

OBITUARY.

JOHN YOUNG, LL.D., F.G.S.

BORN 1823.

DIED MARCH 13, 1900.

JOHN YOUNG was born at Lennoxton, in the parish of Campsie, 1823. His father, Thomas Young, was employed in the wrightshop of Lennox Mill, the bleaching-field and calico-printing works of Dalglish, Falconer, & Co. When 10 years old he was taken from school to be a message-boy in the Bleachfield. This was before the employment of children was ameliorated and regulated by the Legislature; and then he was taken on in the Mill, where 16 hours a day (at sixpence a day and a penny an hour for overwork), whether in the hot or cold works (both extreme), were more than he could bear; and his mother took him away. Afterwards he was apprenticed for seven years to print-cutting.

He was in the employment of the firm for 26 years, until he went to live in Glasgow in 1859, but before then he utilized what little time his hard work allowed him for study, attending the Mechanics Institute and reading what books he could get to see on Geology, his favourite science, and becoming well known among geologists.

In 1855 the British Association met at Glasgow, under the presidency of the Duke of Argyll, and a collection of the rocks and fossils of the West of Scotland was to be an important feature at the meeting. Mr. Robert Dalglish, partner in the Bleachworks, etc., knew of John Young's geological taste and competence, and arranged to let his employé go to Glasgow to superintend and classify the collection. For five months he was engaged on this work, and was brought into contact with some of the leading geologists of the time. So thoroughly qualified was he for this task, that shortly afterwards the Senatus of Glasgow University offered him the position of Keeper of the Hunterian Museum. In 1859 he removed to Glasgow with his wife and young family, and entered on his new duties, living at the Old College in the High Street of Glasgow.

He successfully fulfilled an onerous duty when the College of Glasgow was removed from the High Street to Gilmorehill. He carefully packed and removed the thousands of specimens—pathological, physiological, and antiquarian—contained in the Hunterian Museum, arranging and classifying them in their new location, with the co-operation of his colleague, Professor John Young, M.D., the Head Keeper of the Museum.

The Campsie district in Stirlingshire, between Glasgow and Stirling, especially around Lennoxton, his birthplace (about seven miles north-east of Glasgow), had always attracted John Young; indeed, at an early period he studied its features and its geological structure assiduously and with success. He made himself acquainted with all the natural and artificial exposures of its rocks and strata, learning the mineralogical nature of the greenstones and ash-beds of the trap-formation, and the fossil contents of the sedimentary limestones, shales, and sandstones, some of which, equivalent to the "Califerous Sandstone Series," are intercalated with the trappean rocks.

From the Old Red Sandstone, lying below, he carefully noted the sequence of the several members of (1) the "Calcareous Sandstone Series," including the Ballagan Limestone Series and the Trap Series; and (2) the several members of the "Lower Limestone Series," belonging to the great Lower Carboniferous Formation, and equivalent in part to the Mountain Limestone of England. The successive members of this "Lower Limestone" group in ascending order and divisible by their constitution and their fossils, he defined as that of Mill Burn, of Balgrochen Burn, of Balglass Burn, of Craigen Glen, of the Main Limestone and Coal, of the Hosie Limestone, and of Corrie Burn. The Balquarhage Series, belonging to the "Upper Limestone," also occurs.

In the above-mentioned groups of strata there are several seams of coal, of not very good quality. There are some good cement-stones; and a large proportion of the Campsie shales contain useful ironstone. Others of them are good oil-shales, in which the crowded organisms, such as Entomostraca, have supplied, as he shows, the hydrocarbon. Marine shells are abundant in many of the strata, but in some limestones and shales they are wanting, only remains of plants, fishes, and Entomostraca remaining in evidence of what is regarded as estuarine conditions of these particular deposits. By further research John Young and his colleagues elucidated the relationship of these interesting strata of Campsie to those of other parts of Western Scotland and elsewhere. Faults, causing a displacement of the strata, were carefully observed by John Young in the Campsie valley (the greenstone dyke at Milton for instance), and the great Eddlewood fault in the Lanarkshire Coalfield.

