

# METEOROLOGICAL SERVICE

METEOROLOGICAL OFFICE,  
ROSSLARE,  
CO. WEXFORD

AGMETBL (02)460

FEBRUARY 1986

## AGROMETEOROLOGICAL BULLETIN

### The Weather of February

The weather of February was dominated by winds with a persistently easterly (northeast to southeast) component. For the most part, the month was uniformly very cold and exceptionally dry. High pressure to the north and east of Ireland and low pressure systems moving into Europe off the south of the country were the major influences on the weather during the month. There were occasional showers of snow, especially in parts of the north and east from 5th to 7th, and also some longer outbreaks of snow in southwestern areas due to the passing weather systems. The snow remained on the ground in eastern regions for a considerable period. While under the threat of further snow on a number of occasions, Ireland escaped the worst effects of the prolonged cold spell compared to neighbouring countries.

#### Precipitation:

Amounts of precipitation for February were well below normal in all areas and almost nil in some mid-western and north-midlands areas. Amounts varied from 32% of normal at Dunsany (Grange) to 1% at Shannon Airport and Galway. The heaviest falls occurred at Dunsany (Grange) on the 10th (12.2mm) and at Cahirciveen on the 11th (11mm). An absolute drought (15 or more days with less than 0.2mm rainfall) was recorded in most places throughout the country. It was the driest month of February since records began at many stations. In the case of Birr the year of commencement was 1872. Ground conditions (except where snow lay) were very good.

#### Temperature:

Monthly mean air temperature was well below normal, varying from 3.8C° below normal at Belmullet to 2.6C° below at Malin Head. Air frost was widespread on 5th-10th, 14th-16th and 18th-27th. Lowest values occurred on 21st, 22nd and 27th, when severe air frost was widespread. An absolute air minimum for the month of -6.9C° occurred at Casement Aerodrome and an absolute ground minimum of -12.9C° occurred at Clones on 21st. Soil temperatures (100mm) were well below normal (by up to 5C°), reaching minimum values during the final days of the month; the three-day mean (26th-28th) at Claremorris was -0.1C°.

#### Sunshine and Radiation:

There were two contrasting sunshine regimes both in terms of region and period of the month. For most of the country sunshine hours were above normal, but for southern and eastern coastal areas values were below normal. It was very dull in the extreme south. Values varied from 141% of normal at Belmullet to 53% at Roches Point. For most areas the last decade of the month was much brighter than the preceding two. Global radiation was generally near normal.

#### Wind:

Strong winds with gale gusts occurred frequently, and were particularly widespread on 1st/2nd, 10th-17th, 23rd and 28th.

#### Summary:

Persistent easterly winds; very cold and dry.

The data contained in this Bulletin are provisional. Some of the material in Table 1 will be published in its final form in the Monthly Weather Report; final values of Global Radiation at stations in Table 2 will be published in the annual Solar Radiation Observations.





TABLE 1 (CONTINUED)

