

only an increasing interest by the mining community in the geology of the Nigerian tinfields, but also, I hope, an increasing disposition to publish geological observations thereon. Major Williams, however, will agree that in view of local controversies it is important that facts and conclusions should be correctly stated and deduced, and I may therefore perhaps be allowed to make the following remarks upon his paper.

Major Williams makes no mention of the fact that I mapped and described in 1911, in my "Geology and Geography of Northern Nigeria", the younger riebeckite-granites of Ningi, Kila, and Fagam, with which a portion of his paper is concerned. Of the country between Buji and Ningi, I have little personal knowledge, but from what I have gathered in conversation with capable observers who have repeatedly traversed it, and from what I know of the adjoining parts of the tinfields, I feel sure that there are there not extensive outcrops of an older riebeckitic Sabon Garri granite, but a number of outcrops of younger riebeckite-granite projecting through older micaceous gneisses of various types. In spite of the assertion to the contrary in the appendix on p. 446, the petrographical descriptions do not confirm the hypothesis of an older series of intrusions "specially characterized by perthite, riebeckite, and ægirine". Of the sections quoted in support Nos. 106, 108, 110, C.C. 3, and C.C. 4 contain no perthite, riebeckite, or ægirine; No. 113 is valueless as evidence; No. 115 is said on one page to be "slightly crushed" and on another to show "no sign of crushing" and to belong "to the younger series", while Nos. 100 and 105 are simply sections of normal younger granite.

It would also be interesting to know how Major Williams arrives at his belief that the younger granites of Nigeria are of Mesozoic age. It may be on account of the relative freshness of their outcrops, as in the case of the Tertiary (?) gabbro dyke of Keffi Filani. In any case the distinction of Archæan and Mesozoic soda-granites in Nigeria cannot be considered established, while the generalization that "tin is only found in granites that contain riebeckite" is true only in the sense that tinstone is associated with the younger granites, which may or may not carry riebeckite.

J. D. FALCONER.

LONDON.

October 13, 1920.

OBITUARY.

Sven Leonhard Törnquist, Ph.D., F.M.G.S.

BORN MARCH 6, 1840.

DIED SEPTEMBER 6, 1920.

THE study of Graptolites has in the last few years suffered the loss of some of its veteran workers, and to the names of Hopkinson and Lapworth must now be added that of the Swedish geologist, S. L. Törnquist. Born at Uddevalla in 1840, he proceeded in due

course to the University of Lund, where Otto Torell was lecturing on geology, and in 1865 obtained the degree of Ph.D. on the strength of a paper on the Ordovician beds of Fågelsång. In 1867 he became reader at the secondary school of Gefle, and in 1882 was transferred to Lund, and at both places devoted his leisure to the study of the Ordovician and Silurian rocks in the neighbouring districts. In 1892 his careful researches on the organization of Graptolites by the method of grinding down specimens preserved in pyrites shed much light on the structure of these fossils. He was elected Foreign Correspondent of the Geological Society of London in 1893, and became a Foreign Member in 1900. The title of Professor was conferred on him in 1902, and in 1905 he resigned his teaching duties, but continued to reside in Lund till his death, which took place after a few days' illness. Up to the last he preserved his vigour of mind and body, and his kindly nature, ever ready to assist his fellow-workers with his wide experience and knowledge, endeared him to all his friends, while his numerous papers on the Lower Palæozoic beds and faunas of Dalecarlia and Scania form a valuable contribution to science.

James Somerville Geikie.

BORN 1881.

DIED 1920.

MR. J. S. GEIKIE, son of Professor James Geikie and nephew of Sir Archibald Geikie, died recently in Borneo from septic pneumonia, at the early age of 39. As the inheritor of a good share of the ability of his family, he gave promise of a highly successful career as a mining engineer, having already carried out technical work of much importance at the Bau gold-mine in Sarawak and elsewhere. His greatest interest, however, was in geology, in which science he gave promise of excellent future work. His loss will be sincerely mourned by many to whom he had endeared himself by the simplicity and strength of a fine character.

Charles Clifton Moore, F.I.C.

BORN 1862.

DIED 1920.

MR. C. C. MOORE, who died on August 11 last, was well known in both scientific and commercial circles in Lancashire and Cheshire. He was for some time engaged in chemical work at St. Helens, and for thirteen years with Brunner, Mond & Co., Ltd. Afterwards he founded the important firm of Charles Moore & Co., Ltd., chemical manufacturers. In spite of a busy commercial life, he was always much interested in geology, and was President of the Liverpool Geological Society. His published papers, in the *Proceedings* of that Society, chiefly dealt with the volume-relations of rocks, and comprise many very complete analyses of rocks. As a man of wide knowledge and genial disposition he will be much missed by those who enjoyed his acquaintance.