

resting upon limestone was exposed. The 'till' reached a thickness of at least 40 feet in places, and rested upon a striated floor of limestone rock. The Boulder-clay is a tough reddish or bluish deposit, with streaks or patches of sand, sandy gravel, or sandy clay. The whole deposit is thickly studded with boulders, both large and small, most of which are finely polished, striated, and grooved. Limestone, gritstone, sandstone, and quartzite are the most common rocks, but toadstone and various greenstones and granites are by no means rare. On the last occasion on which we visited the quarry we found that the clay had been cleared off the limestone over a large area, exposing a floor finely striated, polished, and grooved over its whole extent. The striations run N. 20° W., indicating an ice-flow coinciding roughly in direction with the neighbouring Derwent Valley. Mr. Arnold-Bemrose and I have been at work for some years examining the numerous Boulder-clay deposits and erratics this ice-flow has left behind it at points higher up the valley than Crich, and we hope to be in a position to deal somewhat fully with the glaciation of North Derbyshire in the near future. The deposits formed by the ice which crossed the watershed into the Wye Valley near Buxton have already been traced over large areas south of the Trent. In these deposits the boulders are "such as would be brought down by glaciers descending the valleys of the Wye, Derwent, and other northerly and westerly tributaries of the Trent, debouching into and crossing the valley of the latter river."<sup>1</sup>

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## OBITUARY.

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### PROFESSOR HANS BRUNO GEINITZ.

BORN OCTOBER 16, 1814.

DIED JANUARY 23, 1900.

H. B. GEINITZ was born at Altenburg on October 16, 1814, and studied at the Universities of Berlin and Jena, taking the degree of Ph.D. in 1837, with a thesis on the *Muschelkalk* of Thuringia. He went to Dresden in 1838 to take part in the work of the Royal Technical High School, in which he became Professor of Mineralogy and Geognosy in 1850, maintaining his connection with that establishment until 1894. In 1857 he was made Director of the Royal Mineralogical and Geological Museum, which post he also held until 1894. His work related chiefly to Saxony, and to it we are specially indebted in regard to the palæontological relations of that kingdom, but it also extended over other parts of Europe. Amongst his more notable works are those on the Fossils of the Coal-measures of Saxony, on the Cretaceous Formations of Saxony, comparing them with those of England, on the Animal Remains of the Dyas, and on the *Elbthalegebirge* of Saxony, and these are the more valuable from being well illustrated. He was one of the editors of the "*Neues Jahrbuch für Mineralogie und Geologie*" from

<sup>1</sup> Q.J.G.S., 1886, p. 440.

1863 to 1879. Professor Hans Bruno Geinitz was elected a Foreign Member of the Geological Society of London in 1857, and was Murchison Medallist in 1878.

#### ALPHONSE MILNE - EDWARDS.

BORN OCTOBER 13, 1835.

DIED APRIL 21, 1900.

By the unexpected death of Milne-Edwards a gap has been created in the foremost ranks of noted palæontologists and zoologists that it will be hard to fill; indeed, so long has his familiar name been a household word with us that it is still impossible to realize our loss.

Sprung from English stock, being the grandson of Bryan Edwards, M.P., a West Indian planter who settled at Bruges, Alphonse Milne-Edwards, son of the celebrated Henri Milne Edwards (1800–1885), was born in Paris, 13th October, 1835, and in his career followed closely in his father's footsteps.

He took his degree of Doctor of Medicine in 1860 and of Science in 1861; became an Assistant Naturalist at the Muséum d'Histoire Naturelle in 1862; Assistant Professor at the École supérieure de Pharmacie in 1864, and Professor there in 1865; Assistant Professor of the Zoological Laboratory of the École des Hautes Études in 1869, and Director in 1880; he was also appointed Professor of Zoology at the Muséum d'Histoire Naturelle in 1876, and finally its Director in 1892. He was elected a member of the Academy of Science, Section Anatomy and Zoology, in 1879, and of the Academy of Medicine in 1885. He was elected a foreign member of the Zoological Society of London in 1876, and in 1882 a Foreign Correspondent of the Geological Society.

His earliest papers were physiological, but he next turned to the study of Crustacea, both recent and fossil, while in 1863 he published his first paper on fossil birds, entitled "Mémoire sur la distribution géologique des Oiseaux fossiles." Three years later the first part of his monumental work, "Recherches anatomiques et paléontologiques pour servir à l'histoire des Oiseaux fossiles de la France," was issued, a work which when completed in 1871 extended to two volumes of text and two of plates. In it he showed the possibility of forming a classification of birds by means of their "long bones." Concurrently there appeared (1866–73) his "Recherches sur la Faune ornithologique éteinte des Îles Mascareignes et de Madagascar."

While these are the more important of his palæontological works they by no means represent a tithe of his scientific writings. He was associated with his father in bringing out the "Recherches pour servir à l'histoire naturelle des Mammifères" (1868–74), and with Grandidier in the volumes (1878–81) on Birds in the latter's "Histoire physique, naturelle, et politique de Madagascar." He was also keenly interested in the question of the distribution of animal life at great depths in the ocean, and it was at his instance and under his superintendence that the submarine surveying vessels the "Travailleur" and "Talisman" were sent out by the French Government; his work receiving acknowledgement in 1884 in