FEBRUARY 1986

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)													BRIGHT SUNSHINE		WIND					
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR							GROUND			SOIL (10cm)			TOTAL NO. OF HOURS	% OF AVERAGE	MEAN SPEED (ms <sup>-1</sup> )	DAYS WITH GALE GUSTS	P.E. (PENMAN) (mm)			
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"	DATE						DAYS WITH GROUND FROST	MEAN DAILY	DIFFERENCE FROM AVERAGE
Cahircoheen (Valentia Obsy.) Co. Kerry	1-10	13.4	-	3	3	4.5	1.0	2.8	-	-2.0	7	3	2	-	0	-	-4.5	8	4	2.9	-	18.3	-	6.6	4	-
	11-20	6.1	-	2	2	6.2	2.1	4.1	-	-2.0	18	1	8	-	0	-	-5.6	18	4	3.6	-	13.2	-	8.3	8	-
	21-END	0.6	-	1	0	4.3	-0.9	1.7	-	-4.0	27	4	1	-	0	-	-7.4	27	7	1.7	-	29.6	-	6.0	4	-
	MONTH	20.1	17	6	5	5.1	0.8	3.0	-3.5	-4.0	27	8	11	12	0	-	-7.4	27	15	2.8	-3.3	61.1	87	7.0	16	30
Ardfert (Liscabane) Co. Kerry	1-10	6.2	-	4	1	3.6	-0.4	1.6	-	-5.3	7	4	1	-	0	-	-9.1	8	5	-	-	20.2	-	-	-	-
	11-20	0.0	-	0	0	4.8	0.8	2.8	-	-3.6	18	4	4	-	0	-	-10.5	18	6	-	-	13.0	-	-	-	-
	21-END	0.0	-	0	0	4.5	-3.2	0.7	-	-6.7	28	7	1	-	0	-	-12.2	27	8	-	-	39.4	-	-	-	-
	MONTH	6.2	-	4	1	4.3	-0.8	1.7	-	-6.7	28	15	5	-	0	-	-12.2	27	19	-	-	72.6	-	-	-	-
Lullymore Co. Kildare	1-10	10.4	-	5	4	2.6	-0.9	0.9	-	-4.1	7	6	0	-	0	-	-7.4	6	6	-	-	10.7	-	4.2	-	-
	11-20	0.0	-	0	0	2.9	-0.9	1.0	-	-5.6	20	4	0	-	0	-	-9.6	20	10	-	-	19.2	-	5.1	-	-
	21-END	0.0	-	0	0	3.2	-4.3	-0.5	-	-7.3	22	8	0	-	0	-	-12.5	24	8	-	-	47.8	-	4.2	-	-
	MONTH	10.4	19	5	4	2.9	-1.9	0.5	-	-7.3	22	18	0	-	0	-	-12.5	24	24	-	-	77.7	-	4.5	-	N/A
Kilkenny Co. Kilkenny	1-10	1.2	-	3	0	3.6	0.4	2.0	-	-3.4	6	5	1	-	0	-	-5.8	6	5	2.1	-	13.9	-	4.2	3	-
	11-20	2.2	-	1	1	3.8	0.1	1.9	-	-3.1	20	4	1	-	0	-	-10.2	20	8	1.7	-	11.5	-	4.4	3	-
	21-END	0.0	-	0	0	3.6	-2.7	0.5	-	-4.3	27	8	0	-	0	-	-9.8	21	8	0.7	-	54.5	-	3.9	2	-
	MONTH	3.4	6	4	1	3.7	-0.6	1.5	-3.2	-4.3	27	17	1	-	0	-	-10.2	20	21	1.5	-2.9	79.9	112	4.2	8	21
Mooncoin (Silverspring) Co. Kilkenny	1-10	2.6	-	5	1	4.2	0.2	2.2	-	-4.0	6	5	1	-	0	-	-10.6	6	6	-	-	13.7	-	-	-	-
	11-20	0.0	-	0	0	3.8	0.3	2.1	-	-2.1	20	4	1	-	0	-	-8.5	20	8	-	-	9.9	-	-	-	-
	21-END	0.0	-	0	0	3.6	-2.8	0.4	-	-5.6	22	8	0	-	0	-	-10.8	22	8	-	-	44.4	-	-	-	-
	MONTH	2.6	3	5	1	3.9	-0.6	1.6	-	-5.6	22	17	3	-	0	-	-10.8	22	22	-	-	68.0	-	-	-	-
Ballinamore Co. Leitrim	1-10	1.3	-	2	0	3.1	-0.5	1.3	-	-3.4	6	6	0	-	0	-	-7.5	6	7	-	-	10.0	-	2.9	-	-
	11-20	1.0	-	1	1	3.8	-0.8	1.5	-	-6.6	20	6	1	-	0	-	-9.0	20	10	-	-	15.9	-	2.9	-	-
	21-END	0.7	-	1	0	3.7	-3.9	-0.1	-	-7.6	21	8	0	-	0	-	-14.0	21	8	-	-	42.5	-	2.1	-	-
	MONTH	3.0	4	4	1	3.5	-1.6	1.0	-	-7.6	21	20	1	-	0	-	-14.0	21	25	-	-	68.4	-	2.7	-	10
Ardee (Boharnamoe) Co. Louth	1-10	11.0	-	7	5	N/A	-0.1	N/A	-	-3.4	6	6	N/A	-	N/A	-	-8.2	6	6	-	-	-	-	-	-	-
	11-20	0.0	-	0	0	3.7	-0.3	1.7	-	-6.1	20	5	1	-	0	-	-11.1	20	9	-	-	-	-	-	-	-
	21-END	1.0	-	1	0	2.4	-3.8	-0.7	-	-7.6	21	8	0	-	0	-	-12.7	22	8	-	-	-	-	-	-	-
	MONTH	12.0	20	8	5	N/A	-1.3	N/A	-	-7.6	21	19	N/A	-	N/A	-	-12.7	22	23	-	-	-	-	-	-	-

