

Professor E. H. L. Schwarz.

Ernest Hubert Lewis Schwarz was born in London and educated at Westminster. He went out to South Africa about 1895 and spent a year at Johannesburg as editor of the *Scientific African*. In 1896 he began a period of service on the Geological Commission of the Cape of Good Hope on its formation under Dr. A. W. Rogers. This lasted ten years, and was productive of a large amount of very useful work, especially on the geology of the Cape System and older rocks in the southern and western parts of Cape Colony, as well as important contributions to the elucidation of the Cretaceous and Tertiary of the eastern part of the same colony. In 1905 Schwarz was appointed to the chair of geology at the Rhodes University College, Grahamstown, a post which he continued to hold till the time of his death. He published two small books; one a most useful summary of South African geology, the other entitled *Causal Geology*, which contained much bold and probably unfounded speculation. His later years were largely occupied by a great scheme for reclaiming part of the Kalahari region and increasing the rainfall of South Africa generally by diverting southwards some of the headwaters of the Zambesi, which he believed to have originally run in that direction, but to have undergone capture.

Schwarz was a man of much originality, and some of his ideas, though geologically very unorthodox, were at least stimulating.

CORRESPONDENCE.
PSEUDOTACHYLITE.

SIR,—It is well established that glassy films and veins of pseudotachylyte and “flinty crush rock” are not igneous intrusions, but result from the mechanical shearing of solid rock, and that the liquid thus produced may be injected away from its source of origin (see Clough, Maufe, and Bailey, *Q.J.G.S.*, 1909, pp. 611–78, and Shand, *Q.J.G.S.*, 1927, pp. 198–221). The conclusion has been drawn that at the surfaces of movement the temperature has been raised sufficiently to melt the rock. The main difficulty lies in the unlikelihood of the generation by friction of enough heat to fuse minerals like quartz and felspar, and this finds support in that the effects of high temperature are conspicuously wanting in the majority of those occurrences which have been described—the pseudotachylytes exhibit devitrification rather than normal crystallization.

A clue to the origin of these puzzling rocks may perhaps be found in the work of the late Sir George Beilby (*Aggregation and Flow of Solids*, Macmillan, 1921). Beilby associates the properties of “cold-worked” metals with the production at the planes of movement of a vitreous modification—i.e. liquefaction may be induced by

shearing stress at temperatures far below the normal fusion point. Some significant experiments were made on minerals in illustration of this. It was demonstrated that when calcite is lightly stroked with chamois leather a film of calcium carbonate glass is formed, and even a quartz surface may be liquefied at ordinary temperatures by rouge polishing. Beilby concludes that in solid flow a glass results wherever differential movement occurs.

Thus the production of rock glass in zones of severe shearing at temperatures far below the fusion points of the vitrified minerals is to be expected, and the descriptions given of many occurrences of pseudotachylite are in harmony with this mode of origin. With regard to the dispersion of the glass from its place of origin, it may be noted that under pressure glass will flow at temperatures well below the fusion points of the common rock-forming minerals, and a moderate increase of temperature due either to the friction or to a regional rise in temperature would make injection possible.

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ANNOUNCEMENTS AND INQUIRIES.

PEACH AND HORNE MEMORIAL.—A project to perpetuate the memory of the late Drs. Peach and Horne has recently been inaugurated in Edinburgh. Benjamin Neeve Peach, LL.D., F.R.S., died in January, 1926, and his life-long friend and fellow-worker, John Horne, LL.D., F.R.S., followed him in May, 1928. In response to a widely expressed desire that the eminent services rendered to geology by these two distinguished scientists should be recognized in some appropriate form, a representative meeting was convened and has now decided to take steps to raise a joint memorial. The committee includes delegates from the Geological Survey of Great Britain, the Royal Scottish Museum, the Geological Departments of the Scottish Universities, and the following scientific societies with which Drs. Peach and Horne were most closely identified: Royal Society of Edinburgh, Royal Scottish Geographical Society, Royal Physical Society of Edinburgh, and the Geological Societies of Edinburgh and of Glasgow.

The committee proposes, with the concurrence of the authorities concerned, that the memorial take the form of a bronze plaque to be placed in a suitable position in the Royal Scottish Museum, Edinburgh, and of a commemorative inscription upon some conspicuous rock-face or boulder at one of the classical geological localities in the North-West Highlands. A fund has been opened to defray expenses and the committee has appointed Mr. M. Macgregor, Southpark, 19 Grange Terrace, Edinburgh, to receive and acknowledge all contributions.