

PROFESSOR ROBERT HARKNESS, F.R.S., F.G.S.

BORN 28TH JULY, 1816. DIED 4TH OCTOBER, 1878.

(WITH A PORTRAIT.)¹

Those who have taken an active part in geological science during the last quarter of a century must have been profoundly impressed by the large number of notable geologists who have passed away within that period.

But the cause may readily be discerned when we remember that our science has only occupied a recognized position for about fifty years, and that the young men, who were then its most active promoters, have to a large extent fulfilled their allotted three-score years and ten within this period, affording ample testimony to the healthful nature of geological pursuits.

In a few instances, we have lost from our front ranks men whom we had hoped to see still in their accustomed places for years to come; but such special losses may have arisen from overwork hastened by organic disease; and it is to be feared that this was most probably the case with our late lamented friend Professor Harkness.

Born at Ormskirk, Lancashire, July 28th, 1816, Robert Harkness was sent at an early age to the High School, Dumfries, where under Dr. Duncan's care he received his primary education. Subsequently he entered the University of Edinburgh, and here he seems to have acquired his first love for geological science while attending the lectures of Professor Jamieson and Professor James D. Forbes. After the completion of his academic studies, he devoted himself entirely to his favourite pursuits of chemistry and geology.

Mr. Harkness's earliest researches seem to have been directed to the investigation of that most attractive field of study to geologists, the Carboniferous formation, his first paper being on "The Climate of the Coal Epoch," read before the Manchester Geological Society, in April, 1843.

It is interesting to read the views of Harkness in this paper, and to find them reiterated most remarkably by Professor T. Sterry Hunt, twenty-four years later.²

Mr. Harkness writes:—

"From the foregoing observations it is evident that from the first dawn of animal life, and probably also during the countless ages which preceded the creation of organized beings, till the period when terrestrial animals were first called into existence, the earth possessed a warmer and a much more equable climate than at the present time. This equable climate appears to have resulted

¹ For permission to reproduce this likeness of the late Prof. Harkness, the Editor is indebted to the kindness of the proprietors of *The Illustrated London News*.

² See "The Chemistry of the Primæval Earth," a lecture by Professor T. Sterry Hunt, F.R.S., F.G.S., *Geol. Mag.* 1867, Vol. IV. pp. 365-366.



Robert Harkness Esq., F.R.S., F.G.S.,

Late Professor of Geology, Queen's College, Cork.

from the great density of the atmosphere which then surrounded the globe; a density originating from the great quantity of carbonic acid gas diffused through the atmosphere, and destined to support that luxuriant vegetation which clothed the surface of the earth during the coal era, and which is now deposited amongst the strata which constitute the solid crust of the globe. This dense atmosphere, from its capacity for absorbing heat, prevented, during the period when the solar rays fall most obliquely on any part of the earth's surface, the dissipation of that heat acquired by the earth during the time when the sun's rays fall most directly, and consequently prevented the occurrence of that degree of cold which is so common to our present climate. By this means, most probably, have regions which are at present clothed with ice been rendered fit for the abode of plants, which indicate a tropical climate; and to this cause may be attributed that uniform temperature which existed during the earlier geological epochs, and which we are justified in supposing to have prevailed from the extensive geographical distribution of analogous forms of extinct vegetables."

In the same year (1843) Mr. Harkness communicated to the Geological Society of London a paper, "On Changes in the Temperature of the Earth, as a Mode of accounting for the Subsidence of the Ocean, and for the consequent Formation of Sea-beaches above its present Level." But it must not be supposed from this that Harkness was merely a theoretical geologist; on the contrary, it was, as his papers testify, in the field that he excelled. Even in these early years we find him in the Coal-measures exploring and demonstrating with Mr. Binney the connexion between Sigillarian stems and Stigmarian roots at St. Helen's; tracing reptilian footprints in the Bunter of Cheshire, and Dumfriesshire; working out the Silurians of Dumfriesshire and Kirkcudbrightshire, and describing fourteen species of Graptolites discovered by himself in a country hitherto very little explored, and where fossils were not known to exist.

It is not surprising to find him, when a candidate for the Chair of Geology in Queen's College, Cork, in 1853, supported by Prof. Jamieson, Lieut.-Col. Portlock, Professor James Nicol, Hugh E. Strickland, Sir H. T. de la Beche, Sir W. Jardine, Prof. Phillips, Prof. Williamson, J. Beete Jukes, and many others. He was appointed to succeed Professor Nicol in that year, but his duties in Queen's College did not deprive geology of his active labours in the field; he simply added new explorations to his former areas, and we find him at work, "On the Geology of the Dingle Promontory, Ireland"; "The Lignites of the Giant's Causeway"; "The Devonian Rocks around Cork"; "The Serpentine of Connemara"; "The Annelide Tracks of County Clare"; and many other subjects in connexion with Irish geology; "On the Silurian Rocks of Cumberland and Westmoreland"; "The Permians of the North-West of England"; but it was especially the geology of the Lake District latterly which engaged his attention.

About 1876 the syllabus for the Queen's Colleges in Ireland was

altered, and Prof. Harkness found himself no longer merely Professor of Geology, but required to lecture on Physical Geography, Geology, Mineralogy, Palæontology, Zoology, and Botany! He complied with the new regulations for 1877 and 1878, but he was overworking himself, and being warned by premonitory symptoms of heart disease, he resolved to resign his Chair at Cork, and rest quietly with his sister in Penrith, where for some years he had made his home. This he had done just previous to his last visit to Dublin in October which proved fatal.

One¹ who was intimately acquainted with Professor Harkness and his labours thus writes:—

“It is now some five-and-thirty years since the name of this able geologist first appeared as a writer on his favourite science. During this long period he had explored, on foot, the geology of large districts in the north of England, in Scotland, and in various parts of Ireland. The reports of the British Association and the Quarterly Journal of the Geological Society bear witness to his industry and to the painstaking minuteness of his method of investigation. To him we owe our earliest exact information regarding the correlatives of the reptiliferous sandstones of Dumfriesshire and Cumberland. It was his patient labours continued year after year over ground most difficult to unravel, that led the way to the working out of the structure of the Silurian uplands of the south of Scotland. To his research, too, is due the identification of the metamorphic rocks of the north-west of Ireland with those of the west of Scotland. To the elucidation of every one of the Palæozoic system of deposits he has contributed something of value.

“But important as was his scientific work, it had not a wider and more hearty recognition among his brother geologists than his own admirable qualities of head and heart. Who that has been privileged with his friendship will not cherish the memory of his earnestness over even the driest of details, his quiet enthusiasm, his generous admiration for the work of others, his unflinching cheerfulness? Who will forget that beaming ruddy face, never absent from the platform of Section C at the British Association meetings, always ready to rise among the speakers there and to reappear at the festive gatherings in the evening? There have been men who have graven their names more deeply on the registers of scientific thought and progress, but there have been few whose sunny nature has more endeared them in the recollection of their friends than Robert Harkness.”

Professor Harkness was the author of sixty-three papers, six of which were joint productions (1) with Mr. John Blyth, (1) with Edward W. Binney, F.R.S., (1) with Dr. Henry Hicks, (1) with Sir Roderick I. Murchison, (2) with Prof. H. Alleyne Nicholson. Eight of his papers have appeared in the pages of the *GEOLOGICAL MAGAZINE*, but they are for the most part in the Quarterly Journal of the Geological Society and the Reports of the British Association.

¹ Professor A. Geikie, F.R.S., “Nature,” Oct. 10, p. 628.