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

FEBRUARY 1986

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND		P.E. (PENMAN) (mm)		
		AMOUNT	x OF AVERAGE	RAIN DAYS	WET DAYS	AIR							GROUND			SOIL (10cm)		TOTAL NO. OF HOURS	x OF AVERAGE	MEAN SPEED (ms <sup>-1</sup> )	DAYS WITH GALE GUSTS					
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	x OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	x OF AVERAGE	LOWEST "GRASS-MIN"					DATE	DAYS WITH GROUND FROST		MEAN DAILY	DIFFERENCE FROM AVERAGE
Ballinrobe (Creagh) Co. Mayo	1-10	2.0	-	1	1	3.6	-0.6	1.5	-	-3.6	8	6	1	-	0	-	-9.6	8	6	-	-	19.7	-	4.3	1	-
	11-20	3.1	-	1	1	4.3	-0.9	1.7	-	-5.6	20	7	1	-	0	-	-11.5	20	9	-	-	20.2	-	5.3	1	-
	21-END	0.0	-	0	0	4.0	-5.4	-0.7	-	-8.0	22	8	0	-	0	-	-12.9	22	8	-	-	39.0	-	3.6	1	-
	MONTH	5.1	5	2	2	4.0	-2.1	1.0	-	-8.0	22	21	2	-	0	-	-12.9	22	23	-	-	78.9	-	4.5	1	16
Belmullet Co. Mayo	1-10	3.6	-	1	1	5.1	0.3	2.7	-	-3.4	7	6	2	-	0	-	-8.3	7	6	3.5	-	28.6	-	5.8	2	-
	11-20	0.4	-	1	0	4.7	0.3	2.5	-	-2.6	20	4	2	-	0	-	-7.1	18	8	3.1	-	24.1	-	6.9	4	-
	21-END	0.2	-	1	0	4.7	-4.1	0.3	-	-5.4	21	8	1	-	0	-	-10.7	27	8	2.0	-	49.4	-	4.4	0	-
	MONTH	4.2	6	3	1	4.9	-1.0	1.9	-3.8	-5.4	21	18	5	-	0	-	-10.7	27	22	2.9	-2.4	102.1	141	5.8	6	22
Claremorris Co. Mayo	1-10	1.7	-	1	1	3.4	-0.6	1.4	-	-3.8	6	6	1	-	0	-	-6.1	8	6	1.7	-	19.1	-	5.3	1	-
	11-20	0.1	-	0	0	4.0	-0.6	1.7	-	-5.1	20	7	1	-	0	-	-7.2	20	7	1.3	-	19.5	-	6.6	4	-
	21-END	0.0	-	0	0	3.7	-5.1	-0.7	-	-6.7	21	8	0	-	0	-	-11.4	22	8	0.1	-	48.8	-	4.8	1	-
	MONTH	1.8	2	1	1	3.7	-1.9	0.9	-3.4	-6.7	21	21	2	-	0	-	-11.4	22	21	1.1	-2.9	87.4	129	5.6	6	17
Glenamoy Co. Mayo	1-10	1.8	-	1	1	4.8	-0.0	2.4	-	-3.2	7	5	2	-	0	-	-7.9	7	6	-	-	29.1	-	4.0	-	-
	11-20	0.0	-	0	0	4.6	-0.2	2.2	-	-2.3	20	6	1	-	0	-	-7.4	20	8	-	-	22.1	-	5.3	-	-
	21-END	0.0	-	0	0	4.3	-4.1	0.1	-	-5.1	28	8	1	-	0	-	-10.9	27	8	-	-	45.4	-	2.0	-	-
	MONTH	1.8	2	1	1	4.6	-1.3	1.7	-	-5.1	28	19	4	-	0	-	-10.9	27	22	-	-	96.6	-	4.0	-	13
Dunseny (Grange) Co. Meath	1-10	17.7	-	4	3	2.6	-0.5	1.1	-	-4.2	6	6	0	-	0	-	-7.0	6	6	-	-	8.1	-	-	-	-
	11-20	0.4	-	1	0	2.8	-0.5	1.1	-	-5.9	20	5	0	-	0	-	-8.5	20	9	-	-	15.7	-	-	-	-
	21-END	0.3	-	1	0	2.8	-3.7	-0.5	-	-7.7	21	8	0	-	0	-	-10.0	22	8	-	-	39.2	-	-	-	-
	MONTH	18.4	32	6	3	2.7	-1.4	0.7	-	-7.7	21	19	0	-	0	-	-10.0	22	23	-	-	63.0	-	-	-	-
Clones Co. Monaghan	1-10	0.3	-	1	0	3.3	-0.4	1.5	-	-3.9	6	5	0	-	0	-	-9.1	6	6	2.0	-	17.1	-	5.6	3	-
	11-20	0.0	-	0	0	3.9	-0.4	1.7	-	-4.5	20	5	1	-	0	-	-9.9	20	8	1.9	-	17.8	-	5.9	3	-
	21-END	1.0	-	1	0	3.2	-3.9	-0.3	-	-7.3	21	8	0	-	0	-	-12.9	21	8	0.6	-	39.9	-	4.0	0	-
	MONTH	1.3	2	2	0	3.5	-1.4	1.0	-3.0	-7.3	21	18	1	-	0	-	-12.9	21	22	1.6	-2.1	74.8	120	5.2	6	19
Birr Co. Offaly	1-10	2.3	-	4	1	2.9	-0.5	1.2	-	-4.0	6	6	1	-	0	-	-8.3	6	6	2.1	-	13.2	-	3.2	2	-
	11-20	0.1	-	0	0	4.3	-0.2	2.0	-	-3.6	20	5	1	-	0	-	-10.4	20	9	1.7	-	16.6	-	5.0	4	-
	21-END	0.0	-	0	0	3.9	-4.4	-0.2	-	-6.2	22	8	1	-	0	-	-11.7	22	8	0.6	-	51.3	-	3.7	2	-
	MONTH	2.4	5	4	1	3.7	-1.5	1.1	-3.5	-6.2	22	19	2	-	0	-	-11.7	22	23	1.5	-2.8	81.1	113	4.0	8	16

