Our chemical cultural heritage

The University of Melbourne Chemistry Collection

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A University of Melbourne academic and objects conservator took up a fascinating opportunity when she assessed her alma mater's chemistry collection.

I did not even know that the School of Chemistry had a cultural heritage collection. So I was surprised when approached in November 2007 to conduct an audit of the Collection. Apparently it was being returned to the University of Melbourne, after a considerable stay at Scienceworks, which is now part of Museum Victoria. The audit involved 2 days of unpacking items from cardboard boxes and checking them against a spreadsheet inventory of the items. After delivering a report with various recommendations regarding the condition of the collection, I heard nothing more, until July 2008.

Returning the Chemistry Collection to its original home

Since its return to the University of Melbourne, the Chemistry Collection has been in the temporary care of the University of Melbourne Archives. It is intended that the collection will return to its original home, the School of Chemistry, where space is being prepared as part of major renovations that began in 2008. However, first the collection requires re-housing, conservation, detailed cataloguing and documentation. To begin this work, the Russell and Mab Grimwade Miegunyah Fund made a generous grant in 2009 to rehouse the most fragile items into archival-quality materials and boxes, thus ensuring their physical safety. It is most appropriate that a philanthropic trust founded by the bequests of an industrial chemist and his wife is providing funding to care for this historic collection.

This time I was approached by the School of Chemistry to undertake a 'Significance assessment'. This is a critical document, required by the University of Melbourne to determine whether the collection is of historical, scientific, aesthetic or social significance, and by the School of Chemistry in order to apply for funds and other support to preserve and develop the collection.

Significance assessment

History of the collection

In the 1970s, Dr Joan Radford, a member of the School of Chemistry from 1956 to 1980, developed an interest in the history of chemistry and the School of Chemistry in particular (McRae 2007). This resulted in a book *The Chemistry Department of the University of Melbourne: its contribution to Australian science 1854–1959*, published in 1978, which documented the school's history (Radford 1978). It was the knowledge Radford gained while researching the book that enabled her to recognise the cultural value of much of the redundant equipment in the chemistry store. She described the objects and their original uses and related them to the chemists who had worked in the department over the previous century. She then listed the collection in a card index and in 1980 organised for it to be placed on long-term loan with the Science Museum of Victoria, now part of Museum Victoria. In 2007, after 27 years of being located at Museum Victoria, the School of Chemistry Collection was returned to the university.

Description of the collection

The University of Melbourne's School of Chemistry Collection comprises more than 300 items, dating from the 1850s to the 1960s, which interpret the first century of teaching and research in chemistry at Melbourne. Items include bottles of chemicals, liquids and solutions; solids; balances; glassware; burners; apparatus associated with the measurement of heat, light, electricity and radiation, and the investigation of gases; paper-based materials; photographic film; slides; catalogues and lecture notes. Many of the items are of historical significance due to their association with key figures in the history of chemistry and science at the University of Melbourne, in Australia, and internationally.

Comparison with other university chemistry collections

So what is the significance of this chemistry collection? A survey of comparable collections undertaken as part of the significance assessment showed that chemistry exhibits are often found in physical science museums such as the Museum of Science in Boston and the Science Museum in London. Around the world, museums dedicated to chemistry can be found at the universities of Edinburgh, Dundee, St Andrews and Rome, at Kazan State University in Russia, and at the Hungarian Chemistry Museum. But this is not a large number; museums devoted to chemistry are relatively rare.

In Australia, numerous universities have a science and/or physics museum or collection. But of these, only two have a connection to the history of chemistry, and they are associated with universities that are younger than Melbourne: the Museum of the History of Science (established 1986) at the University of New South Wales (established 1949); and the Scientific Instrument Collection (established 1993) at Monash University (established 1958). Inquiries in 2008 by Professor Ian Rae (then RACI President) to various chemistry departments at the major universities in Australia revealed a tragic disintegration of chemistry collections and museums in Australian universities. There were tales of items being thrown out due to relocation into smaller buildings; items being given away to local fossickers or loaned to school teachers and alumni; remnants of formerly substantial collections being visible in a few display cases; and finally one science museum that was closed down completely. In light of this information, it would appear that Joan Radford had immense foresight when she decided to gather together and preserve the collection, and transfer it for safe-keeping to what is now Museum Victoria.

