

## SIR RICHARD JOHN GRIFFITH, BART.,

LL.D., F.R.S.E., F.G.S., M.INST.C.E., M.R.I.A.

BORN 27 SEPTEMBER, 1784; DIED 22 SEPTEMBER, 1878.

**I**N the early days of the present century, Geology, like the "Dark Continent," was but little known, and every man was his own guide in the new science. Roads were few and imperfect, and guides were wanting; whilst barriers of ignorance and prejudice blocked the way at the very outset.

Now all is changed—the pioneers of our science have done their work grandly and well, and prejudice has given place to favour and public recognition. But by far the larger number of those grand original workers and thinkers, to whom we owe so much, have laid down their hammers and pens and have passed away.

To the names of William Smith, Greenough, MacCulloch, De la Beche, Scrope, Lyell, Sedgwick, Murchison, Phillips, must now be added that of the venerable Sir Richard Griffith.

Born in Hume Street, Dublin, on the 27th September, 1784, Richard Griffith was, at an early age, placed by his father in the best public school in that city, and later on, in 1797, he proceeded with his studies under the tuition of the Rev. Mr. Moore, of Donnybrook. As soon as the completion of his education permitted, he obtained a commission in the Irish Artillery; but when, after the Act of Union had passed, the Irish Artillery became merged in the British forces, his father conceived it to be more to his son's advantage that he should resign his commission and devote himself to Civil Engineering and Mining. In order to prosecute his studies more successfully, he visited Cornwall, where he had the good fortune to obtain an early reputation for acumen by discovering at the Dalcouth mine rich ores of nickel and cobalt, which had previously been rejected as of no value. Lord Dunstanville, the owner, was so delighted at the discovery, that he proposed to make Lieutenant Griffith general manager and superintendent, but he modestly declined, preferring to extend the range of his knowledge by a careful survey of the mining districts of Derbyshire, Yorkshire, and Northumberland. Thence he continued the pursuit of practical mining and surveying into Scotland, studying for a time in Edinburgh under such eminent men as Sir James Hall, Professors Playfair, Jameson, Hope, and others. Here his rising abilities were held in such high estimation, that, at the early age of 23, he was unanimously elected a Fellow of the Royal Society of Edinburgh. In 1808 he returned to Ireland, and commenced his professional career by the publication of a work, under the auspices of the Royal Dublin Society, entitled "Geological and Mineralogical Examination of the Leinster Coal-field," which was completed in 1814. In 1809, the Commission appointed to inquire into the practicability of draining and improving the peat-bogs and mosses of Ireland, selected Mr. Griffith to be one of their engineers. In 1812 his Surveys and Reports were published by authority of Parliament. He was at this time appointed to succeed the late eminent Chemist and Mineralogist,

Richard Kirwan, as Inspector-General of His Majesty's Mines in Ireland.

After the famine in the South of Ireland, in 1822, he was employed by the Marquis Wellesley, then Lord-Lieutenant, to improve and construct roads in the counties Cork, Kerry, and Limerick, a task which, had it been Mr. Griffith's sole achievement, was carried out so successfully as to merit the highest praise. Whilst engaged on this laborious undertaking, he constructed two hundred and fifty miles of new roads through a mountainous district, previously quite inaccessible, and the favourite resort of "Whiteboys," who made it their stronghold, and defied the laws.

Before the Ordnance Survey was established, Mr. Griffith was appointed General Boundary Surveyor, and so long ago as the year 1812 the first outlines were attempted of one of the most valuable and important works with which his name is identified, namely, the preparation of a Geological Map of Ireland. No labour seemed to Griffith too great in order to carry out this great work satisfactorily, and also its subsequent revision; indeed, throughout his life, he never lost his interest in it. Four editions of it were published, the latest of which was issued in 1854.

In 1828 he was appointed Commissioner for the General Survey and Valuation of Rateable Property, while his services were used by the Government in connexion with various other commissions, such as the Shannon Commission, etc. In 1848 he was appointed Deputy Chairman of the Board of Works (Dublin), and in 1854 he became Chairman, an office which he held until his death, although relieved of its active duties. It should be mentioned that he was twice elected President of the Geological Society of Ireland, and took a very active part in its proceedings, and in promoting the study of geology in his native city.