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 1 (CONTINUED)

FEBRUARY 1986

STATION	PERIOD	RAINFALL (mm)				TEMPERATURE (°C)														BRIGHT SUNSHINE		WIND													
		AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	AIR								GROUND		SOIL (10cm)		TOTAL NO. OF HOURS	% OF AVERAGE	MEAN SPEED (ms <sup>-1</sup> )	DAYS WITH GALE GUSTS	P.E. (PENMAN) (mm)													
						MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFFERENCE FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS ABOVE 4.4°C	% OF AVERAGE	DEGREE DAYS ABOVE 10.0°C	% OF AVERAGE	LOWEST "GRASS-MIN"						DATE	DAYS WITH GROUND FROST	MEAN DAILY	DIFFERENCE FROM AVERAGE									
Dundrum (Knockavilla) Co. Tipperary	1-10	2.2	-	4	0	3.2	-0.7	1.2	-	-3.9	6	6	0	-	0	-	-9.0	10	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11-20	3.1	-	1	1	3.4	-0.3	1.6	-	-4.7	20	6	1	-	0	-	-10.7	20	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21-END	0.0	-	0	0	3.4	-4.1	-0.3	-	-7.5	27	8	0	-	0	-	-12.9	27	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	MONTH	5.3	-	5	1	3.3	-1.5	0.9	-	-7.5	27	20	1	-	0	-	-12.9	27	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dungarven (Carriglea) Co. Waterford	1-10	1.7	-	2	1	5.2	0.7	3.0	-	-2.6	7	3	3	-	0	-	-5.0	6	6	-	-	19.6	-	3.0	-	-	-	-	-	-	-	-	-	-	
	11-20	0.5	-	2	0	4.6	1.3	2.9	-	-1.1	20	3	2	-	0	-	-4.0	20	5	-	-	4.8	-	4.4	-	-	-	-	-	-	-	-	-	-	
	21-END	0.0	-	0	0	4.2	-1.9	1.1	-	-5.4	22	7	1	-	0	-	-6.9	22	8	-	-	36.1	-	3.6	-	-	-	-	-	-	-	-	-	-	
	MONTH	2.2	2	4	1	4.7	0.2	2.4	-	-5.4	22	13	6	-	0	-	-6.9	22	19	-	-	60.5	-	3.7	-	15	-	-	-	-	-	-	-	-	
Mullingar Co. Westmeath	1-10	9.0	-	5	3	2.4	-0.6	0.9	-	-3.5	6	6	0	-	0	-	-5.4	8	6	1.6	-	9.7	-	4.6	1	-	-	-	-	-	-	-	-	-	
	11-20	0.0	-	0	0	3.3	-0.6	1.4	-	-5.5	20	6	0	-	0	-	-9.0	20	8	1.2	-	18.4	-	5.9	5	-	-	-	-	-	-	-	-	-	
