

Friends, Savants and Founders: W.B. Clarke and J.D. Dana

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Abstract

The friendship of the geologists J.D. Dana and the Rev W.B. Clarke marks an important interrelationship in Australian – US nineteenth century science. Formed when the two geologists met in December 1829 when Dana visited Australia attached to the United States Exploring Expedition of 1839-42 and Clarke was a recent arrival from Britain, the two men conducted pioneering fieldwork together in the Illawarra district of New South Wales which laid early foundations on the Colony's sedimentary deposits. Their friendship, linked through correspondence continued into their old age. Both men became leading savants in their own country and founders of key scientific institutions of science, Dana as the influential leader of geological science in the United States and Clarke as the first Vice-President of the Royal Society of New South Wales. The paper focuses an illuminating new photograph of W.B. Clarke presented to the author by his great grandson John Clarke.

Introduction

In 1964, I published a paper *James Dwight Dana in New South Wales, 1830-1840* in the *Journal and Proceedings of the Royal Society of NSW* (Mozley (1964)) which was my first foray into the history of Australian science and which centred on the geological exploration in January 1840 that Dana conducted with W.B. Clarke in the Illawarra district of New South Wales.

Dana was 26 and already the author of *A System of Mineralogy* (1837) when he arrived in Australia as a member of the visiting United States Exploring Expedition. The two vessels Vincennes and the Peacock, under the command of Lieutenant Charles Wilkes, had left Virginia in August 1838, and after eighteen months of survey of the South American coast and the Pacific Islands, including the Society Islands and the Samoan group, arrived unheralded in Sydney Harbour on 29 November 1839. Hailed as “one of the great events in the history of science in the United States”, it carried six university-trained

scientists, and, in the years 1838-42, the expedition would explore some fifteen hundred miles of the Antarctic coast, complete a survey of 280 islands, produce a total of 180 charts, and subsequently publish three extensive reports, by Dana, on geology, zoophytes and crustacea, later consigning an immense array of its collected natural history specimens to form the basis of the Smithsonian Institution (Viola & Margolies (1985)). The impact of this major expedition's findings has been less widely recognised than the British surveys that brought Darwin, Joseph Hooker and Thomas Huxley to Australian shores. But Dana was to leave his important mark. Remaining behind in New South Wales with two of the other scientists while the expedition conducted its Antarctic survey, Dana spent two months making fundamental determinations on Australia geology.

The Rev W.B. Clarke was himself a recent arrival in Australia in 1839, having reached Sydney with his wife and two children in May that year to take up an Anglican parish in the

Colony. Bu Clarke had studied geology under Professor Adam Sedgwick at Cambridge; he was a Fellow of the Geological Society of London, and the author of papers on the geology of Dorsetshire and the Continent when he arrived; the first trained geologist to settle in Australia. He was 41 and he cherished the firm ambition “to found a new earth for geology” in Australia. Eager to make Dana’s acquaintance he was introduced by the expedition’s chaplain on January 16. Thereafter the two men were much together Clarke riding out from Parramatta on 6 January 1840, some sixty miles via Appin, to meet Dana in Wollongong and to begin their joint examination of the abundant fossils in the argillaceous sandstone cliffs, the raised beach, the Kiama Blowhole and other phenomena of this striking Australia landscape. For Clarke it marked his first serious attempt to examine the geology of his adopted country, and it is his early Australian Diary (Clarke (1839-1840)) that provides the detail of their engaged and stimulating period of geologising. At the same time their journey formed the basis of a lifelong friendship between them, Dana writing Clarke in 1872: “The few weeks of intercourse which I had with you in Australia were among the happiest days of my life and I shall never forget your kindness & the scenes we enjoyed together”. (Moyal (2003b) pp 904-905).

In the intervening years James Dana had produced his three monumental Reports of the expedition, Geology, Crustacea and Zoophytes, (Dana, 1839, 1851, 1852-3), and his major studies on Coral Reefs and Vulcanology. His Geology furnished findings of his Australian fieldwork in which he had independently mapped and described the rock formations between the Hunter and the Shoalhaven rivers, the sandstones around Sydney and Parramatta, the Illawarra District

and Kangaroo Valley (which he had visited with Clarke), and determined these latter formations to be conformable and of Permian age (Viola & Margolis (1985) pp95-96). Dana was appointed to the Benjamin Silliman Chair of Geology at Yale College in 1850.

