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Geologist, Writer and Explorer

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GEOLOGICAL SOCIETY MEMOIR NO. 34

The Life and Work of Professor J. W. Gregory FRS (1864–1932):
Geologist, Writer and Explorer

BY

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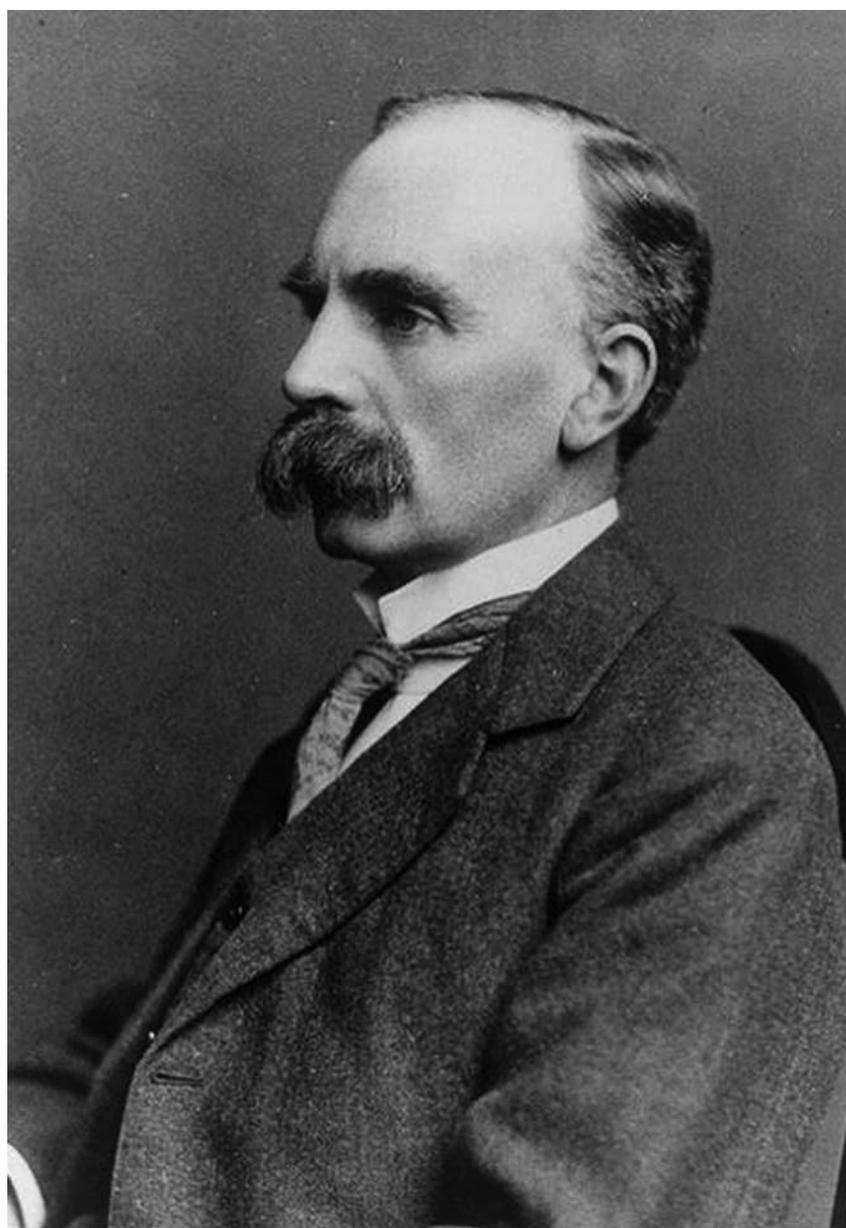
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John Walter Gregory at about the time of his 1914 visit to Australia when he was 50 years old. With acknowledgements to the University of Glasgow.