	21-END	0.3	-	1	0	2.9	-3.6	-0.4	-	-6.6	21	8	0	-	0	-	-9.8	22	8	0.3	-	51.3	-	4.2	1	-	-	-	-	-	-	-	-	-	
	MONTH	9.3	15	6	3	2.9	-1.5	0.7	-3.3	-6.6	21	20	0	-	0	-	-9.8	22	22	1.1	-2.8	79.4	113	5.0	7	16	-	-	-	-	-	-	-	-	
J.F.K. Park Co. Wexford	1-10	4.5	-	7	1	3.9	0.4	2.2	-	-2.6	6	4	1	-	0	-	-7.9	6	6	-	-	13.8	-	4.8	-	-	-	-	-	-	-	-	-	-	
	11-20	0.1	-	0	0	3.7	0.3	2.0	-	-1.4	20	3	1	-	0	-	-6.4	20	9	-	-	10.5	-	6.3	-	-	-	-	-	-	-	-	-	-	
	21-END	0.0	-	0	0	3.5	-2.2	0.6	-	-3.5	22	8	0	-	0	-	-10.7	22	8	-	-	43.0	-	6.2	-	-	-	-	-	-	-	-	-	-	
	MONTH	4.6	6	7	1	3.7	-0.4	1.7	-	-3.5	22	15	2	-	0	-	-10.7	22	23	-	-	67.3	-	5.7	-	18	-	-	-	-	-	-	-	-	
Clonroche Co. Wexford	1-10	4.8	-	5	3	2.9	-0.2	1.3	-	-3.7	6	5	0	-	0	-	-10.2	6	6	-	-	11.1	-	2.0	-	-	-	-	-	-	-	-	-	-	
	11-20	0.0	-	0	0	3.2	-0.5	1.4	-	-2.5	20	6	0	-	0	-	-9.0	20	8	-	-	10.8	-	3.6	-	-	-	-	-	-	-	-	-	-	
	21-END	0.0	-	0	0	3.0	-2.8	0.1	-	-4.8	22	8	0	-	0	-	-11.0	22	8	-	-	47.1	-	N/A	-	-	-	-	-	-	-	-	-	-	
	MONTH	4.8	5	5	3	3.0	-1.1	1.0	-	-4.8	22	19	0	-	0	-	-11.0	22	22	-	-	69.0	-	N/A	-	N/A	-	-	-	-	-	-	-	-	
Johnstown Castle Co. Wexford	1-10	6.0	-	7	1	4.0	0.0	2.0	-	-2.9	6	5	1	-	0	-	-10.0	9	6	-	-	11.3	-	4.9	-	-	-	-	-	-	-	-	-	-	
	11-20	0.0	-	0	0	3.6	0.3	2.0	-	-1.5	20	3	1	-	0	-	-8.2	20	8	-	-	13.6	-	6.5	-	-	-	-	-	-	-	-	-	-	
	21-END	0.0	-	0	0	3.0	-1.9	0.5	-	-6.3	22	8	0	-	0	-	-12.4	22	8	-	-	44.9	-	6.2	-	-	-	-	-	-	-	-	-	-	
	MONTH	6.0	8	7	1	3.6	-0.4	1.6	-	-6.3	22	16	1	-	0	-	-12.4	22	22	-	-	69.8	-	5.8	-	15	-	-	-	-	-	-	-	-	
Rosslare Co. Wexford	1-10	3.7	-	5	1	4.5	2.1	3.3	-	-0.3	6	1	1	-	0	-	-2.9	9	3	3.0	-	11.8	-	9.2	7	-	-	-	-	-	-	-	-	-	
	11-20	0.0	-	0	0	4.7	1.5	3.1	-	0.1	15	0	1	-	0	-	-2.3	20	3	2.5	-	14.6	-	8.1	6	-	-	-	-	-	-	-	-	-	
	21-END	0.1	-	0	0	3.1	-0.4	1.4	-	-1.7	22	4	0	-	0	-	-8.7	22	7	1.9	-	45.9	-	8.6	4	-	-	-	-	-	-	-	-	-	
	MONTH	3.8	6	5	1	4.2	1.2	2.7	-3.1	-1.7	22	5	3	-	0	-	-8.7	22	13	2.5	-3.0	72.3	94	8.6	17	41	-	-	-	-	-	-	-	-	

