

Can you, or can any of your readers give me some more information on this subject ?

EDW. MAULE COLE.

WETWANG VICARAGE, YORK.

P.S.—Can you recommend to me any notices on “Red Chalk” in England?—E. M. C.

The Rev. E. M. Cole will obtain the information he seeks, by consulting the following papers, which are picked out of a list still in course of formation.

Blake, Rev. J. F.—Proceed. Geol. Assoc. vol. v. p. 232, etc.

Judd, J. W.—Quart. Journ. Geol. Soc. vol. xxiii. p. 227.

Phillips, Prof. J.—Geol. of Yorkshire, 3rd edit. p. 75.

Seeley, Prof. H. G.—Ann. and Mag. of Nat. Hist. 3rd series, vol. vii. p. 233, 1861; Quart. Journ. Geol. Soc. vol. xx. p. 327.

Taylor, Richard.—Phil. Mag. 1823, vol. 61, p. 81.

Wiltshire, Rev. T.—Quart. Journ. Geol. Soc. vol. xxv. p. 185.

For Analysis of Red Chalk see—

Church, A. H.—Chemical News, vol. 31, p. 199; or *GEOL. MAG.* Vol. II. p. 331.

B. B. W.

OBITUARY.

THE REV. WILLIAM BRANWHITE CLARKE,

M.A., F.R.S., F.R.G.S., F.G.S., ETC.

BORN 2 JUNE, 1798. DIED 17 JUNE, 1878.

WE regret to record the death of another veteran geologist, the “Father of Australian Geology,” the Rev. W. B. Clarke, which took place at his residence near Sydney, in the eighty-first year of his age. Mr. Clarke was born at East Bergholt, Suffolk, on the 2nd June, 1798, and was partly educated at Dedham Grammar School. He entered Cambridge in 1817, becoming a member of Jesus College, took his B.A. in January, 1821, and became M.A. and Member of Senate in 1824.

From 1821 to 1824 he acted in his clerical capacity at Ramsholt and other places, and during this period made fifteen distinct geological and other excursions on the Continent, in addition to those prosecuted by him in this country. During the years 1830–31 Mr. Clarke was present at many of the scenes of the Belgian War of Independence, and the last siege of Antwerp. His clerical duties were continued up to the year 1839, when he left for New South Wales, with the object of examining the physical structure of the country, and regaining health lost during a severe illness. From the time of his arrival till 1844, Mr. Clarke was in clerical charge of the country from Paramatta to the Hawkesbury River, and for a portion of the time conducted the King’s School. In that year he undertook the charge of Campbelltown, but in 1847 he became minister of Willoughby, which he held till 1870, then retiring, after nearly fifteen years’ service in the church, with a testimonial from his parishioners, expressive of their sympathy and respect.

Mr. Clarke's literary labours were numerous and varied. In 1829 a series of poems and translations were published, entitled "Lays of Leisure," in 1819 a poem, entitled "Pompeii," in 1822 "The River Derwent, and other Poems," and in 1828 "Recollections," a poetic commemoration of a visit to Mont Blanc; and other works of a religious nature. Mr. Clarke's valuable services to the Government commenced in 1840, when he made his first journey to the southward, through the Illawara district. The result of this, and his other journeys, geographical as well as geological, will be found recorded in a clear and concise manner in his chief work,¹ and in the various Parliamentary Blue Books² published by Authority, to say nothing of the fifty-three papers accredited to his name in the Catalogue of Scientific Papers³ of the Royal Society. In addition to the list there given, we are acquainted with many others, and it may be mentioned that some of Mr. Clarke's most interesting communications were made to the leading Sydney newspaper, the *Sydney Morning Herald*, which we regret are not preserved in a more lasting form.

Mr. Clarke's labours as a geologist and zoologist commenced some time before his departure from this country, for in 1828 a paper, "On the Construction of Geological Hammers," appeared, and again in 1837, "On the Geological Structure and Phenomena of Suffolk, and its Physical Relation with Norfolk and Essex," with several others. One of his first papers on Australian geology was, we believe, "On the Occurrence of Atmospheric Deposits of Dust and Ashes; with Remarks on the Drift Pumice of the Coasts of New Holland," in 1842.

With the 'Discovery of Gold in Australia,' and the 'Age of the N. S. Wales Coal-beds,' the name of W. B. Clarke will always be associated. This is not a fitting time to enter into the merits of his controversies respecting his claim for priority to the former, or his views on the latter question; let it suffice, however, that excepting Count de Strzelecki, the palm has been awarded him in the Gold question by Prof. Geikie, F.R.S., in a late work,⁴ whilst the second may, to a certain extent, still be said to remain an open question. Some of the more important subjects which engaged Mr. Clarke's attention were the occurrence of gold in granite, the occurrence of the diamond in N. S. Wales, and the discovery of tin in Australia. The occurrence of the diamond appears to have been known to Clarke as early as September, 1859; whilst under this head may be mentioned a most exhaustive and critical paper, the *Natural History of the Diamond*, delivered in the form of two Anniversary Addresses to the Royal Society (N. S. Wales) on the 25th May, 1870, and 22nd May, 1872, respectively. Little doubt appears to exist that we owe

¹ *Researches in the Southern Goldfields of New South Wales*. 2nd ed. 8vo. Sydney.

² Papers relative to the Discovery of Gold in Australia, presented to both Houses of Parliament, by Command of Her Majesty. Parl. Blue Books. Folio. London.

³ *Catalogue of Scientific Papers, Royal Society*, vol. i. 1867; vol. vii. 1877.

