

In the whole of this region, the only post-Primary rocks met with, other than those of comparatively modern alluvial origin, were chocolate-coloured shales (Buta Shales) and sandstone, and an oolitic limestone, on the extreme west.

From the Lipodongu Falls on the Rubi, and thence through Poko to Rungu, on the Bomokandi River, none but granitic rocks (gneisses) were observed. Along the Uelle, from Bima to Bomokandi, the same rocks were seen.

In the centre of the region mica-schists, quartzites, and similar metamorphic rocks replace the granite wholly or in part. A noticeable feature here is the presence of a range of isolated hills, composed almost completely of great beds of magnetite and hæmatite occurring in the schistose series.

In the south-eastern portion of the region visited, between the Uelle-Kimbali and Bomokandi Rivers, a great plutonic massif is laid bare in the mountainous district of Arebi.

From the presence of iron-ore and schists at Mount Tena on the south-west and analogous rocks at Mount Gaïma on the north-west side of the massif, and from the fact that the dip is in each case strongly away from the intervening country, it is suggested that these rocks have been uplifted and tilted by the plutonic complex, and that the beds of Mount Tena and Mount Gaïma are identical in age.

The plutonic massif itself contains microclitic gneiss and abundant diabasic rocks, and the same rocks in all stages of dynamo-metamorphism.

On the boundary between the Congo State and the Bahr-el-Ghazel, several hills made up of rocks of coarse gneissose and schistose character are described; some of these rocks are rich in tourmaline, kyanite, and garnet in large crystals.

From the region of the Enclave de Lado and the western side of the Nile between Lado and Dufile, mica-schists, quartzites, and microcline-gneisses are described.

The alluvium of a large part of the Uelle is covered, on the higher ground, by a deposit of limonitic conglomerate; in places this may be due to the decomposition *in situ* of the alluvium, but in the neighbourhood of the iron mountains a sort of passage may be seen between a conglomerate of fresh iron-ores and the more general type of limonitic conglomerate (laterite?).

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## CORRESPONDENCE.

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### THE DISCOVERY OF THE SOUTH-EASTERN COALFIELD.

SIR,—In the last edition of "The Coalfields of Great Britain" Professor Hull gives an account of the discovery of the above coalfield which cannot, in the interests of fairness and truth, be allowed to pass current without correction.

"The credit," he writes (p. 282), "of experimentally demonstrating the existence of coal-seams below the Chalk is due to Mr. Francis

Brady, Engineer of the Channel Tunnel, under the advice of Professor Boyd Dawkins, F.R.S., and an experimental boring was commenced in a position at the foot of Shakespeare's Cliff, near Dover, in 1895-6."

It would be difficult to compress more errors into one sentence than are in the above quotation. The only statement which is true relates to the place of the boring. The credit of experimentally proving the existence of the coalfield is not due to Mr. Francis Brady, but to Sir Edward Watkin, Chairman both of the South-Eastern Railway and of the Channel Tunnel Company, who acted under my advice, and sent on to me all reports connected with the boring. Mr. Brady was simply engineer in charge of the borehole, and acted under Sir Edward Watkin's instructions. I never had occasion to advise Mr. Brady. Nor was the boring "commenced in 1895-6." It was begun in 1886, and from that time down to the discovery of the Coal-measures in 1890, the work of identifying the specimens and fixing the horizons of the strata penetrated—or, in other words, all the geology—fell to me. The last of a long series of reports to Sir Edward Watkin is dated July 8th, 1891.

All this is ancient history. The progress of the boring was recorded by me, from time to time, in the Reports of the British Association (1887, 1890, 1899), and in the publications of the Royal Institution (June 6th, 1890) and of the Manchester Geological Society (1890-3-4-7). They also were communicated to the public at large in *The Contemporary Review* (April, 1890), in *Nature* (March 6th, 1890), *The Colliery Guardian*, and *The Iron and Coal Trade Review*. Nor is the attribution of the credit to the wrong man new. An attempt was exposed as far back as 1897, after a full debate before the Manchester Geological Society, in which Sir Edward Watkin's claim was amply vindicated. Still later the history of the discovery was dealt with in my statement on the Buried Coalfields of Southern England, prepared at the request of the Royal Commission of Coal Supplies in 1903 (Final Report, pt. x, p. 28).

It is not, therefore, from lack of sources of information that Professor Hull has written the above paragraph in a work which professes to give the last word on British coalfields. I write this in justice to the memory of an old friend, who proved the truth of Godwin-Austen's theory by practical experiment, the first of a series which is likely to yield, in the future in Kent, important economic results, similar to those brought about in the past by similar borings in Northern France and Belgium.

W. BOYD DAWKINS.

MANCHESTER.

May 5th, 1905.

#### MOUNTAIN-BUILDING.

SIR,—The theory that mountainous areas have been produced by lateral thrust crushing and compressing large areas of country is, I think, now generally accepted; for it has been proved that such mountainous regions as have been carefully surveyed are found to