and 10 hours of sun, which was in marked contrast to the anticyclonic conditions of 14th to 19th which were disappointingly dull. Other dull days were 6th, 10th, 24th and 25th.

## WINDS

Windiest spells were between 1st and 3rd, on 12th and early on 13th and between 23rd and 28th when (mostly westerly) winds gusted 40 to 54 knots. Late on Saturday the 30th wind increased from the southwest as a major depression, incorporating the remains of hurricane 'Helene' was the dominant feature of the Atlantic weather map. Fortunately the centre moved north-northeast towards Iceland and we escaped quite lightly.

## THUNDER

Thunder was reported late on 7th and early on 8th and on 28th, while hail showers occurred between 27th and 29th. On the evening of 4th there was a very heavy shower at Claremorris and a report of 'tornado-type' damage from Monaghan.

## FOG

Hill and coastal fog patches affected some areas in the humid airmasses of 7th and 8th and again on 25th.

# POULTER INDEX

*Poulter \* suggests using mean temperature, rainfall and sunshine duration to derive an index of summer weather, where summer is taken as comprising the months June, July and August. He takes the range of values over the whole period of record considered and uses weighting factors to produce a range of about 70 for each element concerned. The weighting factors are taken to be positive in the case of mean temperature and sunshine duration and negative in the case of rainfall. The index is then taken to be the algebraic sum of the weighted values.*

*Over the period 1915-1987 the extreme ranges of elements concerned at Malin Head were:*

WARMEST	Summer	14.9°C	in	1976
COLDEST	Summer	11.8°C	in	1922
SUNNIEST	Summer	646.3hr	in	1968
DULLEST	Summer	321.6hr	in	1978
DRIEST	Summer	109.3mm	in	1983
WETTEST	Summer	386.8mm	in	1985

*The figures give a range of mean temperature of 3.1°C, of sunshine duration of 325 hours and of rainfall of 278 mm. Accordingly the following weighting factors have been adopted:*

Mean temperature (°C)	22.6
Sunshine duration (hr.)	1/4.6
Rainfall (mm.)	-1/4

*The index, I for Malin Head is then*

$$I = 22.6T + S/4.6 - R/4$$

*where*

T = Mean temperature (°C) for June, July and August  
S = Total sunshine duration (hours) for the three months  
R = Total rainfall (mm) for the three months

*\* The next few summers in London by R.M. Poulter, Weather, August 1962, pp 253-255*