

country around Lichfield, published in 1919, accepts the correlation of the Seven Feet coal of the Warwickshire coalfield with the Main coal of the Leicestershire coalfield to which I drew attention in 1913, but adds (p. 59) that "the Main is the only seam with which any considerable number of marine fossils is associated in Leicestershire".

In point of fact, the marine bed over the Main coal is thin and has a poor fauna, but thousands of tons of the thick Pottery clay marine bed have been quarried, and a dozen magnificent exposures with a rich fauna are available to the collector.

Measured sections of the bed are published in two survey memoirs, although its marine character and fossils were not detected, but it is disappointing to find that the most important index bed in the western portion of the coalfield has received no official attention, although one of the senior authors of the Lichfield memoir was present at the reading of my 1913 paper, which was illustrated with map, sections, and fossils. Putting this detail aside I do feel that I owe an apology for still further postponing a paper on the Leicestershire coalfield in view of the cordial assistance the various Firebrick and Pipeclay manufacturers gave during my brief yearly visits from 1907 to 1914.

R. D. VERNON.

CAIRO.

8th November, 1923.

#### LATERITOID IN NORTHERN RHODESIA.

SIR,—Such deposits as that described by Mr. Murray-Hughes in the November GEOLOGICAL MAGAZINE are very numerous in N. Rhodesia and Katanga: they are undoubtedly of lateritic origin.

The name applied to them is of no great importance. Laterite, lateritite, and lateritoid are all genetically similar, differing in the amount of ferric and aluminium hydroxides they contain and in the nature of the rock from which they are derived.

Very little of the ferric hydroxide in any lateritic bed ever comes from the same part of the mother rock. It is not usually residual, but is derived from ground water in which it is ordinarily carried as ferrous bicarbonate and from which it is precipitated on contact with oxygen, carbonic acid being liberated at the same time.

*Evaporation is not the cause of iron-bearing solutions depositing their iron, but oxidation is.* Even a weak solution of ferrous bicarbonate will deposit its iron completely as ferric hydroxide immediately it comes in contact with excess of oxygen.

Laterite does not form below permanent water level, as in perennial swamps, though iron deposits such as bog iron ore collect in such situations. These, however, are not lateritic, the criterion being the presence of free alumina, which is never a component of true sedimentary iron ores.

It is many years since Sir Thomas Holland suggested that bacteria might be concerned in bringing about the changes by which various rocks are converted into laterite. In the literature of the subject this is referred to many times.

Closer study of the laterization process will reveal the fact that lowering of the water table by denudation has not "aided in the formation of the lateritoids" in the plateau referred to, but stopped it completely.

J. MORROW CAMPBELL.

WALLINGTON.

19th November, 1923.

#### THE SHELL OF *CORNULITES*.

SIR,—Dr. Bather's communication on the structure of the shell of *Cornulites serpularius* (GEOL. MAG., Vol. LX, No. 714, Dec. 1923, p. 542) indicates that he has not yet made up his mind about the zoological position of this genus. It may therefore be of interest to remark that since the publication of my paper on certain Girvan species of the genus to which Dr. Bather refers, Mr. F. W. Chapman, of the National Museum, Melbourne, has written to me that he had some time previously arrived at my conclusion, and he has referred me to his paper (*Proc. Roy. Soc. Victoria*, vol. xxxi, N.S., pt. ii, 1919, art. x, p. 321), in which he states: "The present writer holds that the evidence for the annelid nature of these tubes is quite convincing, since the internal microscopic structure of the shell as shown by G. R. Vine is identical in many points with some living tubicolar forms belonging to the family *Serpulidæ*, and this is further strengthened by the frequent occurrence of attachment in the earlier stage to foreign bodies." Further, Professor W. N. Parks in his recent description of a species of *Cornulites* from the Toronto district (*21st Ann. Report Ontario Dept. Mines*, vol. xxxi, pt. ix, No. 4, 1923, p. 37) places the genus in the order Tubicola of the Vermes without hesitation. With regard to Dr. Bather's figures of the internal structure of *Cornulites serpularius*, the characters which he depicts (without stating the enlargement) have been long known to me, but unfortunately none of the Girvan specimens (which belong to other species) lent themselves to section-cutting. Dr. Bather correctly states that the tube of *Cornulites* does not consist of *separate* imbricating rings, but is a perfectly continuous structure. With that statement I am in complete accord, as Dr. Bather will see if he reads my paper carefully, for I do not adopt Ludwig's opinion. The distinction between the imperfectly known and unsatisfactorily defined genus *Tentaculites* and the genus *Cornulites* is "a problem for future solution".

F. R. C. REED.