Clarke’s first published papers relating to the fossils and age of the Australian coal beds were published, with some accord and some differences from Dana’s, in 1848 (Clarke (1848)). In the intervening years, snatching time from parish duties, he had published extensively on meteorology and maritime and inland exploration in the Sydney press, and had emerged as the unofficial science communicator of the *Sydney Morning Herald* (Moyal (2003b) Bibliography, pp 1232-1236). Following the gold discoveries of 1851, he was appointed by the New South Wales government as Geological Surveyor to examine the Colony between Omeo in Victoria, and north to Ipswich (then a northern-most outpost of New South Wales), and to report on the structure and mineralogy of the country. His nineteen substantial reports to Government, edited and published in the Sydney press, identified many areas where gold was subsequently found, and made Clarke a household name.

Across the years, the two friends met in correspondence (Moyal (2003a), (2003b)). “I was much gratified to hear from you”, Dana wrote Clarke in 1854. “I have been looking for the Reports of which you spoke but they have not yet come. I trust you will reap some golden results for your labours in behalf of the gold of Australia. I should enjoy very much another ride over the hills and through the valleys of the country... Will you never come to Yankee land? ... Australia is the land for queer things; and therefore a grand place

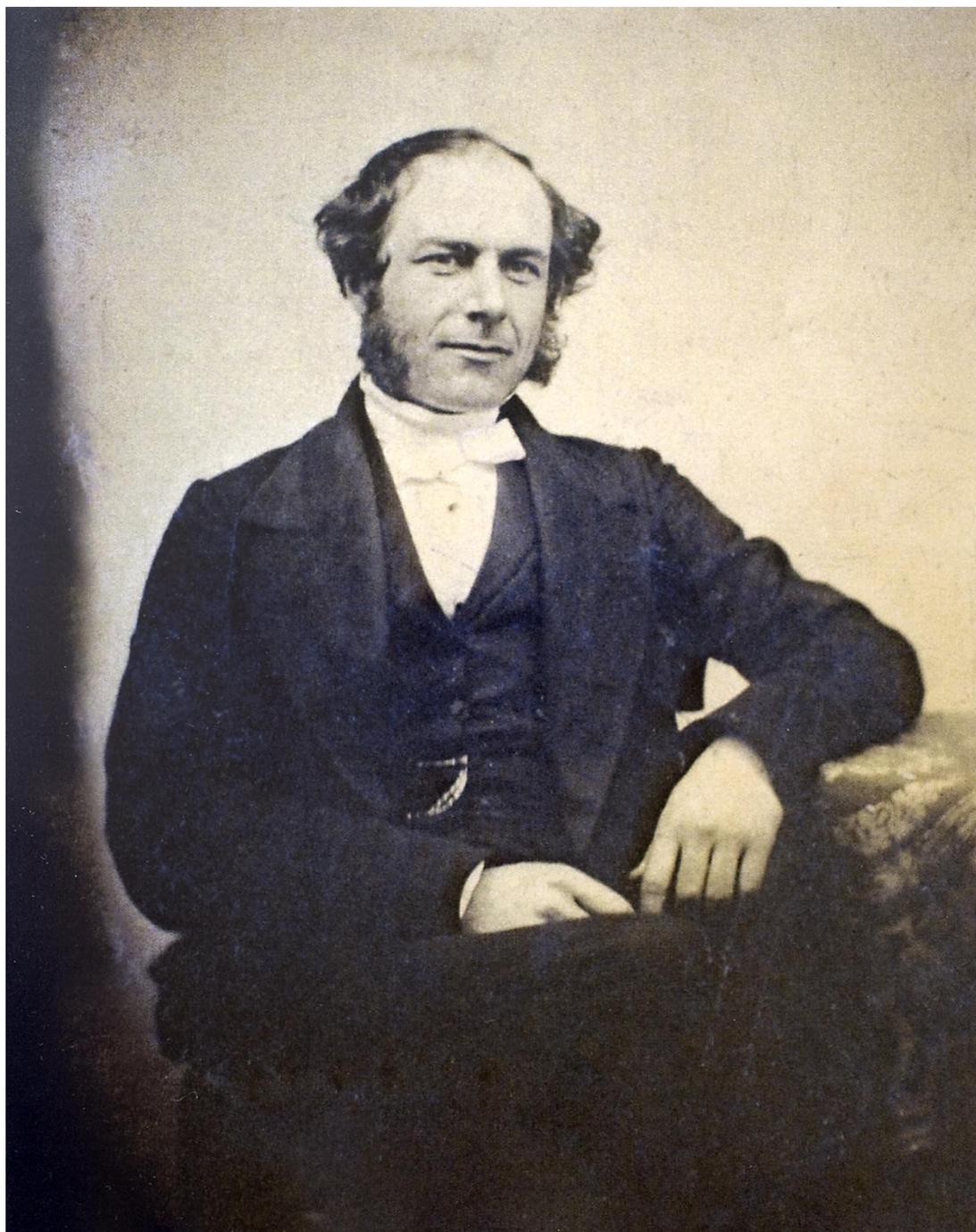


Figure 1. Rev W.B. Clarke, Australia's pioneer geologist. A newly-discovered photograph of a more youthful William Bramwhite Clarke.

for scientific exploration. I should rejoice to take it up with you, if & if- and if; there, three ifs to one long one besides”. (Moyal (2003a) pp408-409).

Both Dana and Clarke emerged as leading savants in their respective countries, both traversing the period when science was moving from the arena of individual inquiry to a rising professionalism. Dana became an influential teacher and researcher at Yale College, and retired as a pre-eminent national and international figure in 1890 at the age of seventy-seven. Clarke, fifteen years his senior, had long given support and encouragement to, and shared his pioneering knowledge with, the young British-trained geologists who came to Australia in the 1850's to man the colonial geological surveys, and aided the young appointees arriving to fill scientific posts in the new universities. Importantly, as a senior contributing scientist (his *The Sedimentary Formations of New South Wales* appeared in several editions from 1867 while his papers figured in the *Journal of the Geological Society of London* and the *Tasmanian Journal of Natural Science*), he built wide networks in the growing local community of science.

A leading savant he became one of the key founding fathers of the newly-renamed Royal Society of New South Wales and served as its first Vice-President from 1867-72.

