

imagination?) that Gibbon describes the *Persian Calendar* as "in accuracy greatly exceeding the Julian, and even approaching the Gregorian". This Persian Calendar was instituted in the 11th century, chiefly by Omar Khayyam, better known as a poet. Many years ago, hearing that the Persian ex-Minister of Education would visit Eton, I invited him to my school-room, quoted (or misquoted) Gibbon, and (having previously "done" the Gregorian error of 26 seconds) plunged into the Persian Calendar. Seven times this provides for *three* ordinary years and a leap year, like the Julian system, but the eighth time it gives us *four* 365-day years before the leap year. This makes the Persian year $365\frac{8}{33}$ days, or 365 d., 5 hr., 49 min., $5\frac{1}{2}$ sec. which exceeds the true year by only $19\frac{1}{2}$ sec., just $\frac{3}{4}$ of the Gregorian error. Naturally my visitor was delighted, passed a unanimous vote of censure on Gibbon, and talked to the boys about Omar Khayyam till the clock struck.

In addition to cleaning up the inside of our year on the lines suggested by Mr. Bushell, we would do well to adopt a system of leap years simpler than the Gregorian, more accurate, and recurring in a period of 33 years instead of 400. Or are we, like Horace, to "hate Persian apparatus"?

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To the Editor of the *Mathematical Gazette*

DEAR SIR,— I have read the article on "The Geometry of Megalithic Man" in your last issue with much interest. May I supplement one observation by the author who mentions solar alignments, by means of outlying stones or otherwise, in Caithness, Sutherland and elsewhere.

Sixty years ago I helped my father to plan some of the Prescelly circles in Pembrokeshire. Before the coming of the motor car they were little known, but their comparative abundance led my father to write of this area as the "Westminster Abbey" of Prehistoric man, a phrase that was quoted by Dr. Thomas the geologist when, soon after the First World War, he proved that the blue stones at Stonehenge came from that area. Some of these circles had outlying stones pointing to sunrise at the summer solstice, similar to the more famous case at Stonehenge. I also found other solar alignments, not only there, but elsewhere as well.

Sir Norman Lockyer examined these monuments from an astronomical standpoint, and published his book *Stonehenge* in 1906. He claimed that some alignments, by means of outlying stones, were to the rising of well known bright stars. Owing to the precession of the equinoxes, and consequently the movement of these stars in declination, such stellar alignments were no longer accurate, and the age of the monument could be calculated. This has not met with general acceptance, but *solar* alignments were certainly employed in some cases. It is interesting for instance to find that all the remaining megalithic passage graves in the Channel Islands point to sunrise on some day in the year, and other examples could be quoted.

Yours faithfully, W. F. BUSHELL