

# Walter Drowley Filmer

1865-1944

Physicist, Geologist, Botanist

Biologist & Zoologist



by Dulcie Hartley

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46 Turnbull Street : Fennell Bay: NSW : 2283 : Phone : 49 595375

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## WALTER DROWLEY FILMER

1865 – 1944



On the waterfront at Toronto on Lake Macquarie lived a remarkable man named Walter Drowley Filmer, known affectionately to many as 'Battery Bill' Filmer due to his interest and knowledge of electricity. The home the Filmer family was to occupy for many years at 135 Brighton Avenue was called Bundeel. WD Filmer was described as a *'physicist, geologist, botanist, biologist, and zoologist'*, with a love of nature and an understanding of its *'soil, rocks, insects, birds, fish, marsupials and its early inhabitants, the Australian Aboriginies'*.<sup>1</sup>



135 Brighton Ave Toronto

Over the years Walter built up a wonderful collection of insect and animal specimens, stuffed animals and birds, Aboriginal artefacts etc which were housed in a specially built museum at the front of his home. There were other oddments in the collection such as a trimming from the dress of Mary Queen of Scots souvenired at her execution. WD Filmer also owned a collection of ancient microscopes with one manufactured in 1790.<sup>2</sup> Many local residents visited the museum which was especially popular with children. Some older Toronto residents still remember their visits to the Museum as children where one penny admission was charged. As well many scientists, both local and from overseas came to WD Filmer's residence to view his collection.

Walter was the eighth son of a family of eleven children of William Filmer and Amy nee Hatton of Charring who had migrated to Australia from Kent soon after their marriage in 1849. The family lived initially in Sydney, and then moved to West Maitland in NSW where William opened a business as a seedsman. He was an authority on Botany and was sent to England by the Sydney Botanic Gardens to study trees suitable for Sydney Botanic Gardens.

W D Filmer was born in West Maitland on 1 September 1865 and his early scholastic career ended at eleven years of age, when he was apprenticed to a bootmaker. On completion of this apprenticeship he joined the Telephone Section of the Postal Department. By 1884 he was Assistant Telegraph Line Repairer, but he resigned the following year to take up a position in the Department of Railways.

In 1888 both Walter Drowley Filmer and his brother Ethelbert Septimus (Bert) became members of the prestigious Maitland Scientific Society.

Shortly afterwards, at the Annual Scientific Exhibition held at Newcastle School of Arts, both Walter and Bert were singled out as being of great assistance to the organisers of the exhibition. It was reported that both men played prominent roles in the work of the Society. The Maitland Scientific Society hosted a visit by Mr E David BA Government Geologist, who took members on a visit to Font Hill where many shell fossils were collected.<sup>3</sup> Filmer's interest in science began early as he was only 15 years of age when his father gave him his first microscope.<sup>4</sup>

In October of 1889 the Railway Commissioner was advertising for three cadets who would be sent to England at the Commissioner's expense to study the latest and best railway practices. WD Primer was a successful candidate and his field was Electrical Sciences. The tenure was to be of 12 months, with wages of £3 (\$6.00) per week, and he was required to send regular comprehensive reports to the Commissioner. Prior to departure the Signalmen of the Northern District gave Walter Filmer a send off on 6 January 1890 at the Islington School of Arts. Mr T Butterworth presided and all the Signal men from local stations were dressed in full uniform. There were many toasts and Filmer was wished God-speed.<sup>5</sup>

*Government Railways of New South Wales*  
*Secretary's Office*  
 Sydney. 3rd December 1889

Sir,

I am directed to inform you that the Railway Commissioners have approved of your being sent to England to gain information with regard to Electrical Science for a period of twelve months under the conditions set forth in printed paper.

You will be required to leave early in January.

I have the honor to be

Sir,

Your Obedient Servant

*W. J. ...*  
 Secretary.

Mr W D Filmer.

Railway Station.

West Maitland.

