351

The beginnings of time

The Quern-Dust Calendar — Raghnall MacilleDhuibh

IT was about midday on the 4th of January and though I was sitting reading it had got so dark I could hardly find the phone when it rang. It was Coinneach. "Could you talk about the calendar for ten minutes on my programme tomorrow?"

"Sure," says I. "I've written about it often enough in the Wee Paper. But it's a complicated subject." And I explained how complicated it was.

Soon the phone rang again. By now the snow was sweeping up the street from the north and flakes of it were birling around the bushes in the garden. It was Coinneach again. "I see what you mean," says he. "Let's make it fifteen minutes."

"OK," I said, eyeing the snowflakes. "I'll get myself to Edinburgh today so I can be sure of being in the studio in the morning."

I picked up David Ewing Duncan's paperback 'The Calendar' and brought it with me to Edinburgh to re-read overnight. It first came out a couple of years ago, long after all my pieces on the Gaelic calendar on this page. I bought it last year in an airport, as far as I can remember. I was surprised to see it — I didn't realise interest in such an arcane subject was so widespread. Now Coinneach was proving the point.

"*The Calendar* sparkles," burbled somebody on 'The Observer', so they put it on the front of the paperback. "Gripping, expansive and scholarly, indispensable." Yes, it is an interesting and useful book, but it is badly written. Full of split infinitives, sloppy syntax and things that make you do an extra double-take like 'the England poet and satirist John Donne', as if John were one of Kevin Keegan's lads. Maybe here in the doorway of the 21st century that sort of thing don't matter, but I've never noticed bad writing in the *WHFP*, no matter whether the subject has been medical science, Ness United, political stuff or a car boot sale in Plockton. And 'The Calendar' is an international bestseller! (Or so it says itself.)

David Ewing Duncan is a producer with ABC News. Maybe that explains it.

Anyway, the snow stopped, I got myself to the studio, and Coinneach and I chatted over the air for fifteen minutes without flagging. David Ewing Duncan's blood, sweat and tears allowed me to come out with lots of things I hadn't even dreamed of in the old days, so I shouldn't be unkind about his book. I will certainly be first in the queue for a revised edition.

I was careful to use the word *callainnear* for calendar, and I think I got Coinneach doing it too. The Romans (and others) used to count days not as we do now, Friday 14th January and so on, but by reference to Kalends, Nones and Ides. The Kalends were the 1st of the month, the Nones the 7th, the Ides the 15th. Shakespeare knew the system — "Beware the Ides of March," he has Caesar being told. The 2nd of the month would be *VI nones*, five days before the nones. The 14th January would have been *pridie ides Ianuarii*, the day before the Ides of January. After the 15th you might count back to the Ides for a week or so, then forward to the Kalends — you had easily enough fingers to cope with it all. The Greek word Kalends gave us not only the English word 'calendar' but also the Gaelic word *Callainn* as in *Oidhche Challainn* — 'New Year's Eve', or, if you like, 'Calendar Night', when it all begins again. So *callainnear*, in my Gaelic anyway and perhaps a few other people's as well now, is a calendar. It sets us free from *mìosachan*, which must surely be a missal or a calendar with months (*mìosan*) in it!

Other than that I can't remember much of what I said. Eight-thirty in the morning is Dreamtime as far as I am concerned. So let me put down a few facts about the calendar here — the plot, and some of the action, courtesy (on the whole) of David Ewing Duncan — to show how on earth we got from the likes of "Rejoice! The sun sinketh low on the horizon, so let us unharness the plough" to "Hello listeners, it's 8.30 a.m. on Wednesday 5th January 2000", which is what Coinneach wanted.

First, calendars are basically lunar or solar, but it does no harm to keep an eye on the stars and tides as well, not to mention the seasons. You can count twelve moons, and that will bring you back to nearly the same point in the year as when you started, but not quite. A moon is 29.53 days long, so twelve lunar months will give you 354 days, 8 hours and 48 minutes, and after a few years you will notice that your calendar is slipping quite badly against the seasons.

A lunar calendar is fine for some purposes. For example it gave us the seven-day week, seven days being roughly a phase of the moon. Eight days is also roughly a phase of the moon; the Romans held their markets every eight days, and eight days was the standard length of a medieval fair here in Scotland, so it was a close-run thing — if a moon had been 30.03 rather than 29.53 days long we would probably all now have a six-day week as well as our two-day weekend, and we would be even more dog-tired than we are.

Where you run into trouble with the lunar calendar is when you want to do things regularly in accordance with the seasons. We're talking basic farming here. As long as there were gods or a God it was obvious to everyone that such supreme beings were bringing nature round to the same point each year according to the position of the sun and the stars. Clearly they knew something we didn't, but good cropping and stock management required that we follow their example as best we could. So it seemed a good idea to try to hold birthdays and festivals on the same day every fourth season according to the sun and the stars, whatever day of the week that might happen to be.

