

by Fred E. Dixon

There are four schools of thought about climatic change. One finds evidence that we are entering the next Ice Age; another is as confident that the earth is getting warmer; a third believes that there has been no significant change in historical times, and the fourth is agnostic in such matters. Similarly there are always some who believe in cycles and others who do not. One of my pet ideas is that the best-marked 35-year cycle is that of belief in meteorological cycles. Whatever your feeling in these matters the test for your theory is in the study of the weather records, and Ireland is well served in this field.

The oldest records are of climate rather than weather, the testimony of glaciation and the pollen and plant debris in peat deposits. About 2000 BC, after a warm and wet period, there was a change to drier conditions and the bogs were replaced by forests.

A SEARCH OF THE ANNALS

The annals written in Irish monasteries provide the oldest written records for Europe, but the earliest events were already ancient before they were written down and there is considerable doubt as to the dating. According to the annals, Lakes Con and Techet overflowed about 2668 BC, nine lakes 'erupted' in 1629 BC. Such eruptions were probably due to bog-slides blocking lake outlets, but bog-slides do not necessarily indicate a wet season. A dry spring can encourage people to start cutting turf too early, and this can lead to the undermining of the front of a bog. Mentions of exceptional floods, droughts, gales, thunderstorms, frosts and snow continue through the mediaeval period. However, the fact that they were recorded is evidence that they were exceptional and tell nothing of the weather generally occurring.

The annals have been scrutinised by many scholars studying the Irish climate, the first being Joseph McSweeney (1829) whose essay won a £40 prize offered by the Royal Irish Academy. More comprehensive was the compilation by Sir William Wilde (1856) in Vol. I of Part V of the 1851 Census report. Best is C.E. Britton (1937) *A meteorological chronology to AD 1450*, Meteorological Office Geophysical Memoir 70. At present Professor Susan McKenna-Lawlor of Maynooth University is conducting a computer-based study, funded by the EEC, of the climatic evidence contained in the Irish annals from 536 AD to 1577.

EARLY IRISH WEATHER DIARIES

The earliest known Irish weather diary is for a few months of 1682-83, written at Kilkenny for the Duke of Ormond by John Kevan, and preserved in the National Library of Ireland. From 1684 to 1686 William Molyneux and St George Ashe were observing in or near Trinity College for the Dublin Philosophical Society and they included barometer readings in their records, but only one small extract survives. These observations were resumed in 1707 to 1708 by William Molyneux's son Samuel, who measured rainfall and temperature as well as pressure. The first

surviving Irish diary with thermometer readings was kept by George Rye near Cork for a year 1721-22 in connection with his assessment of perspiration. (He weighed everything he ingested and excreted.) Thomas Neve at Ballyneilmore on the shore of Lough Neagh devised a raingauge which he used first in 1711. He later had a barometer and thermometer. A copy of his diary for 1711-25 was made in 1726 and is still preserved by the Royal Society.

Best of the 18th-century weather diaries is the series covering 1716-66, surviving in three manuscripts, which formed the basis of John Rutt's works on the climate of Dublin. Also important is the record of 1753-55 by James Simon, printed by the Royal Society. The first station to be well equipped with instruments was Richard Kirwan's at his house in Cavendish Row, Dublin, where he observed from 1787 to 1808, having a pressure-plate anemometer of his own design.

Mention must be made of almanac diaries. From early in the 18th century some of the almanacs were supplied with blank interleaving, and many owners used these for diaries dealing mostly or entirely with the weather. The earliest of these surviving is for 1734. One exceptional series was written by Maximilian Favière, mainly in Dublin, from 1781 to 1811.

EARLY ORGANIZED WEATHER RECORDING

Four astronomical observatories are worth mentioning for their weather records — Dunsink (1788), Armagh (1790), Markree (1824) and Birr (1845). Armagh still continues and the synoptic station at Birr is a direct successor to Lord Rosse's. Meteorologically Dunsink was replaced by the geophysical observatory at Trinity College, Dublin, (1838) with the delightful building now on the campus of University College.

What are now the National Botanic Gardens, only a stone's throw from the Meteorological Service Headquarters, were founded by the Dublin Society (not yet Royal) in 1797 and by 1800 were keeping weather records. There was a break in the 1830s (when the alcoholic gardener was retired on pension) but the station is important as the oldest surviving, next to Armagh.

When the Irish Ordnance Survey commenced in 1825, sporadic meteorological measurements were made at the principal triangulation points and in 1829 a permanent observatory was established at the Dublin headquarters in Phoenix Park, as fully equipped as any in the world at the time.

In 1851 the Royal Irish Academy organised a year-long meteorological survey of Ireland with 16 stations, mainly coastguard stations or lighthouses. Some results were summarised by Humphrey Lloyd, including straight-line isotherms derived by the least-squares technique! The original observations are still preserved in the Academy.