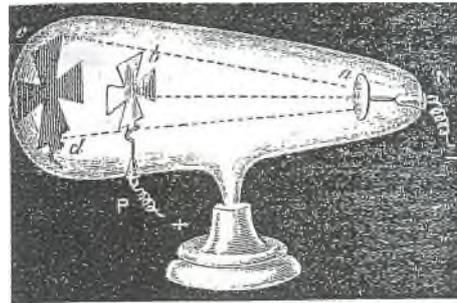
Filmer departed in early 1890 and, on arrival was seconded to the London firm of Edward Tyer and Company, Telegraph Engineers of Dalston. Whilst in London he stayed at the Tower of London where his an uncle, Mr Hart, held a senior position. Filmer was required to travel to Scotland and Wales to observe telegraph engineering in other cities. He was very busy during his stay, with lectures three nights each week, travelling all over the city during the day, notes to copy in the evening and monthly reports to write to the Commissioner in Australia. As well, on one occasion he was in charge of the Royal train from London to Edinburgh. In May of 1890 Walter was elected an Associate of the Institute of Electrical Engineers, (London). Whilst in England Walter not only acquired valuable experience, but also new equipment among which was a ten inch spark coil and a Crookes tube, both to be useful in later work.<sup>6</sup>

Walter enjoyed a good relationship with Mr Tyer and at the end of his tenure, was presented with a gold watch and chain valued at £52.10.0 (\$105), (a princely sum at the time), in recognition of his work carried out for the Tyer firm.<sup>7</sup>

On his return to Australia Walter married Miss Mary Ann Eli<sup>7a</sup> Chessel, a Maitland girl. The union was to produce four children, Walter Harold, Eric, Le Roy, and daughter Dagmar Elsie. Initially they lived at Summer Hill, Sydney, before moving to Church Street, Newcastle in 1893. At this time he was supervisor for the Department of Railways of all electrical appliances between Hornsby and the Queensland border. In 1898 the Filmer family moved from Newcastle to the Toronto waterfront at Lake Macquarie. There was a branch railway line from Fassifern to Toronto so Walter was able to commute to his employment.

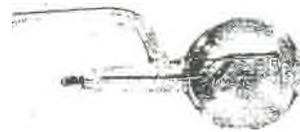
However,, in 1895, prior to the move to Toronto, news came from overseas of the discovery of an 'X' Ray machine. The discoverer was WK Roentgen, a German physicist, who was Professor of Physics at the University of Wurzburg in. Germany. While studying cathode rays, Roetgen found that when cathode rays impinged on the end of the evacuated tube in which they were produced, other rays were emitted. He soon identified the main properties of these mysterious new 'X' Rays, and above all, their extraordinary powers of penetration which led to use on the human body.<sup>8</sup> Within two days of the news reaching him, WD Filmer, with the use of his Crookes tube and coil, was able to make a picture, and a few days later made the first medical X Ray examination at Newcastle Hospital. A patient had a broken needle in his foot, and on request Filmer took his equipment to the Hospital and made a successful X Ray.

The brothers found that when running the X Ray tube with its anode earthed, the tube rejuvenated itself, but if the cathode was not earthed, the tube soon fatigued and would not function after a time. In 1896 Filmer, together with his brother Bert, were appointed Honorary Electricians to Newcastle Hospital. The Filmer X Ray equipment was used by the Hospital until September 1896 when new equipment was ordered. Walter published two papers in the '*Australian Technical Journal*' in 1897



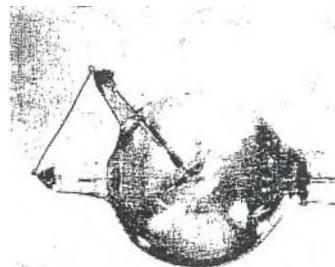
A

Crookes shadow tube as illustrated by Sir William Crookes in his lecture to the Royal Institution, April 4, 1879. This was the type of tube used by Filmer in the production of his first radiographs. (Reproduction of this figure is by courtesy of the Royal Institution.)



13

Tube used by Filmer. This tube was introduced in 1896 as the "Penetrator".



