

II.—MINERALOGICAL SOCIETY.

March 15, 1910.—Professor W. J. Lewis, F.R.S., in the Chair.

G. W. Grabham: A new form of Petrological Microscope, with notes on the illumination of microscopic objects. The new instrument, which is of the 'Dick' or 'English' pattern, has a focussing sub-stage carrying a series of condensers mounted on a triple nose-piece, each capable of being inserted in the axis of the instrument. A new explanation was given of the 'Becke' or bright-line effect, especially applicable to parallel polarized light traversing mineral sections which meet along inclined junctions.—W. F. P. McLintock: On Datolite from the Lizard District. Datolite, which is associated with calcite, chalcopyrite, and natrolite (rare) in veins and geodes at the junction of the serpentine and hornblende schist, Parc Bean Cove, Mullion, Lizard District, Cornwall, occurs in crystals measuring up to 2 cm. along the *b* axis, and displayed fourteen forms, of which two were new. An analysis gave  $\text{SiO}_2$  37.45,  $\text{CaO}$  34.67,  $\text{Fe}_2\text{O}_3$  and  $\text{Al}_2\text{O}_3$  0.57,  $\text{B}_2\text{O}_3$  21.87,  $\text{H}_2\text{O}$  5.67; total 100.23.—Arthur Russell: Additional notes on the occurrence of Zoolites in Cornwall and Devon. The occurrence of heulandite, a mineral hitherto not recorded from Cornwall, at Carrick Du Mine, St. Ives, Cornwall, was described; also of chabazite and heulandite at the Ramsley Mine, South Tawton, Devon.—Dr. J. W. Evans: A modification of Stereographic Projection. Faces below the plane of projection are represented by the same points as parallel faces above it, upper faces being distinguished by a plus and lower faces by a minus sign.—Dr. J. W. Evans: Axes of Rotatory Symmetry. Coincidence is complete or codirectional when equivalent lines and their directions coincide, incomplete or contradirectional when equivalent lines coincide, but equivalent directions of uniterminal lines are opposed; in both cases it is colinear. If a minimum rotation of  $\frac{2\pi}{n}$  result in codirectional, contradirectional, or colinear coincidence, the axis of rotation has codirectional, contradirectional, or colinear symmetry, with cyclic number *n*.—Professor H. L. Bowman exhibited models illustrating space-lattices and Sohncke's point-systems.

CORRESPONDENCE.

THE USE OF THE TERMS 'LATERITE' AND 'BAUXITE'.

SIR,—Mr. Scrivenor's further remarks on this subject in the March number of the GEOLOGICAL MAGAZINE, replying to mine in the number for November last, bring into sharp relief some of the difficulties which he and others experience with regard to the recognition and use of 'laterite' as a scientific term. I for one am not unaware of these difficulties. Indeed, I perceive one or two which are in my opinion more serious than those mentioned by Mr. Scrivenor. At the same time, all these difficulties taken together are small compared with those which prevent us from adopting the use of the mineralogical term 'bauxite' as a rock name. Furthermore, surely the fact that some engineers—and, alas! some others—have abused the term laterite,

is not a sound reason why geologists should relinquish their use of it in a scientific sense, especially when, as I pointed out in my previous letter, such a use can be shown to be quite consistent with the original meaning of the term.

Mr. Scrivenor now admits the inaccuracy involved in the unrestricted use of the term laterite for ferruginous surface products. He seems not to be aware, however, that his proposal to extend the use of the term bauxite is equally objectionable. His only remedy for the abuse of the word laterite is a still further abuse of the word bauxite, a course of procedure in which I confess inability to see any wisdom at all, practical or otherwise. Unfortunately, the term bauxite has been so carelessly used by most writers, that there is some degree of plausibility in his suggestion.

Now I fully admit that bauxite is a mineralogical uncertainty; and that there may not be a definite mineral corresponding in composition to the formula  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ , which has always been attributed to bauxite by mineralogists; but until this possible fact has been definitely established and accepted by mineralogists, it seems to me that bauxite must remain a mineralogical name which cannot be applied indiscriminately by scientific workers to lateritic weathering products.

Is Mr. Scrivenor aware of the fact that the use of the term bauxite in a petrographical sense, for a mixture of hydrated oxides and other substances, would invalidate its use as a simple mineral name? If so, dare he assert, in view of the proved existence of xanthosiderite ( $\text{Fe}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ ), that its aluminium analogue, the bauxite of mineralogy, does not exist? If not, what name does he propose to give to the possible  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$  of mineralogy?

