These cleavage and other lines are still more clearly marked near to the margin, are eroded into and charged with decomposition-products, mainly scales of gibbsite, but with some opaque white and dust-like substances. As the junction is approached the larger felspar prisms and the aggregates of smaller ones gradually break up into small granular non-striated fragments lying in and surrounded by aggregates of scales of gibbsite, interspersed with more or less opaque dust-like substances. Many of the granules are eroded, and their contours remind one of those of sugar crystals dissolving in water. Here and there in the larger plates of felspar aggregates of scales of gibbsite form inlets.

The pyroxene masses in places are changed into aggregates of 'viridite' or of chlorite, but more often the cleavages of otherwise apparently unaltered augite are lined and filled with limonite. Nearer to the margin of the diabase this latter condition steadily increases until close to the contact of the rock and the laterite the masses of augite are changed into reticulations of limonitic products with small unaltered fragments of pyroxene.

Where the rock is actually changing to laterite, all the masses of its augite are altered into reticulations of limonitic oxides of iron with few remnants of more or less unchanged pyroxene, and with relatively few minute aggregates of scales of gibbsite and of dust-like opaque products.

The final change in the slices examined from felspars somewhat corroded to aggregates of gibbsite in parts of them occupied a breadth of less than ·2 of one millimetre, whilst in places, especially where the felspar lies in aggregates of small prisms, the change must be described as abrupt.

The distance between the apparently unaltered diabase and the lateritic aggregate of limonite and gibbsite with few minute fragments of unchanged felspar, some minute granules of secondary quartz, and grains of ilmenite varies in the specimens examined from 1·6 millimetres as a minimum to 3·9 millimetres, or to about one-seventh of an inch, as a maximum. Thus the actual change is mainly, although not entirely, a surface one, the alteration noticed along the cleavage and other lines in the inner parts of the diabase being of very subordinate importance to the superficial ones.

J. B. Harrison.

Science and Agriculture Department,
Georgetown, Demerara,
August 19, 1911.

OBITUARY.

SAMUEL CALVIN, M.A., LL.D.

Born February 2, 1840. Died April 17, 1911.

Samuel Calvin was born in Wigtonshire, Scotland, on February 2, 1840. He went with his parents to America when he was 11 years of age, and received his education at Lenox College, Iowa. When he was 24 years old he enlisted in the Army and served for a few months in the Civil War. He then became a teacher of science in

Lenox College, and afterwards principal of a ward school at Dubuque. In 1874 he was elected to a professorship of natural science in the University of Iowa. Here, at first, he had charge of botany, zoology, geology, and physiology. Later he was made professor of geology, a position which he filled with distinction until his death. He received from Cornell College the degrees of M.A. and LL.D., and from Lenox College the degree of Ph.D.

In 1892 Dr. Calvin was elected State Geologist of Iowa. This position he resigned in 1904 owing to the stress of other duties. However, in 1906, upon the resignation of Professor Wilder, he was again elected State Geologist, and continued to serve until his death. The Iowa Geological Survey under his directorship published about twenty volumes of reports dealing with the geology and mineral resources of the State. Of great scientific value have been his own contributions to the geology of Iowa, especially those papers which have added to our knowledge of the Pleistocene. His most recent scientific publications, which deal with the Aftonian mammalian fauna, have done much to unravel some of the difficult problems of Pleistocene palæontology. In all his scientific work he was thorough, no details were considered trivial; his one desire was to discover truth—to find any facts which could make knowledge clearer, broader, more definite. That he had the power to clothe his thoughts in beautiful language is clearly shown in all his writings.[1]

GEORGE F. KAY.

STATE UNIVERSITY OF IOWA.

JOHN ROBERT MORTIMER.

BORN 1825. DIED 1911.

BY the death of John Robert Mortimer the geologists of East Yorkshire lose one of the few remaining members of their 'old guard'. Though the chief scientific work of his life was done in the domain of archæology, culminating five years ago in the publication of his great work entitled *Forty Years Researches in British and Saxon Burial Mounds of East Yorkshire*, Mr. Mortimer likewise rendered notable service to geology by his writings and, above all, by bringing together the unrivalled collection of fossils from the Chalk of the Yorkshire Wolds, now housed in the private museum that he built at Driffield.

Mortimer was born in the Wold village of Fimber, and dwelt there until manhood, when he shifted his residence to Driffield, a few miles distant, where the rest of his life was spent, and where he died, on August 19 last, at the ripe age of 86 years. When a child he was of delicate health; indeed, throughout life his health was never robust, but he was endowed with a tough vitality, mental energy, and an indomitable spirit which carried him through many troubles and remained with him up to the last. So lately as the present year he sent a paper to be read at the British Association meeting at Portsmouth, on "The Stature, etc., of our Ancestors in East Yorkshire". His business of corn merchant and maltster brought him in contact with

[1] Abridged from *Science*, N.S., xxxiv, p. 107. We are indebted to Mr. G. P. Merrill for a copy of this memoir.