NOTES ON THE TABLES IN JANUARY ISSUE

TABLE 2 GLOBAL RADIATION

STATION	PERIOD	AMOUNT MJ/m <sup>2</sup>
Malin Head Co. Donegal	1-10	24.17
	11-20	41.02
	21-end	56.60
	Month	121.79
Dublin Airport Co. Dublin	1-10	22.04
	11-20	30.33
	21-end	63.01
	Month	115.38
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	35.65
	11-20	39.25
	21-end	55.06
	Month	129.96
Kilkenny Co. Kilkenny	1-10	29.22
	11-20	33.81
	21-end	70.20
	Month	132.32
Belmullet Co. Mayo	1-10	36.51
	11-20	41.56
	21-end	64.96
	Month	143.03
Clones Co. Monaghan	1-10	28.08
	11-20	36.39
	21-end	55.75
	Month	120.22
Birr Co. Offaly	1-10	27.87
	11-20	37.05
	21-end	66.89
	Month	131.81

Notes on the tables in January issue

TABLE 3 POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE

STATION	PERIOD	SOIL MOISTURE (mm)			
		P.E. (mm)	Deficit	Accumulated Deficit	Surplus
Carlow (Oak Park) Co. Carlow	1-10	6.1	3	3	-
	11-20	9.9	10	13	-
	21-end	8.9	7	20	-
	Month	24.7	-	-	-
Kinsealy Co. Dublin	1-10	3.2	-	0	4
	11-20	6.9	7	7	-
	21-end	6.6	7	14	-
	Month	16.7	-	-	-
Cahirciveen (Valentia Obs.) Co. Kerry	1-10	8.6	3	3	-
	11-20	6.2	-	0	9
	21-end	13.1	13	13	-
	Month	27.9	-	-	-
Ballinamore Co. Leitrim	1-10	14.3	4	4	-
	11-20	7.9	7	11	-
	21-end	4.4	4	15	-
	Month	26.6	-	-	-
Glenamoy Co. Mayo	1-10	5.5	4	4	-
	11-20	7.3	7	11	-
	21-end	9.8	10	21	-
	Month	22.6	-	-	-
Johnstown Castle Co. Wexford	1-10	4.5	-	0	2
	11-20	10.2	10	10	-
	21-end	9.0	9	19	-
	Month	23.7	-	-	-

TABLE 4 SOIL CLIMATE (MULLINGAR)