If it be ultimately proved that the mineral bauxite ( $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ ) does not exist, and that the material which has hitherto been regarded as such is really and always a mixture of gibbsite ( $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ ) and diaspore ( $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$ ), it will then be necessary for mineralogists to abandon bauxite as a simple mineral name; and in that event it will possibly be available for petrographical use. If on the other hand, as is more likely to be the case, mineralogists decide that there is a definite mineral corresponding in composition to the formula  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ , then the name bauxite will unquestionably belong to this substance, and this alone, in scientific nomenclature; that is, if Mr. Scrivenor and others fail, as I hope they will, in their efforts to degrade the word bauxite completely. This issue would more than ever leave a large and important function for the word laterite as a petrographical term. It is this scientific necessity of making provision for  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ , the bauxite of mineralogy, which makes Mr. Scrivenor's suggestion positively harmful, and puts an insuperable difficulty in the way of its adoption by geologists.

Anent the rather misleading statement by Mr. Scrivenor, that "in other countries the original definition [of laterite] has been abandoned", I can only repeat the fact that the authorities of the present generation who have gone seriously into the study of laterite are at one as regards the scientific meaning to be attached to the term. The French and German schools from their study of African

deposits, and most important of all the officials of the Geological Survey of India who have to deal with the type occurrences, are all agreed as to the desirability of retaining the use of the term 'laterite' in much the same sense as I have defined it. The only culprits appear to be those who have either ignored the drift of recent tendencies in this matter, or who have preferred to attach more importance to the vulgar than to the scientific use of the term.

In conclusion, I fail to see any good reason why both laterite and bauxite should not be regarded as very useful scientific terms, the former more particularly for petrographical, the latter for mineralogical purposes.

T. CROOK.

SCIENTIFIC DEPARTMENT, IMPERIAL INSTITUTE, S.W.

GEOLOGY OF BODMIN AND ST. AUSTELL.—In our review of the Geological Survey Memoir on this district (*GEOL. MAG.*, February, p. 85) we called attention to the omission from certain portions of the work of the initials of the responsible author. We are informed by Mr. D. A. MacAlister that the contributions made by the several authors to the pages of the Memoir are as follows:—

- BARROW, G.: pp. 12, 27-8, 29-31, 32, 40-4, 63-4, 73-6, 83-91, 119-20, 180-1.  
 FLETT, J. S.: pp. 44-53, 56-61, 65-8, 76-9, 93-104, 117, 8.  
 MACALISTER, D. A.: pp. 54-6, 61-3, 64-5, 72-3, 91-3, 105-9, 111, 7, 131-69, 170-6, 179, 181.  
 USSHER, W. A. E.: pp. 1-40, 44, 68-72, 80-3, 109-11, 120-30, 176-8, 179-80, 181.

#### OBITUARY.

#### CHARLES EDWARD FOX-STRANGWAYS, F.G.S.

BORN FEBRUARY 13, 1844.

DIED MARCH 5, 1910.

We have to deplore the death of Mr. C. Fox-Strangways at the age of 66. We give his name here as he wrote it, omitting the second initial.

He was born at Rewe, a village situated on the River Culm about  $4\frac{1}{2}$  miles north-east of Exeter. There his father, the Rev. Henry Fox-Strangways, a grandson of the first Earl of Ilchester, was Rector. Another relation, the Hon. William Thomas Horner Fox-Strangways, had become a member of the Geological Society in 1815, and had communicated papers to the Transactions of the Society on the geology of Russia, and of the neighbourhood of St. Petersburg in particular. He served on the Council of the Society in 1820-1, was elected a Fellow of the Royal Society in 1821, and eventually succeeded to the title as fourth Earl of Ilchester.

C. Fox-Strangways was educated at Eton, about the same time as his cousin, the late Sir Redvers Buller, and afterwards proceeded to the University of Göttingen, where among other subjects he studied mineralogy, chemistry, and physics. In 1866, when war was declared between Austria and Prussia, he assisted Sartorius von Waltershausen, the professor of geology and mineralogy, in burying his precious collection of minerals, so as to prevent it from falling into the hands of the belligerents. Soon after his return to England, Strangways