

be accepted with little qualification as indicating that little or no CO₂ existed in the atmosphere of that period. The negative phase calls for investigation. Apatite may be absent because of (a) absence or scarcity in rocks yielding the sediment, (b) pre-depositional solution, (c) post-depositional solution.

Of these (c) may render impossible any determination of the conditions prevailing at the time of deposition. The conditions under which the sediments accumulated have to be considered—deposition in sea or fresh water, and the possibility of aeolian attrition. Supplementary evidence as to conditions is furnished by quantitative data of the occurrence of monazite, which is usually found along with apatite, and by the condition of the monazite grains.

The view that the CO₂ content of the atmosphere was greater in the earlier geological periods does not agree with the inference from comparison of the quantitative data of the apatite content. Probably the amount was never much greater than at present, often much less. Torridonian, Cambrian, Lower O.R.S., Carboniferous, and other periods, believed on theoretical grounds to have had higher temperatures than the present day, have also a high content of atmospheric CO₂, confirming the conclusions of Arrhenius, Tyndall, and other physicists that a higher CO₂ content is the cause of higher temperatures.

CORRESPONDENCE.

PLEISTOCENE DEPOSITS OF THE GREAT OUSE BASIN.

STR,—In the discussion of a paper which I read before the Geological Society on 8th March, Mr. Lamplugh made some remarks to which I could not reply, partly through lack of time, partly because they did not bear directly upon the matter of my paper as delivered, when I confined myself solely to the deposits of the lower part of the Great Ouse Basin.

The correlation of the supposed marine deposits of March with the river-gravels was put forward by the geological surveyors, and is in my opinion supported by the fossil evidence. As the March gravels are now being studied by Mr. F. G. Walker, of Manea, I await the publication of his results.

The assumption that because some of the river-deposits contain a "temperate" fauna, the ice had therefore all gone, has, so far as I know, never been stated by me. In my paper I argued that it had gone from the area under description. The evidence over wide areas is so conflicting that he would be a bold man who made such an assumption.

There appears, however, to be good evidence of marked climatic oscillations over a wide area in this country, e.g. at Hoxne, where beds with a temperate flora overlie boulder-clay and underlie others

with an Arctic flora on the Cumbrian coast, where Dr. Bernard Smith has detected a peat with a temperate flora between two glacial deposits, and on the Durham coast, where Dr. Trechmann has found an accumulation claimed as loess similarly intercalated. Then there is the significant section at Kirmington. By the way, if the Kirmington tract was submerged, why not that of March also, lying further south ?

I may note that anyone examining the glacial deposits of the Cambridgeshire plateau might well argue for a single glaciation there, though Messrs. Rastall and Romanes considered that earlier glacial deposits here were ploughed up by, and their contents incorporated with, those of a later period. It is chiefly in the valleys where the gravels were deposited in considerable thickness, and afterwards protected from later ice, according to my view, that the evidence for their intercalation between two periods of glaciation of the district is obtainable.

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CAMBRIDGE.
18th March, 1926.

GEOLOGY OF THE EAST INDIES.

SIR,—May I invite the attention of English geologists interested in the East Indies to a book recently published by The Macmillan Company in the U.S.A., *The Geology of the Netherlands East Indies*, by Professor H. A. Brouwer, of Deft. The book is a series of lectures delivered at Michigan University, and is a most valuable summary in English of a mass of Dutch geological literature. On inquiring for the book in England I found it was unknown, even by Macmillan and Company, Ltd., London. It was published in New York in October, 1925.

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