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Our chemical cultural heritage

Macadam and Kirkland (1862–85)

PETRONELLA NEL

Macadam and Kirkland were two early figures in the history of Australian chemistry. They feature in an exhibition at the University of Melbourne.

In the November edition (p. 20), I provided an overview of the Chemistry Collection at the University of Melbourne, its significance and various projects I have been involved with that aim to make the collection available to the public. I hinted at how many of the items in the collection are associated with key figures in the history of chemistry and science not only at the University of Melbourne but also on national and international levels. These early teachers of chemistry are featured in an inaugural exhibition in the foyer of the Chemistry Building. Here I will focus on the early days, when chemistry was taught through the Medical School and the two main chemistry lecturers of this time: Macadam and Kirkland.



Figure 1. John Macadam. Image credit: State Library of Victoria.

John Macadam (1827–65)

Macadam was a Scottish-born analytical chemist, medical practitioner and politician. He arrived in Melbourne in 1855 to take up an appointment as lecturer in chemistry and natural science at Scotch College, a position he held until 1865. He was a friend of Ferdinand von Mueller, who in 1857 named the macadamia nut after him. He officiated as one of two umpires at one of the earliest recorded games of Australian Rules football, between Scotch College and Melbourne Grammar in 1858.

Macadam was appointed government analytical chemist in 1858 and health officer to the City of Melbourne in 1860. He represented Castlemaine in the Legislative Assembly between 1859 and 1864. Appointed secretary of the Royal Society of Victoria in 1860 and vice-president in 1863, he was also the secretary of the exploration committee of the Burke and Wills expedition. When the Medical School of the University of Melbourne opened in 1862, Macadam was appointed lecturer in chemistry. Just 3 years later, at the age of 38, he died at sea while on the way to give evidence at a murder trial in New Zealand. On the same voyage Macadam was accompanied by his assistant John Drummond Kirkland, a medical student (see below) (Russell 1974, Radford 1978).



Figure 2. John Drummond Kirkland. Image credit: School of Chemistry.

John Drummond Kirkland (c.1836–85)

Kirkland was born in Ireland, and trained as a chemical analyst through apprenticeship in a medical laboratory in Dublin, before migrating to Australia in 1852 and moving to Melbourne in 1855. While still an undergraduate medical student at the University of Melbourne, he was appointed lecturer in chemistry following the sudden death of John Macadam in 1865 (see above). Due to the enthusiastic support of his fellow students, this temporary role

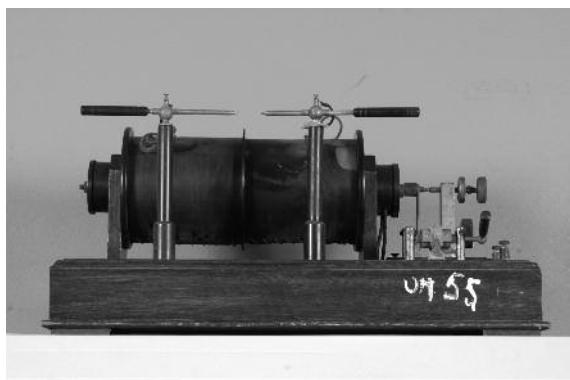


Figure 3. Induction coil, made by Cox Cavendish Electrical Co. Ltd, London (date unknown). Cat. no. 55, School of Chemistry Collection, University of Melbourne. Image credit: Petronella Nel.

became a permanent appointment the following year. Kirkland continued his studies, graduating in medicine in 1873 and surgery in 1880. His son, John Booth Kirkland, was appointed as his assistant in 1878. In 1882, John Drummond Kirkland became the University's first professor of chemistry and metallurgy, continuing until his death in 1885. Today's researchers use a high-performance computing facility named 'Kirkland' after the first Professor of Chemistry at the University of Melbourne.

Kirkland struggled to obtain university funding to buy new apparatus. To compensate, he bought much of the analytical chemistry equipment from his personal funds. The *induction coil* (Fig. 3) was used in chemistry lecture demonstrations. It is very similar to an induction coil that featured in an 1878 photograph of John Drummond Kirkland and his chemistry class (Fig. 4). Induction coils draw from a 6–12 V battery and generate a spark of many thousands of volts in the gap between the points of the two metal rods. This model could probably produce a spark over a 4-inch gap.

During Kirkland's career, chemistry was taught

Kirkland... bought much of the analytical chemistry equipment from his personal funds.



Figure 4. Professor Kirkland (seated front row, third from front left) and his chemistry class in about 1878, in the courtyard of the old medical building. Image credit: Anglo-Australasian Photographic Company. UMA/I/1235, University of Melbourne Archives.

through the Medical School. However, chemistry became part of the science degree in 1886, with the professorial appointment of David Orme Masson (to be featured in the February edition).

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