C

Tube used by Filmer. This tube was introduced towards the end of 1896.  
FIGURE 10.—Early X-ray tubes.

describing a method to increase the efficiency and safety of the apparatus. Walter continued as Honorary Electrician at Newcastle Hospital until 1910, providing advice on X Ray and electrical matter.<sup>9</sup>

About 1899 overseas reports began to come in of injuries received from X radiation and from early 1899 WD Filmer ceased to take part in practical X Ray work, apart from teaching demonstrations.

Dr Morris Owen wrote a biography of WD Filmer in which he presented a strong case for WD Filmer being the first person in Australia to produce X Ray films. A commemorative postage stamp was printed showing WD Filmer with two other scientists who were all connected with the early use of X Ray in Australia.



◀ This 1995 stamp commemorates the work of three Australians who experimented with x-rays in the 1890s.

▼ (left to right)  
 Father Joseph Slattery,  
 Sir Thomas Lyle, Walter Filmer.

During his subsequent career with the Railways WD Filmer continued his study of Chemistry, Mathematics, Biology and Photography at the Newcastle Technical College under John Pentecost. In 1909 he became a temporary lecturer at the College, teaching Electricity in Mining with classes at Newcastle, Minmi, West Wallsend, West Maitland, and Weston. He was appointed wireless engineer to the Mawson Expedition to the South Pole, but could not obtain a release from the Department of Railways. In 1913 he resigned from the Department to become a full time teacher of Physics and Applied Electricity at the Newcastle Technical College where he taught until his retirement in 1931.<sup>10</sup> In 1919 the Institute of Engineers of Australia was founded and WD Filmer was a foundation member.

On 22 May 1920 WD Filmer read a paper before the Newcastle Division of the Institution of Engineers. The subject, 'Notes on the Physiography of Lake Macquarie', contained information on tides at the entrance to Lake Macquarie, the effect of atmospheric pressure on levels in Lake Macquarie and specific gravity and solid contents of lake water at Toronto." This paper was the result of several years research by Filmer and was later useful when the RAAF Base was constructed at nearby Rathmines. Walter retired at 65 years of age, after which time he devoted himself to the scientific collection of insects, with particular relevance to spiders. During WW II Walter spent much time at the RAAF Base teaching service personnel Physics, almost up until the time of his death in 1944.<sup>12</sup>

In 1914 WD Filmer purchased a block of land in Toronto of over three acres from the Excelsior Land, Investment and Building Company and Bank Ltd. This was bounded by the then Beach Street (Jarrett Street), and a plant nursery was commenced named WD Filmer and Son. Walter's eldest son Harold managed

the nursery until 1926 when Walter transferred the property to Harold. The expertise of William Filmer, Walter's father, probably provided a sound background for this venture. Within one year after commencement a serpentine channel had been formed to provide permanent water and the nursery was fully established, with many plants for sale including 6000 stocks and 400 roses. Ill fortune was to befall this venture when the bushfires of January 1933 ravaged Toronto and district. The fire swept away the nursery and home of Harold Filmer. *The damage at the Filmer Nursery alone is estimated at £5000' (\$10000) and the nursery which 'housed an extremely valuable collection of palms and ferns, the collection of which Mr Filmer had devoted 30 years of hard work'* was destroyed. This was a great loss as the property was uninsured.<sup>13</sup>

Over the years the museum at Bundee' created great interest. In 1933 a reporter from the *Newcastle Morning Herald 86 Miners' Advocate,* wrote glowingly of Walter's prowess as a *'physicist, geologist, botanist, biologist' with a true love of his country and an intimate understanding of its soil, rocks, insects, birds, fishes, marsupials, and its early inhabitants, the Australian Aboriginals*'.<sup>14</sup>

Walter Filmer accompanied many scientific expeditions to the Barrier Reef and had a spectacular collection of coral in three large glass cases in his museum. There were also many fish specimens in bottles, with some rare fish from the Barrier Reef, including two colourful coral eels, a very predatory animal. These eels have a row of needle like teeth in the palate and once they secure a grip they rarely let go. As well there were many varieties of spiders in specimen bottles.

