

CORRESPONDENCE.

THE PERMIAN IN THE MIDLANDS.

SIR,—Some thirty years ago when I was working in the new Red Rocks of the Birmingham district, I found that the Bunter Conglomerate invariably rested upon a Breccia with a slight unconformity. I pointed this out to the late Mr. Joseph Landon, who also found the same succession at Barr Beacon. Associated with the Breccia were deposits of sandy grit, the formation being of varying thickness. I also found—what was of much greater importance—that there was a very pronounced unconformity between them and the red clays and sandstones upon which they rested.

On April 12, 1890, I read a paper to the Vesey Club at Sutton Coldfield giving full particulars of this formation, which had never been separately marked on the Survey map, nor mentioned in the Survey memoirs, although its outcrop covered a very considerable area. At that time the red clays which cap the Carboniferous system in this district were mapped as Permian, which accounts for my reference to the breccia beds as a deposit between the "Permian" and the Bunter pebble beds. It is now, I believe, pretty generally recognized that these red clays belong to the Carboniferous system. If this be so, it gives a greatly added interest to these intermediate beds, and it comes to be a question whether they are not really the representatives of the Permian system in this district.

I was called away from the Midlands shortly after reading my paper, and have since been unable to follow up my investigations. Fortunately, however, this district has been recently re-mapped by the Geological Survey, and I had the pleasure of hearing a paper read by Mr. Cunnington at the Vesey Club in 1914, in which he confirmed my work and stated that he had found the beds in some places to reach 100 feet in thickness.

I believe the Survey are proposing to extend their researches, but my chief reason in writing this is to point out that much can be done by local geologists in carrying out a more detailed investigation in regard to these beds.

A few points I would suggest are:—

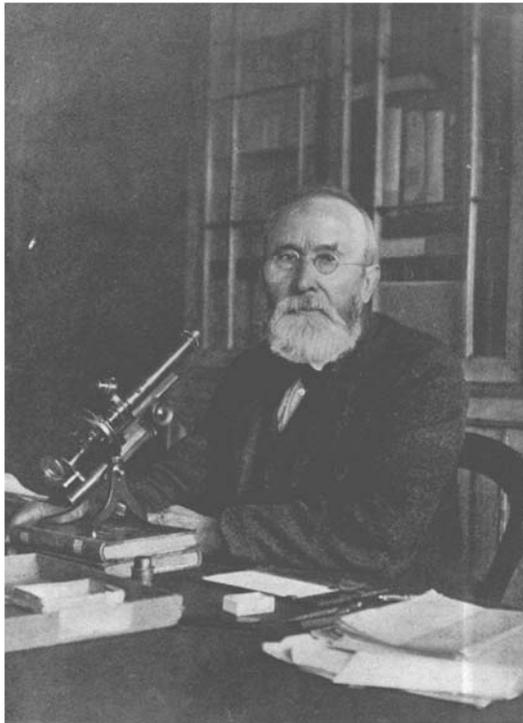
- (1) Through how wide an area are they found beneath the Pebble beds?
- (2) What is their thickness and constitution in different districts?
- (3) Is the breccia constant in its composition?
- (4) Are these beds the equivalent of the typical Permian breccias in other places, and are they on the same horizon?
- (5) The upper part of the deposit in the Sutton Coldfield district is pure breccia, the grits being beneath the breccia, and the unconformity with the Pebble beds is slight. Is this the rule elsewhere?
- (6) Can any light be thrown upon the source of the breccia?

And more important than all:—

- (7) Do the grits contain any fossils, and what is their age?

In this way much may be done to supplement the work of the Survey, which is naturally of a more general character.

A splendid section, showing the junction of the Breccia and the Bunter pebble beds can be seen at the Black Pool Quarry at Sutton Coldfield, at the base of which at least a quarter of an acre of the



George J. Hinde.

rolling surface of the Breccia, from which the Pebble beds have been removed for road metalling, can be seen.

My personal belief is that the red clays are Carboniferous, and the breccia bed Permian.

C. J. GILBERT.

“STAGHURST,” BERKHAMSTED.

March 21, 1918.

A NOTE ON ISOSTASY.

SIR,—I am much indebted to Mr. Anderson for calling attention to the oversight in my calculation. His re-calculation is perfectly right. Consequently, instead of 1,100 feet as the possible thickness of sediment accumulated in a sea of 100 fathom depth, we have 1,872 feet; or in the improbable case of a density as low as 2·7 for the supporting column, as much as 3,000 feet. These figures are still far removed from those great thicknesses of shallow-water deposit for which isostasy has been claimed as an adequate explanation.

A. MORLEY DAVIES.

IMPERIAL COLLEGE, S.W. 7.

April 13, 1918.

OBITUARY.

GEORGE JENNINGS HINDE,

PH.D. (MUNICH), F.R.S., F.G.S., V.P. PAL. Soc.

BORN MARCH 24, 1839.

DIED MARCH 18, 1918.

(WITH A PORTRAIT, PLATE X.)

As a worker gleans in a cornfield after the crop has been harvested, I have endeavoured to collect some records of my friend George Hinde, whose life's work terminated in March last. He was a Norwich boy, like myself, and went to the Grammar School there, but being my junior by seven years we never met until many years later, our paths in early life lying wide apart.

George Hinde was the third son of Ephraim Hinde and grandson of the founder of the firm of Ephraim Hinde & Son, Paramatta manufacturers in that city. His father lived near his Norwich factory, but in 1847 bought a farm at Catton, where he and his family resided. George's mother died when he was 13 years old, and at 16 his father sent him to learn farming in Suffolk with a Mr. Spelman, where, being a studious lad, he spent his leisure hours in acquiring Latin, French, algebra, physics, and chemistry. About this time he heard a lecture by the Rev. Mr. Blowers on “Hugh Miller”, which greatly interested him, and he bought and read Hugh Miller's books, and thus his mind was first directed to the study of geology.

When 18 years of age he commenced to farm his own land at Bawburgh, near Costessy, Norwich. Early in 1862 he attended a series of lectures in Norwich by William Pengelly, F.R.S.; these further stimulated his desire to take up geology, which later on became the leading ambition of his life. In the same year he paid