⁴ *Life of Sir Roderick I. Murchison, Bart., K.C.B., etc.*, by Archibald Geikie, LL.D., F.R.S., etc. London, 1875. Two vols. 8vo. (vol. ii. p. 135).

the first actual discovery of tin in Australia to Mr. Clarke, as detailed by himself in a paper 'On Mining' contributed to the *Sydney Morning Herald*, August 16th, 1849. He also reported on the occurrence of Cinnabar in N. S. Wales, and, by means of a collection of fossils, made with the assistance of W. Hardy, Esq., first elicited the fact of the occurrence of rocks of Silurian age on the flanks of the Dividing Range, a discovery for which he was highly complimented by the late Sir R. I. Murchison. This collection was examined and determined by the late Messrs. Lonsdale and Salter, but a second and more extensive one, gathered from all parts of N. S. Wales by Mr. Clarke, and his friends, has lately formed the subject of a detailed and successful work by Prof. de Koninck.¹

Mr. Clarke paid a geological visit to Tasmania in 1856, and another in 1860, to examine the country around Fingal and the Don River. The interest he took in all matters connected with Colonial Geology cannot be better shown than by the fact that he successfully recommended no less than three Government Geologists to their respective colonies, viz. the late Messrs. R. Daintree, and C. D'Oyly H. Aplin, to North and South Queensland, and Mr. C. Gould to W. Australia, who was succeeded by Mr. H. Y. L. Brown. We believe Mr. Clarke was also instrumental, at all events to a considerable extent, in the appointment of Mr. C. S. Wilkinson, F.G.S., Government Geologist for N. S. Wales. Just as he took an interest in Colonial Surveys, so Intercolonial Exhibitions appear to have occupied much of his time, taking particular interest in the Geological Sections, and frequently contributing articles to the official catalogues on the resources of his adopted country. He was a member of the N. S. Wales Commission of the Paris Exhibition of 1867, the Intercolonial Exhibition of 1870, and the Philadelphia International of 1877. The Rev. W. B. Clarke was appointed in 1839, by Sir G. Gipps, a Trustee of the Australian Museum, Sydney, and of the Free Public Library. Sir C. Fitzroy placed his name on the first list of Fellows of Sydney University, an honour, however, never accepted, we believe. The Presidential and Vice-Presidential chairs of the Royal Society of N. S. Wales were several times filled by Mr. Clarke; indeed in the reconstitution of that Society, a short time since, he took a most lively interest. The Geological Society of London elected him a Fellow in 1826, and awarded him the Murchison Medal in 1877, "in recognition of his remarkable services in the investigation of the older rocks of New South Wales." By the Royal Geographical Society he was elected a Fellow in 1865, and his name is to be found amongst the list of members of the Société Géologique de France, and the Corr. Members of other Continental Societies. Mr. Clarke was elected a Fellow of the Royal Society in June, 1876, for "the important part taken (by him) in the refounding of the Royal Society of N. S. Wales, and in the promotion of Scientific Knowledge in the Colony." We believe Mr. Clarke was engaged, only shortly before the com-

¹ Recherches sur les Fossiles paléozoïques de la Nouvelle-Galles du Sud (Australie). Par L. G. de Koninck, D.M. Bruxelles (2 vols. 8vo. pt. 1, text and atlas, 1876; parts 2 and 3, text and atlas, 1876-77).



mencement of the attack which resulted in his death, on a Geological Map of N. S. Wales, and on a second edition of his "Southern Gold Fields." The name of W. B. Clarke requires no encomiums from us; but when we say, as we think we may safely do, that more than half his papers and reports have been written with the view to the development of the mineral resources of his adopted country and the well-being of his fellow-colonists, some idea may be gathered of the debt N. S. Wales owes to the memory of the Rev. W. B. Clarke. Few are aware of the immense amount of work performed during his various explorations, but it is stated that he has officially reported on no less an area than 108,000 square miles of territory.—R. E., jun.

[For some of the facts connected with the earlier career of the Rev. W. B. Clarke we are indebted to extracts from an Australian contemporary.]

THOMAS OLDHAM, A.M., LL.D., F.R.S., F.G.S.,

LATE DIRECTOR OF THE GEOLOGICAL SURVEY OF INDIA.

BORN MAY, 1816, DIED 17 JULY, 1878.

DEATH has just deprived us of another well-known and eminent geologist, who was the founder of and for twenty-five years occupied the arduous and important post of Superintendent of the Geological Survey of our Indian Empire, probably the greatest geological undertaking carried on by the British Government.

Dr. Oldham was the eldest son of the late Thomas Oldham, Esq., of Dublin, in which city he was born in May, 1816, and where he was educated at a private school, and entered Trinity College, Dublin, before he was sixteen years of age.

After obtaining his B.A., he devoted 1837–38 to special studies of engineering in Edinburgh, where he also applied himself to acquiring a sound knowledge of geology and mineralogy under Prof. Jamieson, with whom he formed a life-long friendship. Subsequently he was engaged in some extensive engineering works in Edinburgh.

Returning to Ireland in 1839, he became principal Geological Assistant to General (then Captain) Portlock, R.E., at that time in charge of the Geological Department of the Ordnance Survey of Ireland, and with whom he surveyed the counties of Derry and Tyrone, and was largely engaged in the preparation of the report on those counties, published in 1843. Subsequently he became Curator and Assistant Secretary to the Geological Society of Dublin, and Assistant Secretary to the Institute of Civil Engineers of Ireland.

In 1844 he was appointed Assistant-Professor of Engineering in Trinity College, Dublin, under Prof. J. MacNeill. In 1845 he succeeded Prof. Phillips to the chair of Geology in Dublin University. In 1846 he became Lecturer to, and in 1848 President of, the Geological Society of Dublin.

Between 1844 and 1849 he communicated no fewer than twelve papers to the "British Association" and the "Dublin Geological Society's Journal," all bearing on Irish Geology and Palæontology. On 1st July, 1846, he was appointed Local-Director for Ireland of the