The collection also included snakes, lizards, Aboriginal axes and oyster openers, specimens of mineral stones, crabs, bird's nests and bird's eggs, and butterflies. An unusual item was a hippopotamus skull given to him by the captain of a sailing ship. There was also two pair of Aboriginal Kerditcha (Kadatchi) shoes made of emu feathers in a close network of human hair, looking like big woolly slippers. They are *'worn by a warrior who is selected to slay a particular member of another tribe, and they prevent the slayer being tracked by the avenger. When the killing has been carried out the Kerditcha shoes are burned'*, so possession in a private collection was very rare.<sup>15</sup>

Walter was recognised for his work on entomology and marine life. He carried out a great deal of research on parasites, the most outstanding success being in the discovery of a new family then unknown, Cestoda genera which was named 'Filmeric'. His collection of insects numbered many thousands, and was probably one of the finest privately owned.

In 1935 Dr Jiri Baum and Mrs Baum from the Zoological Branch Expedition of the Puaha Museum in Czechoslovakia, visited WD Filmer at Toronto. They were touring Australia in a caravan, collecting specimens of spiders and came to view the extensive Filmer collection. They selected a large number of Walter's specimens to exchange with the collection from the Puaha Museum. Dr Baum was the Assistant Curator of the Puaha Museum and a specialist in spiders, while Mrs Baum specialised in reptiles. Many unnamed species of spiders were discovered and named after WD Filmer and he made many gifts to museums and the Public Library.<sup>16</sup>

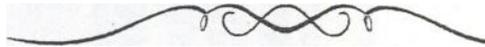
So during his latter years, WD Filmer spent a considerable time travelling and collecting specimens. During WWII he gave freely of his time during lectures at the Rathmines RAAF Base. In conclusion, Walter Drawley Filmer was a man who contributed greatly to the community and to science.



#### ADDENDUM

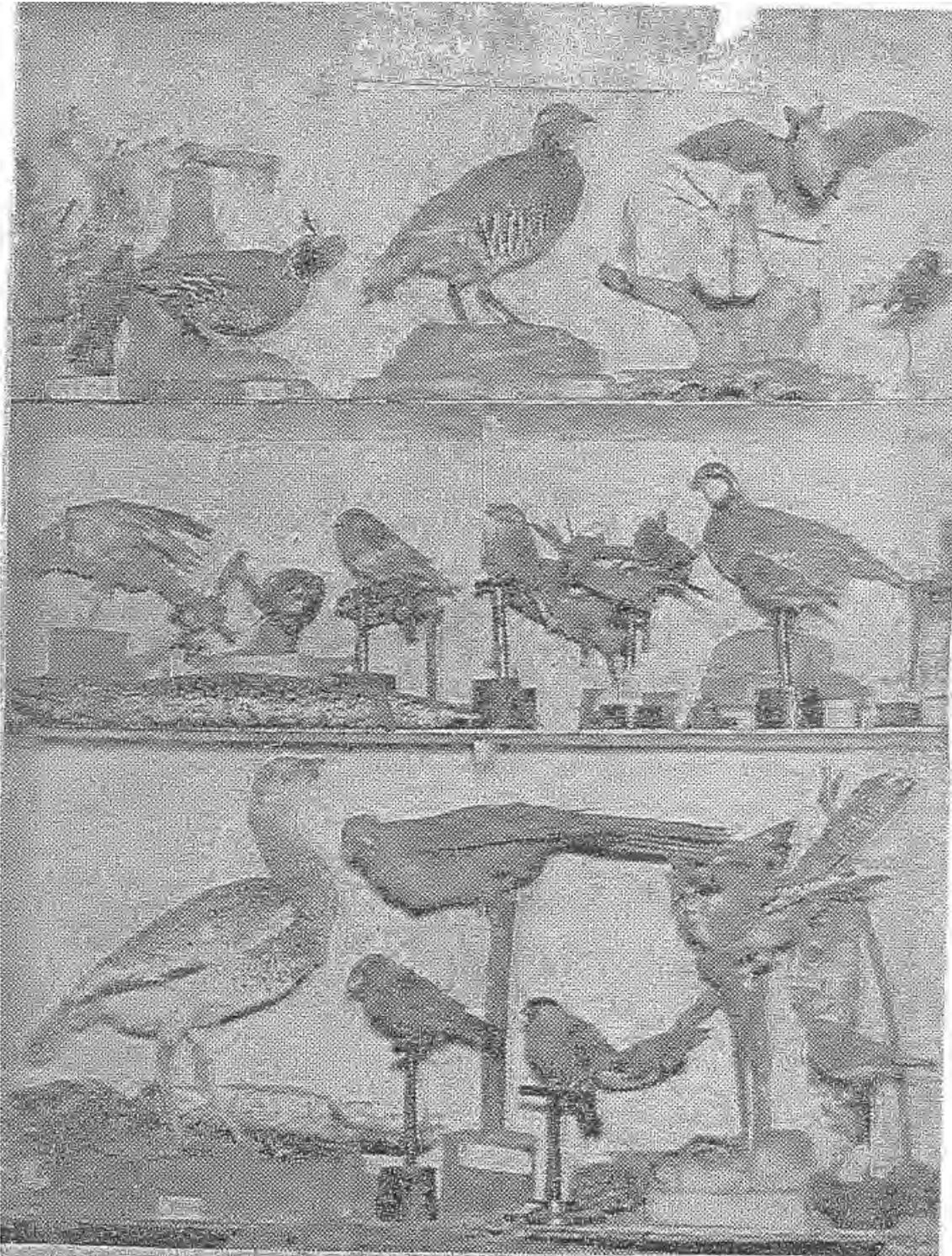
Megan Hicks, Curator of Health and Medical Instruments at the Powerhouse Museum in Sydney has advised that there are two X Ray tubes held at the Museum. Both are labelled 'First X Ray tube used in Newcastle — 1896'. It seems likely that these were part of the Walter Filmer collection.