There his inaugural address in 1867 marked his open-minded approach to scientific ideas. “We must strive to discern clearly, understand fully, and report faithfully”, he declared, “to love truth in all things spiritual and moral; to adjure hasty theories and unsupported conjectures; ...to give our brother observer the same credit we take to ourselves but giving time for the formation of the judgment which will inevitably be given”.

Clarke believed that Australia would in time “throw light upon questions... imperfectly understood at home”. He himself carried on a sustained correspondence with Darwin, whose work he greatly admired, although, like Dana, he rejected the evolutionary principle and, anchored in his acceptance of Divine revelation and the Christian faith, remained a Separate Creationist all his life (*Sydney Morning Herald*, 11 July 1869; Stanton, 1971). It was Charles Darwin, however, who, with William Stanley Jevons, became Clarke's sponsor for his election to the Royal Society of London in 1876.

W.B. Clarke's links with Dana, revealing in themselves, are part of a larger picture, that of Clarke as a prime communicator and networker in science. From 1840 until his death in 1878 he maintained a vast correspondence with geologists, botanists, zoologists, museum curators, land and sea explorers, astronomers, meteorologists, physical scientists, scientific governors and administrators across the Australian Colonies and New Zealand, and with leading international scientists at the centres of science in Britain, Europe and America, and he preserved this correspondence for posterity. As such he represents a key source of information on the vigorous life of science in nineteenth century Australia and its strong interrelations with science abroad.

Across my career as a historian of science I have turned to the rich Clarke Papers held in the Mitchell Library of the State Library of New South Wales as an important source for my *Scientists in nineteenth century Australia: a documentary history* (1976), *A Bright & Savage Land: Scientists in Colonial Australia* (1986) and for the collection of some 900 letters in *The Web of Science, The Scientific Correspondence of the Rev W.B. Clarke, Australia's Pioneer Geologist* (Australian Scholarly Publishing (2003). This

research, however, has been carried out in the absence of any photograph of W.B. Clarke that reveals the character of the man, and geologists and other historical researchers have also, perforce, had to depend on depictions either of a heavily-bearded, old man or one grave image of an apparently highly disgruntled man aged about fifty-five.

Happily, in recent days W.B. Clarke's great grandson, John Clarke, now in his mid-nineties, has generously presented me with a photograph of a lively, slightly humorous, youthful William Branwhite Clarke (Figure 1), which deserves wide circulation through the Society which commemorates, in the Clarke Medal, his founding influence and his work.

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