Summary of major events in the life of J. W. Gregory

1864. John Walter Gregory born in London.
1870. Goes to Pestalozzian School.
1874. Goes to Stepney Grammar School.
1878. Leaves school; works on farm in Cheshire for two years.
1880. Returns to London. Becomes a wool sales clerk & starts night school.
1883. Joins the Geologists' Association. Is probably studying at Birkbeck College.
1885. First identified published geological paper.
1886. Matriculates in London University; aiming for degree via Birkbeck & RSM.
1887. Elected FGS; appointed Assistant at British Museum (Natural History) (NHM).
1888. Elected FZS; first published paper after NHM appointment; start of the flood.
1889. First echinoid publication on NHM work. Goes with G. Cole to Cottian Alps.
1890. Goes to Bavaria for petrological work & continental museums for NHM work.
1891. Goes to International Geological Congress (IGC) in Washington, D. C. & travels extensively across USA. Gains First Class BSc in Geology. Published opus on Maltese echinoids that will gain him a London DSc in 1893.
1892. Summer mapping in Cottian Alps. Awarded moiety of Lyell Fund by GSL. Leaves for East Africa on Villiers Great Lake Rudolf Expedition.
1893. Severe attack of malaria; expedition collapses. Organises his own 5 month expedition to the Rift Valley, Lake Baringo & Mt. Kenya. Returns to London.
1894. First publication on Bryozoa. Elected to GSL Council.
1895. Marriage with honeymoon in Switzerland. First publication on coral taxonomy; journalism.
1896. On Conway expedition to Spitzbergen; interest in polar matters aroused; first child born. Rift Valley book appears with Gregory's first anthropological output.
1897. Fails to secure Oxford Chair; frustration at lack of promotion prospects.
1898. On short NHM cruise in N. Atlantic; first propounds Tetrahedral Theory.
1899. Visit to Caribbean Islands; publication of massive study of the Jurassic corals of the Cutch (India) with early statistical methods. Accepts Chair in Melbourne.
1900. Starts work as Prof. on the geology & mining geology of Victoria. Appointed Leader of the British National Antarctic Expedition; second child born in England. Returns to the UK to resolve organisation of expedition.
1901. Short visit to see US mining schools; returns to Melbourne to wife & family; resigns as Antarctic expedition Leader; is elected FRS. Appointed Director of the Geological Survey of Victoria concurrent with Chair of Geology & Mineralogy. Start of the Lake Eyre expedition, Central Australia.
1902. Starts extramural lectures in Geography. First publications on Australian mining Geology. Starts re-organisation of Geological Survey of Victoria.
1903. Starts work in Tasmania; taken seriously ill; recovers. Start of Geography textbook publication. Visits New Zealand.
1904. President of Section E (Geography) of Australasian Association for the Advancement of Science meeting in New Zealand; visits W. Australia, resigns Melbourne chair & is appointed Professor of Geology, University of Glasgow.
1905. Award of GSL Bigsby Medal; elected FRSE, visits mines in Zimbabwe & S. Africa & BA meeting in S. Africa. Start of work on Scottish geology.
1906. 'Dead Heart of Australia' book published. Appoints G. W. Tyrrell.
1907. Visits France, Norway & Sweden. President of BA Section C (Geology). First publication of political views on Australia.
1908. Expedition to Cyrenaica (Libya). President of the Glasgow Geological Society.
1909. Visits W. Australia, Queensland, Pacific Ocean islands, W. & Central Canada. Publication of NHM Catalogue of Cretaceous Bryozoa.
1910. Attends IGC in Stockholm, field work in Sweden.
1911. Visit to Croatia & Bosnia. Start of Earthquake studies.
1912. Expedition to Benquella, Angola.
1913. Publication of 'The nature and origin of Fjords'.
1914. Visit to W. Australia; return via China, Mongolia, USSR & Finland under wartime conditions. Elected President of the Geological Society of Glasgow.
1915. Fieldwork in the UK & Ireland.
1916. Elected to the Council of the Royal Society. Appointed to Committee on Mineral Resources of the Empire.
1917. Wartime work at the War Office and the Air Board in London. Appointed to the Calcutta University Commission. Leaves for India after field work in Ireland.
1918. In India on the Commission's work.
1919. Commission completed. Fieldwork in Kenya & Rift Valley. Return to Glasgow. Awarded Victoria Medal by RGS. Elected to the Council of the Royal Society.
1920. Buys yacht. First of a series of disastrous papers on glacial geology.
1921. Visit to Burma regarding oil geology. Second Rift Valley book published.
1922. Expedition to SE Tibet with son. Award of Gold medals by Royal Scottish Geographical Society and by the Geographical Society of Paris.
1923. First published opposition to Wegener's continental drift.
1924. Elected President of BA Section E (Geography) for Toronto Meeting. Visits the southern states of the US in connection with racial matters and geology.
1926. Attends IGC in Spain & visits many mines.
1928. Two visits to Switzerland. Awarded Honorary LL.D Liverpool; 'Elements of Economic Geology' published; major input to BA meeting in Glasgow & the International Geographical Congress in Cambridge. Elected President of the GSL.
1929. 'Structure of Asia' published & origin of the Atlantic Ocean. First BBC broadcast. Gregory retires from Chair to concentrate on books and papers.
1930. Honorary LL.D Glasgow awarded. Origin of Pacific Ocean published; Visits mines in Bavaria and Saxony. Moves to Essex to join wife.
1931. Elected President of the BA Section C (Geology) for Centennial year. Three books published.
1932. Expedition to Peru; traverse of Andes completed; drowned in river headwaters of the Amazon.