Dr. Griffith records that the Meeting of the British Association in Dublin in the year 1835, gave a fresh impulse to his labours, and in 1838, Major Larcum, R.E., of the Ordnance Survey Office, Dublin, constructed for him an entirely new Topographical Map of Ireland on a scale of four miles to an inch, "the most accurate Map of Ireland that has hitherto been published." (See *Quart. Journ. Geol. Soc.* 1854, vol. x. p. xx.) It was on this map that Dr. Griffith finally laid down the fourth and revised edition of his stratigraphical colouring and geological boundary lines, and the first copy of which he exhibited to the Geological Society of London in February, 1854. At that Anniversary Meeting the Council awarded Dr. Griffith the Wollaston Palladium Medal, in recognition of his valuable services to geology by the completion of his Geological Map of Ireland.

In 1858 Her Majesty conferred a Baronetcy upon him in acknowledgment of his long and valuable public services.<sup>1</sup> One who knew him well, Mr. G. H. Kinahan, M.R.I.A., writes:—"Griffith had extraordinary powers of endurance, memory, and foresight. He usually travelled by night, and after spending the night in a post-chaise would do a hard day's work in the field. Scarcely twenty years

<sup>1</sup> Much of the foregoing is taken from the *Dublin Daily Express*, Sept. 27, 1878.

ago he walked over the Dingle Mountains with a party of young men, yet Sir Richard, then over 70 years of age, was as active as the youngest, and endured a pitiless downpour of rain in his swallow-tail coat perfectly unconcerned."

"Like Sir William Logan in Canada, wherever Sir Richard Griffith went he made friends, and these, throughout the whole of Ireland, served as an army of amateur helpers, who supplied him with information as to rocks and fossils. He had a wonderful memory for names and places, and could describe minutely each quarry and section in any given locality, long years after he had visited it."

"More than half a century has passed away since Griffith commenced his Geological Map of Ireland. At that time there were no Ordnance Survey sheets to use as a basis on which to lay down his geological work, as bit by bit he made it out and pieced it together. The existing maps were very incorrect, and they had to be corrected, or maps had even to be made, before they could be used.

"One striking feature about the work is that it is all the result of his own personal observations, and none of it was done by guesswork, yet it was all done before a railway existed, and when even good roads were rarely to be met with.

"The period now called Palæozoic had then but three divisions—the centre was 'Old Red Sandstone,' below which all the rocks were called 'Transition,' or 'Greywacke,' and those above 'Carboniferous.'"

[Sir Richard Griffith is said to have doubted the propriety of retaining the so-called "Old Red Sandstone" series as a separate formation in Ireland, believing it to be made up partly of rocks of Silurian age, and partly of those of the Carboniferous period. However this may be (whether in deference to the opinion of other eminent geologists, or partly as his own conviction), he certainly retained the Old Red Sandstone formation on his map.

He refers with evident confidence to his successful sub-division of the Irish Carboniferous system into a seven-fold series, five belonging to the Carboniferous Limestone, and two to the Coal (Quart. Journ. Geol. Soc. 1854, vol. x. p. xxi.)]

"The tracts which Griffith believed to be Silurian, although coloured as Old Red Sandstone, are the mountainous area about Fintona (Cos. Tyrone and Fermanagh), the rocks of the Curlew Mountains (Cos. Sligo and Roscommon), and the Slieve Moyle rocks (Co. Mayo). Subsequently when Du-Noyer found plants in the Silurians of West Cork, which were pronounced by Salter to be allied to Carboniferous forms, Griffith still adhered to his opinion, and said: 'The plants may be Carboniferous, but the rocks are Silurian.' Plants allied to Carboniferous forms have since been found both by American and Continental geologists in rocks of known Silurian age, so that in all probability Griffith was correct.