1682

A Journall of the Wether as at Kilkenny for the month of January 327

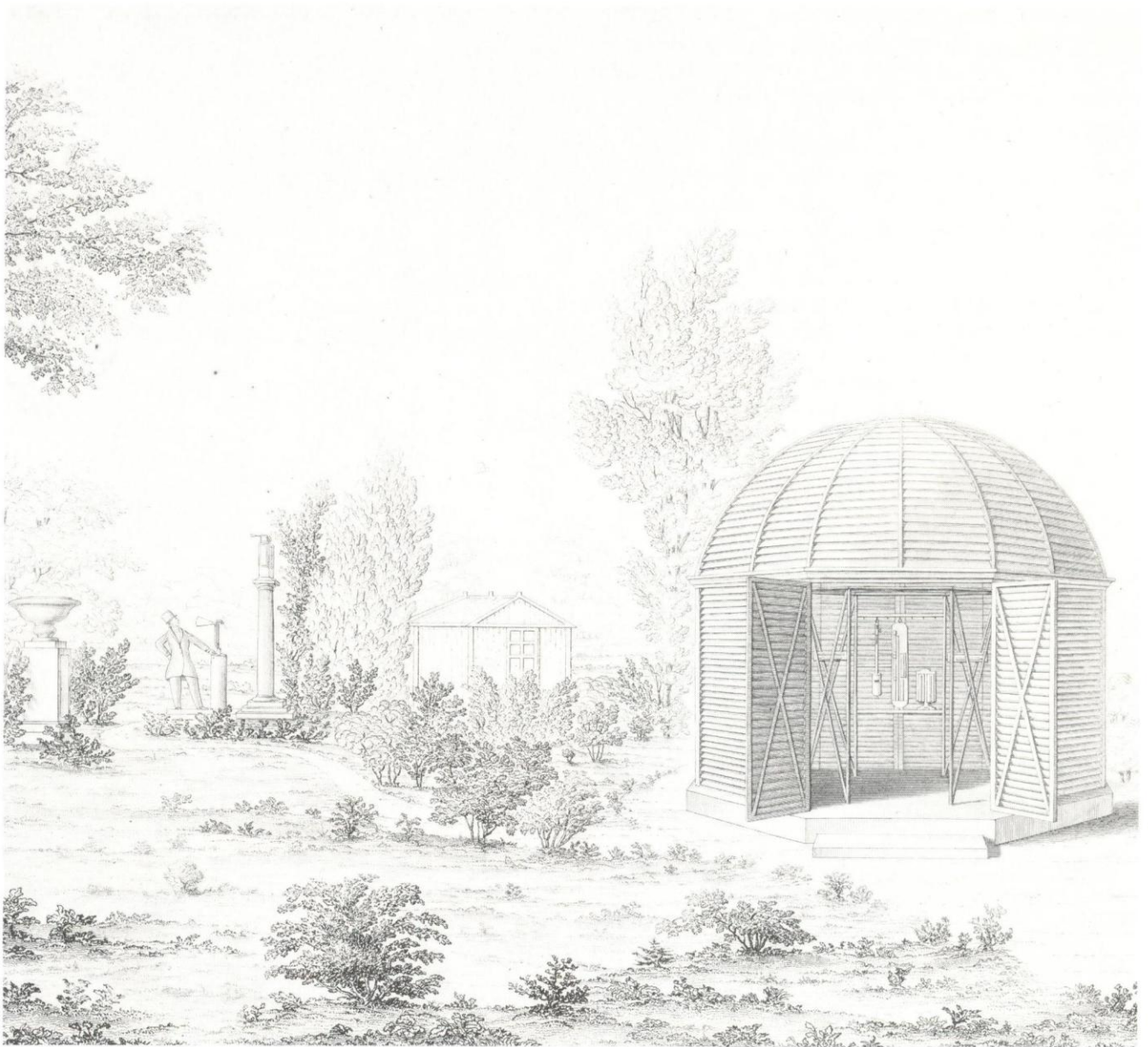
- 1 A Clear sunshine morning calme and dry, high winds and som Raine afternoon
- 2 A Cloudie calme morning, noe raine all day, a little windie in the afternoon
- 3 A Dark calme cloudie day, nither wind, or raine all day
- 4 A Dark calme cloudie day, noe wind, smale misting raine in the evening,
- 5 A Cold, cloudie, windie day, noe raine, or sunshine.
- 6 A Sunshine morning, raine the night before, a cold, and calm afternoon, noe Raine all day
- 7 A Sunshine day, frost the night before, calm, and noe raine all day.
- 8 A Sunshine day, calm, and dry, with great frost the night before.
- 9 A Sunshine morning, after a thaw, of frost, a fine afternoon, a cold freezing Evening.
- 10 A Great frostie morning, with sunshine at 12 day, a foggy mistie Evening.
- 11 A Dark calm morning, som raine the night before, noe alteration all day, but a little shower in 9 Evening.
- 12 A Warme, Dry, sunshine, morning, a cold afternoon, with high winds, and raine.
- 13 A Fair sunshine morning, raine the night before, cold winds most of the day.
- 14 A frostie morning, sunshine, all day noe raine, or windie
- 15 A Dark, cold, day, noe Raine, but a little windie
- 16 A Dark cloudie morning, noe raine or much windie, but a cold evening.
- 17 A Calm morning, with smale misting raine, sunshine the rest of the day, a shower of snow, and raine in the evening.
- 18 A Sunshine morning, with cold northerly windie noe alteration all day,
- 19 A Calme sunshine day, noe raine, or much windie, but a cold evening.
- 20 A Greater frost, clear ayer, and sunshine all day, a cold Evening inclining to frost,
- 21 A Dark foggy morning, a thaw of frost, a clear ayer, with sunshine afternoon.

The oldest known Irish weather diary. The page for January 1682/83 from the diary made by John Kevan of Kilkenny for the Duke of Ormonde. (Photo of National Library of Ireland MS 2428, p. 327)

One more recent weather record is noteworthy, that of Sir John Moore, whose station, most of the time in Fitzwilliam Square, Dublin, supplied continuous records from 1865 until his death in 1937.

Modern data accumulate so rapidly that, even with the most sophisticated equipment, meteorologists find it difficult

to make full use of them. Meteorological services cannot be expected to find time to analyse all ancient records, some only qualitative, and others based on instruments of doubtful accuracy with non-standard exposure. Nevertheless the pioneers deserve to be remembered, and their records must be consulted by all believers and non-believers in climatic change.



The observing station established in 1829 by the Ordnance Survey in Phoenix Park, Dublin.