Preface

When I first went to Glasgow as the Professor of Geology in 1974 I heard about some of the astonishing exploits of John Walter Gregory FRS, the first named Professor of Geology (1904–1929), of whom I had previously only known because of his association with the Rift Valley in Kenya and his two monumental presidential addresses to the Geological Society of London, on the history of the Atlantic and Pacific oceans. I thought little about this until in 1977 I unexpectedly received two copies of a 22-page booklet about Gregory's life, written largely by his son, Christopher John Gregory. His widow, Mrs Marion Gregory, had kindly sent me the copies following his death on 24 February 1977. I was intrigued by the account and made more inquiries of my older colleagues about Gregory's work, but very little was known as to what he had worked on, despite the booklet recording that Gregory's 'never-ceasing activity produced twenty books and over three hundred papers'. This ignorance was only confirmed by further inquiries. Many had heard of Gregory but no-one could list even approximately the range of his activities.

In 1981 Dr C. J. Burton, Departmental Librarian, to whom I owe an immense debt of thanks, compiled with very great labour a list of Gregory's publications for Professor Gordon Craig, which not only seemed to confirm the above numbers, but gave an insight into Gregory's work. Burton supplied me with a copy, which although incomplete, has been an enormous help to me. Later he perused the incomplete collection of Gregory's surviving field notebooks in the Hunterian Museum for me and references to these notebooks are to those held in that museum. On the whole these are a disappointment; they are mostly jotted down sample localities, sometimes with dates or days, sometimes with neither and with no sketches and minimal information and there is not a complete set. Burton also preserved a postcard sent to Gregory. Mrs M. Gregory donated seven bound copies of some of Gregory's 24 × 16 cm 'quarto' sized papers dated between 1887 and 1924 that had been Gregory's own collection, annotated in his handwriting and I presumed it ought to be possible to uncover what he had achieved in these publications, little realizing they were but a fraction of his output. However, I did not have any significant time to devote to this until I retired formally in 1997. I did, however, obtain testimonies from some old students and one long-retired technician who had known Gregory.

By the time I started in earnest, the biggest problem seemed to be locating descendants of Gregory (there are nearly a thousand Gregoryses listed in UK telephone directories) without whose family accounts it would be impossible to make a complete biography or to understand what influences had yielded such a prolific scientist. By great fortune, one of my former departmental colleagues, Dr George Farrow, had considered making a TV programme on the highlights of Gregory's life (although it was eventually abandoned). By chance, George Farrow's aunt lived in Little Baddow, near Chelmsford, where Gregory had lived in his retirement. Through this connection contact was established with Gregory's granddaughter, Mrs Ann Mendell (née Gregory) in Texas. She has supplied me with copies of letters, family dates and memories, thimble purchases for Audrey Gregory, an account of Gregory's life and family history by his sister, Mrs Anne J. Nicholson (née Gregory), an account of Gregory's son's life by himself, Christopher J. Gregory, and an account of Gregory's home life in Glasgow, also by his son. I am deeply indebted to Ann Mendell for her enormous help with information, interest and encouragement in so many ways. The relationship of the Ayrtons, the Chaplins (Gregory's wife, Audrey's maiden name) and Israel Zangwill was also untangled for me by Ann Mendell. Without her generous help this account would not have been possible. I learnt that Gregory's wife, Audrey had died on 13 December 1945, his sisters Anne on 20 September 1944, and