As well, Dr Morris Owen is the custodian of the 'JP Trainor Archive Trust Radiology Historical Collection' in Sydney, and included in this is further information of WD Filmer.





*Filmer Collection*



Some of the birds and reptiles collected by Mr. Filmer.

**FOOT NOTES**

1. Newcastle Morning Herald & Miners' Advocate 10.6.1933
2. A Naturalist's Note Book No 11 - 13.12.1937 - 14.10.1939 Newcastle Regional Museum
3. Ibid
4. Op Cit 10.6.1933
5. A Naturalist's Note Book
6. Journal of the College of Radiologists of Australasia Vol IX No 1, February 1965 - Walter Drowley Filmer, 1865-1944 - Australian X-Ray Pioneer - Morris Owen MB, BS, DDR, MCRA, Newcastle NSW -NMH 86MA - 5.9.1944 -NMH 86MA - 6.11.65
7. A Naturalist's Note Book
8. Chronicle of the 20th Century - Chronicle 1990 p303
9. Op Cit - Dr Morris Owen
10. NMH 86MA - 5.9.1944
11. Notes on The Physiography of Lake Macquarie - WD Filmer - Read before the Newcastle Division Institute of Engineers, Australia 22 May 1920 - Newcastle Division of Engineers, Australia.Filmer family papers.
13. NMH 85 MA - 18.7.1913 - 12.1.1933
14. Ibid - 10.6.1933
15. Ibid
16. Op Cit Dr Morris Owen - NMH & MA 17.6.1935

**ACKNOWLEDGEMENTS**

I am greatly indebted to the article by Dr Owen Morris published in the Journal of the College of Radiologists Australasia Volume IX No 1 February 1965 - *Walter Drowley Filmer 1865 - 1944 - Australian X Ray Pioneer*. Illustrations on page 3 are copied from this article.

I wish to thank the Curator of Newcastle Regional Museum, David Wells, for allowing me access to archival material relating to Walter Drowley Filmer.

Dulcie Hartley

13.3.02