BARE SOIL TYPE	PERIOD	MEAN TEMPERATURE (°C at 100mm)			TEMPERATURE GRADIENT (to 200mm)	SOIL WATER POTENTIAL (hPa) (at depths)	
		Max.	Daily	Min.		75mm	200mm
		Peat	1-10	2.2	1.4	1.1	+0.9
	11-20	1.5	1.0	0.6	+0.8	N/A	N/A
	21-end	0.5	0.2	-0.1	+1.0	N/A	N/A
Mineral	1-10	2.1	1.5	1.0	+0.6	N/A	N/A
	11-20	1.7	1.0	0.4	+0.5	N/A	N/A
	21-end	0.4	0.1	-0.3	+0.7	N/A	N/A

## special topic

### PHENOLOGICAL GARDENS IN IRELAND

In the early 1960's, a network of 'International Phenological Gardens' (IPG) was established in Europe, mainly in collaboration with forestry institutes. In early January 1964 there were 42 gardens located in the following countries; Norway, Sweden, Denmark, Germany, Belgium, Switzerland, Austria, Czechoslovakia, Yugoslavia and Greece. The Meteorological Service of the Federal Republic of Germany took the lead role in the organisation and supervision of the network of phenological gardens and the first phenological observations were made at the garden in Offenbach in 1959. Of course, these first observations were preceded by several years of preparation:- cultivation of the plants to be observed and establishment of the gardens.

In mid-January 1964, the German Meteorological Service invited the Irish Meteorological Service to establish "several International Phenological Gardens in Ireland this spring". With the ready consent of the Department of Agriculture and An Foras Taluntais three International Phenological Gardens were set up: at the National Botanic Gardens (Dublin), at Johnstown Castle (Wexford) and at Valentia Observatory (Kerry). The John F Kennedy Memorial Arboretum (Wexford) was included as a fourth garden shortly afterwards.

The principal objective of the IPG network is a study of the effect of weather on plant growth. Hence it is highly desirable that a climatological station should be nearby, if possible in the same local climate as the garden, in order that the phenological observational data may be evaluated in connection with the climatic data. An international garden network permits an analysis of plant performance in many and varied climatic zones. As trees and shrubs should be planted in loose formation, parks and botanical gardens are particularly suitable. The garden site is selected in an area which is representative of the local macroclimate and, ideally, where the soil is neither too dry nor too moist, neither too light nor too heavy and has sufficient nutrient content.

Dates of various phases of the growth-cycle are monitored e.g. date of leafing, first May sprouts, general turning of leaves, general fall of the leaves, first flowering and first fruitage. In order that the phenological data for each plant species could be analysed and directly inter-related throughout the garden network it was essential that each species had a common source of origin thus eliminating the possibility of any hereditary influences. Temporal changes in phenological phases are thus due only to exterior influences rather than any internal hereditary characteristics.

The original voluntary working group which undertook the establishment of the IPG network had two main tasks. One was to enlist appropriate institutions able and willing to establish such a garden in their grounds. The second task was the provision of appropriate clone plants to supply the gardens. The selection of plants and the choice of phenological phases to be observed also came within the ambit of this working group.

The number of gardens with observational data reached a peak of 66 in 1978 and included Iceland, Finland, Bulgaria and Portugal. The first plants for the gardens were vegetatively reproduced at the Institut für Forstgenetik und Forstpflanzenzucht, Wächtersbach and mailed in 1964. Since then the programme of plant reproduction has continued and distributions are made to the gardens in the IPG network as required. The plants are provided free of charge and the only cost incurred by the participating gardens are transport charges plus minimal staff costs in performing the observational routine.

A new era in the observational routine at Valentia Observatory began when the following trees and shrubs were planted on the 11th April 1964.

#### Deciduous Trees

- 3 Robinia Pseudoacacia (Locust-Tree)
- 3 Populus Canescens (Grey Poplar)

#### Shrubs

- 3 Salix Caprea (Goat Willow)
- 3 Salix Aurita (Eared Willow)
- 3 Sambucus Nigra (Elder)
- 2 Ribes Alpinum (Alpine Currant)

E J Murphy  
Valentia Observatory

(to be continued)