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CORRESPONDENCE.

LATERITE.

SIR,—Mr. Maufe's letter in the March number of the *GEOLOGICAL MAGAZINE* encourages me to offer a few more remarks on the subject of laterite. If anyone who is sufficiently interested in the subject will consult Buchanan's original description in *A Journey through the Countries of Mysore, Canara, Malabar, etc.* (vol ii, second edition, published by Higginbotham and Co., Madras, in 1870), it will be found that there are seven references to laterite, on pp. 116, 129, 197, 249, 264, 376, and 381; and that in four of those references granite is mentioned as the associated rock. Moreover, on the 1931 (5th edition) Geological Map of India, sheet 6, the country traversed by Buchanan is shown as recent, older alluvium, "unclassified crystallines," gneiss, Charnockite Series, granite and syenite, with some old sediments. At Salem only is there ultrabasic rock. The inference that the type laterite described by Buchanan is a weathering product of granite or closely allied rocks is strengthened by an official letter I received from the Geological Survey of India in 1930 in which I was informed that Buchanan's laterite is a detrital form varying from "limonitic haematite to argillaceous or siliceous limonite". There is no mention in this letter of the aluminium hydroxide that one would expect as a weathering product of basic rocks. Until we have analyses of specimens from the type localities, therefore, we have some ground for believing that Buchanan described the weathering product of acid rocks in which the amount of aluminium hydroxide is negligible. If he had made his observations on the Deccan Trap, which lies to the north of the area he traversed, he might have named "laterite" something rich in aluminium hydroxide, if it was in use as building material. It may be remembered that I have suggested that generally speaking in weathering the formation of aluminium hydroxide is characteristic of basic rocks while hydrated silicate of aluminium is characteristic of the weathering of acid rocks, even in tropical climates. Dr. E. Parsons, in a review of "The Geology of Malaya" (*Mining Magazine*, December, 1931), says that this is in accordance with his experience in the East Indies, India, and Africa; so I suspect more strongly than ever that we have been on a wrong scent in thinking that the production of aluminium hydroxide from feldspars depends on climate.

I have already quoted, in "The Geology of Malaya", M. Blondel and Mr. A. C. de Jongh on this subject.

Mr. Maufe mentions *Laterite and Lateritic Soils*, published by the Imperial Bureau of Soil Science. I had the advantage of meeting the authors of this paper at the Rothamsted Experimental Station shortly before it appeared and am grateful to them for information and for the valuable chemical work that they have done. As Mr. Maufe remarks, soil chemists are establishing a definite type of "lateritic" soil. The definition is based on the silica/alumina ratio in clay fractions. Agronomists have adopted laterite and cradled it with their own offspring "podsol". Unless we want to retain the term in Buchanan's original, utilitarian sense I think we might gracefully acquiesce in this adoption. I have contended before that it is now of little scientific value and I am sure that Buchanan's etymological child is now in excellent hands.

Finally, Mr. Maufe raises the question—is Buchanan's laterite forming at the present day or not? I cannot give any first-hand evidence about India, but the Malacca laterite, which Dr. Ward mentioned as agreeing exactly with Buchanan's laterite, is certainly forming at the present day and will continue to form as long as there is water in the ground.

J. B. SCRIVENOR.

RECOVERY OF BROMOFORM.

SIR,—There appears to be no published record of the following simple method of recovery of the bromoform absorbed by sands during the separation of heavy minerals by means of this liquid.

It has been the practice to extract the bromoform from the residues by washing with benzene and then separating the liquids by fractional distillation. In the method here described the residues are washed with methylated spirits. The methylated spirits-bromoform mixture so formed is run into water contained in a separating funnel where the methylated spirits is dissolved in the water and the insoluble bromoform settles to the bottom of the funnel, whence it is run off into a beaker. In order to remove the last traces of water from the bromoform the beaker is kept for a few hours in a desiccator.

The method was first brought to the notice of the writer by Dr. T. Sutton Bowman before his departure for India in October last, and has since been used in the Geology Department of the Imperial College of Science and Technology, where tests have demonstrated the ease with which the bulk of the bromoform can be recovered in this way. The loss of the comparatively cheap methylated spirits is more than compensated by the recovery of the more expensive bromoform.

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