The uppermost deposits in the region referred to belong to the Erratics of the Quaternary period, such as the boulder-till and the sands and gravels that were washed out of old moraines; and these have been cut into and variously modified by river-action since the last uprise of the country. Surface scratchings and other glacial markings are frequent. A striking monument to John Young's industry and acumen in glacial geology exists in the Hunterian Museum, where he accumulated and laid out carefully for inspection a well-selected and extensive series of boulders and striated stones (190 varieties) excavated from the local Boulder-till in digging the foundations of the noble University on the crown of Gilmore Hill. In the Museum there they now constitute a valued "memorial of the great variety of travelled rocks found on the site," as John Young intended (*Trans. Geol. Soc. Glasgow*, vol. iii, 1871, p. 304). Indeed, he showed that the hill itself comprises a characteristic succession of the Lower and Upper Limestone Series, mentioned above as having been elucidated by his researches at Campsie and elsewhere.

In collecting and determining the multitude of fossils from the Carboniferous strata, not only of the vicinity of Glasgow, but throughout the rich middle basin of Scotland, from the Firth of Clyde to the Firth of Forth, he greatly advanced his favourite science. He gained much experience in the discrimination of Lamellibranchiata and Brachiopoda, studying their shell-structure minutely under the microscope. Polyzoa were frequently described

by him, and he made a long list of Foraminifera from the shales and limestones. In particular, he published (1874) an account of the discovery of the interesting *Saccamina Carteri* in the "Lower Limestone" Series of the Lanarkshire Coalfield and elsewhere. Of the Entomostraca of his finding, many he submitted for examination to his friends J. W. Kirkby and T. R. Jones, and his name was frequently used by them in the nomenclature of genera and species. The last instance of this friendly co-operation is in the treatment of the unique specimen found by him long ago at Robroyston, near Glasgow, and determined by his two friends Rupert Jones and Henry Woodward to be a peculiar phyllopod or phyllocarid, with the appellation of *Chanocaris Youngii* (Monogr. Pal. Soc., 1899, p. 181, pl. xxii, figs. 1a-e). Directions for collecting and mounting microzoa from the Carboniferous strata of West Scotland were clearly given by John Young in the Trans. Geol. Soc. Glasgow, vol. ii (1867), p. 185.

His published papers are numerous (see the Royal Society's Catalogue of Scientific Papers) in the Transactions of the scientific societies of Glasgow and Edinburgh, the Annals of Natural History, the GEOLOGICAL MAGAZINE, and the Journal of the Geological Society. Many of them are joint papers, with his colleague John Young, M.D., Keeper of the Hunterian Museum, Robert Craig, James Armstrong, David Robertson, D. Corse Glen, and other Glasgow geologists. One of his last contributions in association with friends (Jones and Kirkby) appeared in the Trans. Edinburgh Geol. Soc., vol. vii (1899), treating of one of his favourite lines of research in the distribution of the Carboniferous Entomostraca, especially *Carbonia*.

The inestimable "Catalogue of the Western-Scottish Fossils," published in 1876 for the use of the British Association, bears much of the fruit of John Young's work, as indicated by Professor John Young, M.D., in his introductory and general notes in that volume. The lists of Ostracoda and Foraminifera were subsequently revised in the Trans. Geol. Soc. Glasgow, vol. ix (1891).

John Young was for many years an active member of the Glasgow Mechanics Institute, the Glasgow Geological Society, and an Associate of the Geological Society of Edinburgh; he was elected a Fellow of the Geological Society of London in 1874; and in 1883 was honoured with the award of the Murchison Donation Fund for his long-continued and successful researches in the fossil Polyzoa and in the shell-structures of other fossils. Lastly, the well-deserved Honorary Degree of LL.D. was conferred on him by the Glasgow University in April, 1893.

A man of conspicuous ability, fully appreciating the beauties of Nature and successfully elucidating some of her secrets, he had wonderful energy and perseverance. He was full of information, and willingly gave the benefit of it to all enquirers: indeed, he spread the knowledge of geology widely by his teachings in Glasgow and by his many communications to various journals. He was indeed one of the good old sort of North British naturalists and geologists, who are now unfortunately too rapidly diminishing in number.

T. R. J.