Eleanor on 4 October 1956, so by the time I started my research, none of Gregory's generation, or either of his two children, were alive. I also wish to thank Miss Jane Rosalind Gregory, Ann Mendell's sister, for her enormous help in tracing and supplying published works, for searching out material I never knew existed, supplying photographs and for transcribing dozens of letters. There are so many family letters that Ann Mendell and Jane Gregory have either given me copies of, or copies of transcriptions made by them, that to avoid needless repetition in the text, all letters whose locations are not given are in the possession of Ann Mendell and Jane Gregory. I also owe a special debt to Gregory's son for his published and unpublished accounts of Gregory's life, especially of his home life in Glasgow, all given to me by Ann Mendell.

What I have tried to do is to give an account of Gregory's work and life, in a broadly chronological order, and assess, as far as I can, the important influences on both. The emphasis is on exactly what Gregory worked on, lectured on and most of all, published on, because this was his life, not just his employment and no one can adequately assess Gregory's scientific and other contributions without knowing the incredible breadth of his work. No one person today, or indeed even in Gregory's time, including Gregory, can be knowledgeable in so many fields as Gregory worked in. Because of this, the account is not slavishly chronological as grouping work done in the same field at somewhat different times makes the account easier to follow, especially when it involves so many different fields of study, viz: taxonomic work on echinoids, corals, and bryozoa and their evolutionary trends, Alpine geology, mineralogy, petrology, the African Rift Valley, Spitzbergen and Polar geology, gold, copper, iron, nickel, coal and other mining geology, oil geology in Burma, underground water, a wide range of geomorphology from Australian lakes, Scottish lochs, a world-wide survey of fjords, Essex rivers and the Thames, to Tibetan, African and Australian rivers, submarine topography, the teaching of geography, racial matters, immigration and economic matters, anthropology, archaeology, the disposition of the continents, Australian, Asian and Scottish geology, glacial studies of England, Scotland and Ireland, climate stability, sea level changes, earthquake studies and other topics. Gregory saw and wrote about the geology of parts of all the continents but Antarctica and South America, indeed it could be argued that he was among the last of the genuine geological polymaths. Although not every single publication has been cited, an attempt has been made to cover most of his differing fields of activity, as is required to appreciate the range of his interests and his phenomenal output, despite this making the account much longer than was originally envisaged. However, critical assessment of his writings in archaeology, anthropology and racial matters is necessarily limited by the author's lack of expertise in these fields.

The full story of how his mother's upbringing was so crucial, and what lay behind his first visit to East Africa have not previously been uncovered nor exactly how he became Director of the 1901 British Antarctic Expedition and why he left resignation so long, or exactly how, as Director, he revitalized the Geological Survey of Victoria, or what he worked on in the War Office in the First World War. Gregory had seen so much of the world's geology that his alternative to continental drift was influential in persuading many British geologists to hesitate about accepting Wegener's continental drift hypothesis, but what had convinced him of his quaint views has not previously been recorded.

Although Gregory, as Fellow of the Royal Society, was undeniably a great geologist, explorer, geographer and writer, this account is not an adulation exercise; several of his conclusions were totally wrong. Science does not advance linearly. The priority of this account is to record what Gregory actually produced, and

make some assessment, necessarily limited, of the results. As Gregory was such a prolific writer, including acting as a journalist for newspapers and review magazines in addition to his books, selections of his writing are quoted verbatim in a few places so that the quality of his writing, his way of expressing his thoughts and what he believed in, may be sampled.

Future work could usefully establish the real reason that Lieutenant C. H. Villiers abandoned the East African expedition he was leading, exactly what Gregory worked on regarding strategic resources and at the Air Board in 1917, and uncover some of what must have been dozens of anonymously written book reviews because of the trenchant personal views Gregory often included in such reviews.