Now that would be fine if the solar year were exactly 365 or 366 days long. But it isn't. It actually lasts 365 days, 5 hours, 48 minutes and 46 seconds. So even if you keep a careful count and hold your festival every 365 days, in four years time you're nearly a full day ahead of where you started. In a lifetime of sixty years you're fifteen days ahead of the season and beginning to worry that maybe the year is getting longer or

your crops are growing more slowly.

For millennia, wise men burned midnight oil wrestling with these problems, workers lost their lives building huge stone structures (like *Clachan Chalanais*) to measure the heavens for them, and politicians manipulated the results. The Greek city states, whose customs influenced those of the Romans and the Celts, all had different calendars, consisting of various sets of lunar months topped up here or there with 'intercalary' days to make them correspond to a solar year, or to a set of solar years. This way a festival could be brought forward or postponed without its calendar date being changed at all. The calendric New Moon could end up disagreeing by several days with the real new moon, and Athenian documents of the 2nd century BC cheerfully listed them side by side.

Thus was the 'month' invented, and when the astronomer Meton substantially solved all these problems in 432 BC by calculating a neat 'Metonic Cycle', having found that the moon returned to the same position every 19 solar years, he was ignored by the politicians, who were anxious at all costs to cling to the power that calendar-making gave them.

Thanks to all this, the Romans seem to have got by originally with only ten named months, which is why September, October, November and December (literally the Seventh, Eighth, Ninth and Tenth Months) are actually now the ninth, tenth, eleventh and twelfth months. It was King Numa Pompilius in about 700 BC (or so it's said) who added January and February, the 'doorkeeping month' and the 'month of expiation' (from a feast called *Februa*). It was sensible to name the new first month after the god of doorkeeping, but in Scotland till 1600 and in England till 1752 it seems to have been considered still more sensible to keep the seventh month as the seventh month — until then, you see, our New Year began on 25 March.

It was Julius Caesar, in 46 BC, who knocked heads together and ordered in a gruff military way that the whole empire was to use the same calendar. It would be a solar one with twelve months, 365 days, and an extra day every four years to cope with those awkward 5 hours, 48 minutes and 46 seconds. It was, and is, called the Julian Calendar.

End of problem? Not end of problem, unless you are Julius Caesar. Of course it's easy for us now to see that an extra day every four years is a slight over-compensation for dealing with something less than 6 hours. The fact is that the Julian Calendar ran for a thousand years and more in which time could not efficiently be measured — in a word, no clocks — and in which the mathematics to express the accurate measurement of time did not exist either — in a word, no fractions.

David Ewing Duncan is very good on this, pointing out for example the brilliance of the Arabian scholars who invented our system in which each digit is worth ten times the one that follows it, as is the case in our "365" but not in Caesar's "CCCLXV", and who also invented zero. Yes, zero. He says: "These discoveries made it possible just before the end of the first millennium of the Christian era to actually write out the number that represent [*sic*] the true solar year — 365.242199 days — though as of yet no one had been able to come up with such an exact astronomic value. It also would have been written without the dot for the decimal point, which was added much later."

In the development of the calendar, then, the end of the first millennium was important. In a fortnight's time I'll write about the fun and games that were had in the years between 1582 and 1752 when the over-compensation was dramatically fixed by dropping ten or eleven days from the calendar. (In 1582 the Belgians missed Christmas, for example, but everyone else had more sense.) Recalling my interview with Alex Woolf in the last two *WHFP*s on the subject of the year 1000 in Scotland, I'll end this piece with a fascinating quote about that same year from Duncan's book. "As Christians waited for Armageddon, they had more immediate concerns: they lived, ate, worked, bore children, sang songs, laughed, cried and died as they always had, with only an occasional thought about the Antichrist or the last days of a calendar most medieval Europeans were at best vaguely aware of."

Maybe I was too hard on Duncan. This is good writing. "At the same time a new invention was spreading slowly across the West: the bell. Called *glocke* in German — whence came our word *clock* — bells were used to signal hours and other times of the day. By legend, church bells were invented in the fifth century in the town of Nola in Campania — thus the term 'Campanola bells'."

He concludes: "They were the first mechanical 'clocks' to govern everyday life in Europe, usually rung according to time as measured on a water clock or sundial. Imagine a farmer in a field being told to have an acre ploughed by the time the bell tower rang noon, when before he had been told by his lord simply to work until the sun was high. Or think of a clock that signalled the beginning of a mass with an exactitude never before known . . ."

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