

THE TERM 'LATERITE'.

SIR,—The question as to the use of the term 'laterite' raised by me in the September number of last year's *GEOLOGICAL MAGAZINE* has figured in so many subsequent numbers that I feel some diffidence in asking you to publish any further remarks on the subject. I am indebted to Dr. Evans for an expression of his views, based as they are, I note, on an intimate acquaintance with the material to which the name was first given. There is a tone of remonstrance in Dr. Evans' letter that may appear justifiable under the circumstances, but I venture to think that this has led the writer a little astray from the path of argument and to lose sight of the main issue, which is the practicability at the present day of forcing a new definition of laterite on geologists and engineers, or, indeed, the right of anyone to do so. Dr. Evans is more concerned on account of my opinion that the term is of little use as matters stand now, and falls into the error of crediting me with the statement that it "must be abandoned". For my part, if I treat some of the points raised very briefly, I trust it will be clear that I do so only in order to save your space.

In Dr. Evans' third and fourth paragraphs I cannot see that a strong case is developed against calling highly aluminous laterite 'bauxite', and would refer to the quotations in my last letter, which appear to have been passed over. Dr. Evans is doubtless aware that in *Mineral Industry* some Indian laterites have been referred to as bauxites. Perhaps 'aluminous laterite' as opposed to 'ferruginous laterite' would be more acceptable? My point is that the term 'laterite' alone should not be held to imply the presence of free aluminium hydroxides in quantity, because that was not the original significance of the term, and because that is not implied by the chief users of the term at the present day.

In paragraph 5 Dr. Evans asks what could be more suitable for this well-characterized formation than the name Buchanan applied to it over a century ago. What indeed? But why attach to the name Buchanan gave a new definition that has no etymological connexion with it?

With regard to Dr. Evans' eighth and final paragraph, I cordially agree with him that the application of the rule of priority is needed here, but I cannot agree with him when he says that the term 'laterite' has continued in use with the same significance ever since 1807. It is surprising that the derivation of the word should be so completely ignored by those who make this statement.

It will be remembered that this correspondence commenced because a reviewer stated that only products of weathering containing free aluminium hydroxides in hot, moist climates should be considered as laterite. The presence of these hydroxides in Indian laterites became generally known in 1903, but prior to that year the name had spread to other countries, where it was used, not always in strict accordance with Buchanan's definition, for ferruginous weathering products that are useful in public works. No one denies the great interest of the discovery that Indian and other laterites contain free aluminium hydroxides, but it is questionable whether that gives

anyone the right to insist on their presence being considered the leading characteristic of a product whose name indicates its resemblance to bricks.

That the letters I have written may not be said to be wholly critical, may I add that I have lately examined a number of Malayan rocks with a view to determining the presence or otherwise of free aluminium hydroxides, and have not yet failed to obtain a positive result; but the work has been preliminary only, and I am not prepared to make definite statements as to the quantities present or the degree of hydration. A weathered granitic rock gave over 10 per cent. of alumina. A mass of kaolin afforded about 2 per cent. alumina. All the Malayan 'laterites' that I have examined yield a small quantity. The Malacca laterite, which is the only laterite in the Peninsula that I know of agreeing strictly with Buchanan's definition, contains these hydroxides also. A grey clay-slate taken from the top of a pass far from granite outcrops and associated with quartzite yielded a precipitate of aluminium hydroxide equivalent to about .05 per cent. of alumina.

I do not think for a moment that I am alone in supposing that the production of free aluminium hydroxides is widespread in the tropics, or that it is not confined to laterite in its widest sense; but what would be of great interest is a comparison along these lines of rocks in tropical and temperate regions, for it is hard to believe that the amount of hydroxides found in the tropics is other than a development of a process regulated by temperature, moisture, and perhaps vegetation, and that they are not being produced in smaller quantities in temperate climes also.

J. B. SCRIVENOR.

BATU GAJAH,
FEDERATED MALAY STATES.
May 7, 1910.

OBITUARY.

ROBERT PARR WHITFIELD.

BORN MAY 27, 1828.

DIED APRIL 6, 1910.

R. P. WHITFIELD, who was born in New Hartford, New York, had for fifty-four years been engaged in geological and palæontological work. He was one of James Hall's assistants in the first State geological survey of Iowa, from 1856 to 1876; and he then became palæontologist to Professor T. C. Chamberlin's State survey of Wisconsin. He laboured also for Clarence King in the Geological Survey of the Fortieth Parallel, contributing to the Palæontological Reports published in 1877. His researches were mainly on the fossils of the Palæozoic formations, and he dealt with all groups of Invertebrata. From 1872 to 1878 he was Professor of Geology at the Rensselaer Polytechnic Institute, Troy, N.Y., and since 1877 he had been Curator of the Geological Department in the American Museum of Natural History.¹

¹ For most of the above particulars we are indebted to Mr. G. P. Merrill's *Contributions to the History of American Geology*, 1906.