Above all, I owe prolific thanks to Wendy Cawthorne, Deputy Librarian in the Geological Society of London for her enormous help over many years not only in locating books and journals and items in the Archives and in the Tracts, but also bibliographic references. Prof. David Branagan of Sydney University provided advice, encouragement, and a number of invaluable documents relating to Gregory's time in Melbourne. Prof. David Oldroyd of Sydney encouraged me to continue and made helpful suggestions after reading a draft of Gregory's pre-Australian days; Prof. Andrew Gleadow of Melbourne supplied information, a fine digitized copy of the presentation made to Gregory when he left Melbourne and arranged reproduction permissions; Dr W. D. I. Rolfe, formerly of the Hunterian Museum, supplied me with innumerable items including Geikie–Gregory letters from Edinburgh University, suggestions and one book; Dr Douglas McCann of Monash University supplied information about the Melbourne days; Dr C. J. Burton of Glasgow University inspected Gregory's field notebooks in the Hunterian Museum, drawn to my attention by Dr John Faithful; Prof. B. J. Bluck inspected Glasgow University Senate and Court Minutes; Prof. D. R. and Mrs M. Bowes helped me; Jonathan C. Clatworthy kindly sifted the Lapworth Archive in the University of Birmingham for letters from, and photographs of Gregory; Adrian Allan, Liverpool University archivist supplied information and illustrations; Prof. Paul Bishop of Glasgow University most generously lent me his personal copies of some of Gregory's books and helped me in many other ways; my brother Dr John Leake carried out computer searches of liner passenger lists and of English births, marriages and deaths and census returns; Prof. Richard Howarth saved Gregory offprints about to be disposed of and helped in other ways; Dr Tom Darragh of Melbourne marvellously uncovered uncatalogued copies of archive documents regarding the Geological Survey of Victoria, including letters from Gregory to the

Minister with the latter's approving comments, plus other information via Dr Charlotte Smith of the Victoria Museum. Dr Rhys Davies and John Betterton facilitated the copying of letters from the Geikie Archives, Haslemere; Jeff Liston provided a crucial letter to W. R. Smellie and Dr Iain McDonald of Cardiff supplied a book. Profs Gordon Craig, David Branagan and Paul Bishop are particularly thanked for improvements to the text and Drs Nicholas S. Robins and Jessica Pollitt for editing it, but without Alun Rogers' computer and cartographic expertise, none of the figures would have appeared.

Finally, Frances Perry of the IMMM library, Andrew Morrison, Archivist, British Geological Survey, the staffs of the British Library, the University of London Senate House Library, Cardiff University Science Library, the Royal Society Library and Archives, Glasgow University Archives and Library, Liverpool University Earth Sciences and Archives Departments and the Scott Polar Research Institute in Cambridge, are owed a debt of thanks for their helpfulness in locating sometimes obscure material. Because Gregory wrote much outside of conventional scientific journals and no complete list of his publications exists, it is certain that despite identifying 33 books (including monographs) of which two were iconic, and well over 300 papers, as listed in the Appendices, some articles, particularly numerous book reviews, will not have been found.

I wish to thank the following for permission to reproduce figures: Mrs A. Mendell, Miss J. Gregory, The Geological Society, the Universities of Glasgow, Birmingham, Liverpool, Melbourne, Tasmania; University College London, the National Portrait Gallery, the British Geological Survey, and Colin Baxter Photography Ltd, Grantown-on-Spey, PH26 3NA as listed with each figure. I thank the William George Fearnside's Fund, of the Geological Society of London, for generously meeting the costs of printing colour figures.

Throughout: BA, British Association; GA, Geologists' Association; GH, The Glasgow Herald; GSG, Geological Society of Glasgow; GSL, Geological Society of London; HM, Hunterian Museum, University of Glasgow; IGC, International Geological Congress; IMM, Institute of Mining and Metallurgy; ODNB, The Oxford Dictionary of National Biography 2004; PGA, Proceedings of the Geologists' Association; RGS, Royal Geographical Society; RPSG, Royal Philosophical Society of Glasgow; RS, The Royal Society of London; TGSG, Transactions of the Geological Society of Glasgow.

Note that, throughout, interpolated comments by the author or explanations into quoted material are enclosed in [square brackets].