"When the late Dr. Oldham had proved the existence of Cambrian rocks in Dublin, Wicklow, and Wexford, Sir Richard Griffith stated that rocks of the same age existed in Donegal and Galway. The Donegal rocks have still to be worked out, but as regards Galway

Griffith was quite correct, for beneath the rocks considered by Prof. Ramsay to be the basal group, equivalent to the English Cambro-Silurians, there are over 7000 feet in thickness of rocks that can only be deemed to be of Cambrian age.”—(KINAHAN.)

So lately as the week in which Sir Richard Griffith died, Prof. Edward Hull, F.R.S., the Director of the Geological Survey of Ireland, addressed a letter to him from Glengarriff, informing him that as regards the age of “the Dingle Beds” (which had been referred by Griffith to the Silurian formation and are coloured as such in his Map of Ireland (edit. 1855), but which the officers of the Survey held to be of uncertain age, and had coloured them intermediate between Old Red Sandstone and Upper Silurian), he was now fully convinced “of the correctness of Sir R. Griffith’s views regarding the age of the Dingle, Killarney, and Glengarriff Ranges.” (“Nature” October 10, 1878, p. 627.) But the venerable geologist never lived to rejoice in this confirmation of his views. History will doubtless do justice to the great merit of his work.

We owe to Sir Richard Griffith a most valuable contribution to palæontology, namely, a “Synopsis of the Characters of the Carboniferous Limestone Fossils of Ireland, by Frederick M’Coy, F.G.S.” (Dublin, 1844, 4to. pp. 208, 29 plates; reprinted in 1862, with table of fossils and localities.) This valuable work, containing, in addition to the fossils previously known, descriptions and figures of 450 new species, was prepared and published at the cost of Sir Richard Griffith, and represents the specimens in his own cabinet, collected either by himself or his friends, from the Carboniferous Limestone system of Ireland.

We hope that this valuable collection may find a resting-place in one of the public museums in Dublin.

The following is a list of papers published by Sir Richard Griffith, Bart. :—

Report relative to the moving bog of Kilmaleady in the King’s County.—Tilloch, Phil. Mag. lviii., 1821, pp. 70–73.

On the Principle of Colouring adopted for the Geological Map of Ireland.—Dublin Geol. Soc. Journ. ii. 1839, pp. 78–90.

On Mr. Weaver’s paper on the Mineral Structure of the South of Ireland.—Phil. Mag. xvii. 1840, pp. 161–179.

On the Geological Relations of the several rocks of the South of Ireland [1839].—Geol. Soc. Proc. iii. 1841, pp. 136–138.

On the Syenite Veins which traverse Mica, Slate and Chalk at Goodland Cliff and Torr Eskert, to the south of Fair Head, in the County of Antrim.—Trans. Geol. Soc. 2nd series, v. p. 179. Proc. Geol. Soc. ii. p. 223. Phil. Mag. 3 series, viii. p. 559.

On the Geological Relations of the several Rocks of the South of Ireland.—Proc. Geol. Soc. iii. p. 136. Phil. Mag. 3 series, xv. p. 536.

On the True Order of the Succession of the Older Stratified Rocks in the neighbourhood of Killarney and to the North of Dublin.—Phil. Mag. series 3, xvi. p. 161; xvii. p. 161.

On the Geological Map of Ireland.—Rep. Brit. Assoc. 1835, Sect. p. 56.

On the Leading Features of the Geology of Ireland.—Rep. Brit. Assoc. 1837, Sect. p. 88.

On the Geological Structure of the South of Ireland.—Rep. Brit. Assoc. 1838, Sect. p. 81. Karst. u. Dech. Arch. xvii. p. 388. L. u. Br. N. Jahrb. 1844, p. 828.

Statement of the Fossils which have been Discovered in the Several Members of the Carboniferous or Mountain Limestone of Ireland.—Rep. Brit. Assoc. 1842, Sect. p. 51.

On the Distribution of Erratic Blocks in Ireland, and particularly those of the North Coasts of the Counties of Sligo and Mayo.—Rep. Brit. Assoc. 1843, Sect. p. 40.

