

and oriented parallel to the banding. The slight amount of rotation of crystals possible in the compacted part of the mesh would not be sufficient to orient them in any particular way. The action would, as a whole, give rise to bands showing flow-structure, therefore, and exhibiting the moderate contrast between bands that is normal in banded gabbro. The occasional ultra-basic bands of extreme contrast could also be developed as a further result, for in the larger lenses of liquid crystal sorting would occur under conditions particularly favourable to the production of monomineralic types.

Though apparently not himself a strong advocate of crystallization differentiation, Mr. Read appears to have some apprehension that the credit for originating certain ideas in that connexion might leak out of the Tight Little Island. He therefore points out that Darwin postulated crystal-settling seventy years ago, and in two places that Barrow postulated mechanical straining thirty years ago. Though Darwin needs no eulogy of mine or Mr. Read's, I too have pointed out Darwin's origination of the idea of crystal-settling,¹ and though I have not referred directly to Barrow's work, I have referred to Harker's discussion of it and similar work.² If I may be permitted, I would like to point out to Mr. Read that the assumption of immiscibility also dates back to Darwin's time, and that it is still an assumption—a sylph, if he prefers the term.

N. L. BOWEN.

KINGSTON, CANADA.

February 27, 1920

OBITUARY.

Robert Etheridge (1847-1920).

MR. ROBERT ETHERIDGE, the son of the distinguished geologist and palæontologist of that name, died after a short attack of pneumonia at Colo Vale, near Sydney, on January 4, in his 74th year. Etheridge early took up geological work in Australia, as a member of the first Geological Survey of Victoria, under the direction of A. R. C. Selwyn, in the middle sixties. The survey having been disbanded as the result of a political crisis, young Etheridge returned home and was appointed palæontologist to the Geological Survey of Scotland, his father being then palæontologist to the English Survey. When the natural history collections of the nation were removed from Bloomsbury to the new Natural History Museum in the Cromwell Road, the two Etheridges were brought on to the staff of the Geological Department, where the memory still remains of the vigorous actions and language of "R. E. junior". The chief piece of palæontological work accomplished by Etheridge while in this

¹ N. L. Bowen, "Crystallization Differentiation in Silicate Liquids": *Am. Journ. Sci.*, vol. xxxix, 1915, p. 175.

² "Later Stages of the Evolution of the Igneous Rocks": *Journ. Geol.*, Suppl. to vol. xxiii, 1915, p. 14.

position was the valuable Catalogue of the Blastoidea, in which he had the co-operation of P. Herbert Carpenter.

Australia, however, was never far from the thoughts of Etheridge. He compiled a useful bibliography of Australian Geology, and studied fossils sent to him from Queensland by his former Edinburgh colleague, Mr. R. Logan Jack. This eventually resulted in a large work by the two friends on *The Geology and Palæontology of Queensland and New Guinea* (1892). Meanwhile, in 1887, Etheridge returned to Australia as palæontologist to the Geological Survey of New South Wales and to the Australian Museum, Sydney. Here he strenuously worked for the remaining thirty-three years of his life, becoming Director of the Museum in 1895. At the Mines Department he laid the foundation of what is now a fine library, he started the well-known "Records of the Geological Survey", and he published from time to time important memoirs on the fossils of the older rocks. Produced without the facilities enjoyed by palæontologists at home, these writings were warmly welcomed by them, and "it is not too much to say", writes Professor Edgeworth David, "that the classification and correlation of the coalfields, goldfields, artesian water-basins, oilfields, and other mineral deposits of the Commonwealth are based essentially on the work of Mr. Etheridge." At the Australian Museum Etheridge threw himself with his wonted vigour into the arrangement and display of the collections, and introduced the descriptive labelling initiated in the Natural History Departments of the British Museum. He founded the "Records of the Australian Museum", and under his guidance numerous memoirs on the fauna of the continent were published. He also extended the educational services of the museum by popular science lectures and demonstrations to visitors. In this position he was led, as so many others, away from his own science to follow the insistent call of ethnology. Through his efforts a fine series of ethnological exhibits from the Pacific Islands was accumulated, and a magnificent display of native work was installed in the museum galleries.

Etheridge received the Clarke Memorial Medal from the Royal Society of New South Wales in 1895, and the Mueller Memorial Medal from the Australian Association for the Advancement of Science in 1911. His remoteness from the Mother Country and his objection to advertisement were probably the reasons why similar honours were not conferred upon him by Metropolitan societies. The award of the Wollaston Fund by the Council of the Geological Society in 1877 is all that we can trace. His name, however, is widely known, not from the various fossils that have been named after him, but from the Antarctic glacier, the lofty peak on the Kosciusko Plateau, and the Etheridge goldfield in North Queensland. His colleagues will cherish his memory as that of a sound and untiring worker, and a man always ready to help his fellows.¹

¹ See additional paragraph on p. 194 written by Mr. R. Bullen Newton.