

size will stay at about 2.33 and that the decline in births which has occurred since 1964 is a result of birth postponement rather than a decline in completed family size. Support for this assumption comes from replies to questions on intended family size in the 1971 *General Household Survey* (HMSO, London; 1973) but, as the GLC study points out, intended behaviour may not be a good indicator of actual behaviour in this case and replies may reflect spontaneous feelings at interview time rather than firm family size plans.

The authors of the GLC report argue that the fall in births is not a temporary feature at all but a permanent one from a decline in completed family size and an increase in the spacing between births. To support this assumption they cite the way couples who wish to postpone parenthood can do so effectively with modern contraceptives and several reasons which may be encouraging more couples to do this, including the desire of wives to have careers and attaching greater importance to material well-being than family rearing. Against the official projection's assumptions that births are merely being postponed, Gilje and Gould put forward the novel point that the 'appropriate' age range for having a family is socially defined and that some of the couples who may intentionally be postponing births will pass the upper limit of the range without ever achieving their originally intended family size.

The zero growth projection produced by the GLC team is one of two they have produced, on differing fertility assumptions. The other gives a 2011 population of about 53 million, still 5 million below the official figure. None of these three figures can be said to be any more 'accurate' than the other predictions.

At present, Britain is in a transition period of fertility behaviour, contributing at least partially to the differences. Only when the transition ends and the patterns stabilise will the range of alternative assumptions on future fertility behaviour be narrowed.

## GEOPOLITICS

### Forensic Seismology

from our Geomagnetism Correspondent

"I REMEMBER, when our whole island was shaken with an earthquake some years ago, there was an impudent mountebank who sold pills which (as he told the country people) were very good against an earthquake". As the multi-million dollar industry purveying nostrums for the common cold indicates, the sort of quackery recorded by Joseph Addison in *The Tatler* of about 250 years ago persists to this day, albeit in a form more appropriate to a

supposedly more sophisticated market. Of course, it is hard to imagine that many people today would expect any problem associated with earthquakes to be resolved quite so easily, although, as Dr H. I. S. Thirlaway pointed out some time ago in the Tenth Harold Jeffreys Lecture, some politicians of the early 1960s came very close to it in supposing that there might be a ready-made scientific pill to cure the seismic malady of the day—the headaches induced by the inability to distinguish between earthquakes and underground explosions at a distance. Whether those same politicians ever reversed Addison's indignation and privately berated the seismologists as charlatans for not being able to come up with an appropriate medicine bottle has, not surprisingly, gone unrecorded. At any rate, in public they blamed not the scientists but the science, bandying about such phrases as 'Stone Age' and making invidious comparisons with the state of the more trendy sciences of nuclear physics and space research.

With the publication of Thirlaway's lecture (*Q. Jl R. Astr. Soc.*, 14, 197; 1973), one is again able to savour the retrospective delights of those early days of treaty making, when one optimistically assumed that what was to become the limited Test Ban Treaty of 1963 could be converted into a comprehensive agreement by rapidly pulling the right pill out of the doctor's hat. This is, of course, the field that Thirlaway himself has christened "forensic seismology". A minor diversion to the dictionary is required here, revealing that 'forensic' derives from the Latin *forensis* for forum or market place—a formal definition which perhaps does too little to emphasise the element of argument implied by the modern adjective. In any event the intended analogy with forensic medicine, or (that dictionary again) "the application of (medical) knowledge to the elucidation of doubtful questions", is perfectly clear and suggests that the experiences of the medicine men of the late eighteenth century might have contained some lessons for the seismologists of the late 1950s who found themselves confronted with scientifically illiterate politicians anxious to politicise science to save mankind.

Consider with Thirlaway, for instance, the example of one John Hunter, a medical man of some repute who was persuaded to give evidence in that capacity in the case of *Rex versus Dunellan* at the Warwick Assizes of 1781. The aforementioned and unfortunate Dunellan stood accused of the crime of poisoning by laurel water, and his prospects were not particularly bright when Hunter was called to appear as an 'expert' witness for the prosecution. Were the described symptoms

## ASTRONOMY

### Lockyer's Telescope



SIR NORMAN LOCKYER'S 6¼ inch Cooke refractor has found a new home only 80 miles from the observatory which he founded at Sidmouth in his declining years (see *Nature*, 240, 176; 1972). Early in 1972 the Exeter Astronomical Society started building a 15-foot-diameter dome to house Lockyer's historic instrument, and on August 11 this year the inauguration of the completed project was performed by Professor G. K. T. Conn, Director of the Norman Lockyer Observatory.

The telescope is that with which Lockyer made his spectroscopic analyses of the Sun, culminating in his discovery of helium. One hundred years since Lockyer made his first drawings of Mars the instrument is being used for drawings of the present opposition of that planet by the amateur members of the Exeter Astronomical Society.

An extensive programme of observations, including lunar and planetary studies, is in progress by members of the society, and soon photographic work will be started with the installation of an electric equatorial drive.

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consistent with death by laurel water or were they not? the court wanted to know of Hunter. The poor Hunter did not know. "I do not mean to equivocate," he said, "but when I tell the sentiments of my own mind, what I feel at the time, I can give nothing decisive."

Nor, according to Thirlaway, could the scientists on the technical working group of the Geneva Conference of the Discontinuance of Nuclear Weapon Tests who began work on October 31, 1958. They found themselves in much the same dilemma as John Hunter; and, like John Hunter, they discovered too late their lack of clothes. Of course, Hunter and the early history of forensic medicine were hardly uppermost in their minds; nothing had been learned from history (a common enough failing)—neither from the vast case history of medico-legal activity, nor, Thirlaway might have added, from the equally vast precedent involving the many Earth scientists who had been called upon to