On the Lower Portion of the Carboniferous Limestone Series of Ireland.—Rep. Brit. Assoc. 1843, Sect. p. 42.

On the Old Red Sandstone, or Devonian and Silurian Districts of Ireland.—Rep. Brit. Assoc. 1843, Sect. p. 46.

On the Occurrence of a Bed of Sand containing Recent Marine Shells, on the summit of a Granite Hill, on the Coast of the County of Mayo.—Rep. Brit. Assoc. 1843, Sect. p. 50.

On certain Silurian Districts of Ireland.—Rep. Brit. Assoc. 1844, Sect. p. 46.

Notice respecting the Fossils of the Mountain Limestone of Ireland, as compared with those of Great Britain, and also with the Devonian System.—4to. Dublin, 1842.

A Synopsis of the Characters of the Carboniferous Limestone Fossils in Ireland.—4to. Dublin, 1844.

On the Order of Succession of the Strata of the South of Ireland, particularly with reference to the Killarney District, Co. Kerry.—Dublin Geol. Soc. Journ. iii. 1849, pp. 150-160.

On the Lower Members of the Carboniferous Series in Ireland.—Brit. Assoc. Rep. 1852 (pt. 2), p. 46.

On the Copper Beds of the South Coast of the Co. of Cork.—Dublin Geol. Soc. Journ. vi. 1853-55, p. 195.

Explanation of the Principles of Colouring the Geological Map of Ireland.—Dublin Geol. Soc. Journ. vii. 1855-56, p. 294.

On the Sub-divisions of the Carboniferous Formation of Ireland.—Dublin Geol. Soc. Journ. vii. 1855-57, p. 267.

On the Remains of Fossil Plants Discovered in the Yellow Sandstone at the base of the Carboniferous Limestone Series of Ireland.—Dublin Roy. Soc. Journ. i. 1856-57, p. 313.

On the Relation of the Rocks at or below the base of the Carboniferous Series in Ireland.—Brit. Assoc. Reports, 1857, pt. 2, pp. 66-67.

On the Stratigraphical Relations of the Sedimentary Rocks of the South of Ireland, of which the Glengarriff and Dingle Districts are composed, etc.—Dublin Geol. Soc. Journ. viii. 1857-60, p. 2.

On the Occurrence of *Posidonia Becheri* in the Calp of Rush, Co. Dublin, and of *Posidonia lateralis* in the Carboniferous Slates of Kinsale, Co. Cork.—Dublin Geol. Soc. Journ. viii. 1857-60, p. 75.

An Additional Permian Locality, Co. Tyrone.—Dublin Journ. Geol. Soc. viii. 1857-60, p. 173.

The Localities of Irish Carboniferous Fossils, arranged Stratigraphically, etc.—Dublin Geol. Soc. Journal, ix. 1860-62, p. 21.

On the Boulder-Drift and Esker Hills of Ireland, and on the position of the Erratic Blocks in the country.—Brit. Assoc. Reports, xli. 1871, (Sect.) pp. 98-100.

PROFESSOR ROBERT HARKNESS, F.R.S., F.G.S., late of Queen's College, Cork.—This eminent Geologist died suddenly, from heart-disease, in Dublin on Oct. 3rd.—*Nature*, Oct. 10th, 1878.

MR. THOMAS BELT, C.E., F.G.S.—The death of this excellent Naturalist, Observer, and Geological Writer, is announced in *Nature*, Sept. 26th, 1878.

We hope to publish Memoirs of both the above geologists in the December Number.—EDIT. GEOL. MAG.

ERRATA.—The Rev. Maxwell H. Close requests to be allowed to note the following corrigenda in the last Number of the GEOL. MAG., for which he is not responsible. P. 452, line 15, for "probable," read "improbable"; line 18, for "molecular," read "molar"; p. 453, line 6, *dele* "at that time"; p. 454, line 1, remove inverted commas from sentence following "figure." Mr. Close says, "I did not read out the note; it contains a strange blunder of mine, but unfortunately I forgot to tear it away when giving the MS. to be printed."