

tion of both sides of the subject involved very wide reading in many languages and extensive travel, often in not easily accessible regions. The references in ancient writings are almost uniformly of the scappiest kind, and in very many instances later developments have destroyed the evidences of Roman working. It is but rarely that Roman machinery is actually found in a mine, as at Rio Tinto.

One naturally turns with interest to the chapter on the British Isles. Here the author wisely allows himself some latitude and discusses the problem of the location of the Cassiterides, which he judges to be Cornwall, and he takes the common-sense view that Ictis was St. Michael's Mount. Any mining geologist who has not already done so, would read with great interest a discussion of this subject in an appendix to a book by Rice Holmes on Cæsar's invasion of Britain. It seems clear that one important reason for this and other Roman expeditions to Britain is to be found in exaggerated reports of the mineral wealth of the country then current on the continent. It is much to be regretted that a Greek tourist of about A.D. 150 quoted by Rice Holmes did not tell us something more definite about mining, instead of grumbling about the over-crowding and discomfort of the Channel boats, probably the earliest reference to that perennial subject.

Similarly in other parts of Europe some of the relics of mining industry earlier than Roman times are mentioned, while within the ostensible scope of the work an enormous amount of information has been brought together. The book cannot fail to be of value and interest to mining geologists of antiquarian tendencies.

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## CORRESPONDENCE.

### PLEISTOCENE CHRONOLOGY OF CENTRAL EUROPE.

SIR,—Dr. Zeuner's paper in your August issue is a valuable mine to workers in this field. As far as the correlation goes the stratigraphy seems to work out very well, though it would be interesting to hear how far French and British workers are prepared to link up. The chronology, however, is another matter, relying as it does upon Milankovitch's curve, which is speciously attractive. The objections are (a) the figure of 21,000 years for precession is one frequently met with in archaeological and other works; but in *Ency. Brit.* "Precession" it is "about 26,000 years" and, *ibid.*, "Earth" "about 25,800 years", my recollection of the figure being 25,960 years. Any one of these figures replacing the 21,000 used would throw the curve badly out of gear. (b) The estimate of heat effect

which a dip or rise of the curve would have is a matter for serious argument too long to go into here.

Objections to the application of the theory are less serious but still formidable ; it seems to throw the Riss glaciation too far back, also the Acheulean culture, and brings the Chellean and previous cultures too late : in narrow valleys in the district under review the hypothesis of terrace formation may seem satisfactory, but in wider valleys a dwindling river could not be held able to choke its valley throughout its length with gravel up to, say, 55 m. ; also it leaves unanswered the question of valleys with similar terraces away from all ice, e.g. the Nile.

R. G. LEWIS.

*2nd August, 1935.*

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### **The Centenary of the Geological Survey of Great Britain.**

FOR many years it was notorious that the home of the Geological Survey and Museum in Jermyn Street and Piccadilly was quite inadequate for its purpose, and the climax was reached when a bomb dropped at a venture from a Zeppelin gave the old building a bad shake, rendering it positively unsafe. After the usual necessary (or unnecessary) official delays, plans were drawn up, and actually carried out, for a new building on a generous scale in South Kensington. When this building was almost ready for occupation, it was commandeered by the Government for the Imperial Economic Conference, and thus, by what must be regarded as a happy coincidence, the formal opening was deferred till 1935, which happened to be the centenary of the establishment of the Geological Survey.

The new building was formally opened by the Duke of York on Wednesday, 3rd July, and this was followed by a formal celebration of the Centenary. The President and Council of the Geological Society of London also held a reception at Burlington House on the evening of 3rd July in honour of the occasion.

It is officially announced that Sir John Flett, LL.D., F.R.S., is retiring from the Directorship of the Geological Survey in the autumn, and that he is to be succeeded by Dr. Bernard Smith, F.R.S. We should like to express our deep regret at the first of these announcements, and our sincere congratulations to Dr. Smith on the second.

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