Film digitisation project

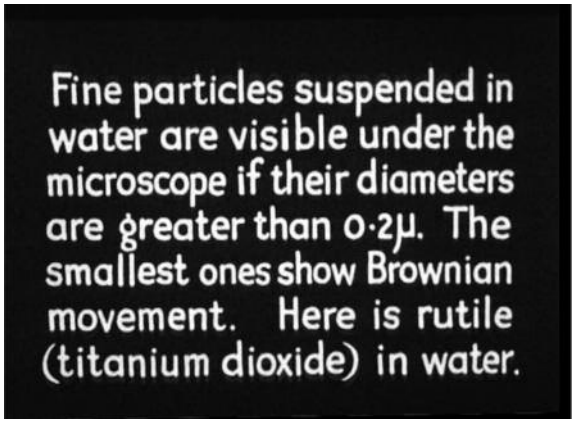
With the recent passing of Professor Ron Brown (foundation Professor of Chemistry at Monash University), Professor Ken Ghiggino (Masson Professor and Head of the School of Chemistry at the University of Melbourne) was approached by staff members at Monash University about the possibility of digitising cinematic film in the collection related to Professor Brown, and hence I was contacted. I found that the collection includes six complete reels of cinematic film and some incomplete reels and off-cuts. In November

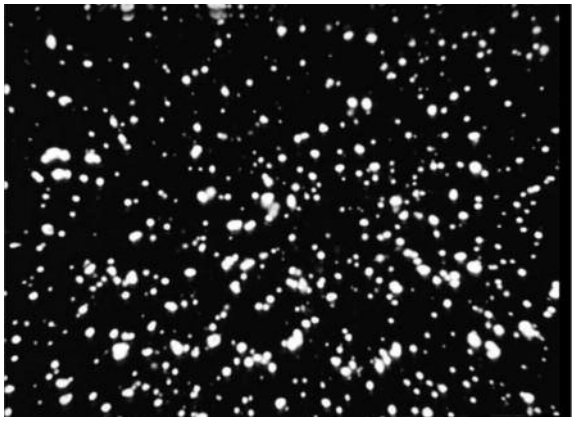
2008, this film was assessed for preservation and digitisation. There was some excitement when it was found that some of the film was based on cellulose nitrate, which poses many problems in collections. As the film deteriorates over time, it becomes difficult or impossible to view the image; the gases produced by the process of deterioration are corrosive and toxic to humans and can damage other collection items in the vicinity; and if the film does ignite it burns fiercely and is difficult to extinguish. An examination of the film reels at the National Film and Sound Archive determined which reels should be retained and which incomplete reels and off-cuts could be disposed of. The complete reels comprised two titles: 'Brownian motion', also called 'Colloids', made in 1934 by Ernst Hartung and Leonard William Weickhardt* (who became research director at ICI-ANZ and later Chancellor of the University of Melbourne 1972–8); and 'Semi-micro analysis' made in 1955 by Robert Craig, Thomas O'Donnell and Ron Brown during his time at Melbourne. The reels determined to be in the best condition were used for digital conversion. Thanks to the digitisation process, the content of these films can now be viewed and insight gained into the use of novel technologies by innovative lecturers such as Hartung to capture the imagination of the conference audience or the student. The 'Colloids' film (from which the uncaptioned negative images in this article are taken) was displayed on large plasma screens in the School of Chemistry on the evening of the ground-floor renovation celebrations in February.

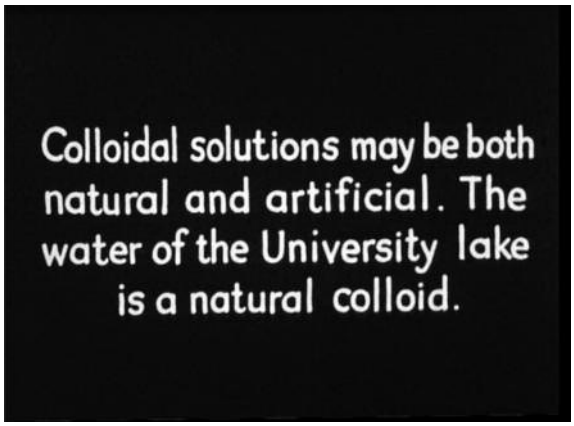
Michael Herrick examining a reel of film at the National Film and Sound Archive. Image credit: Petronella Nel.

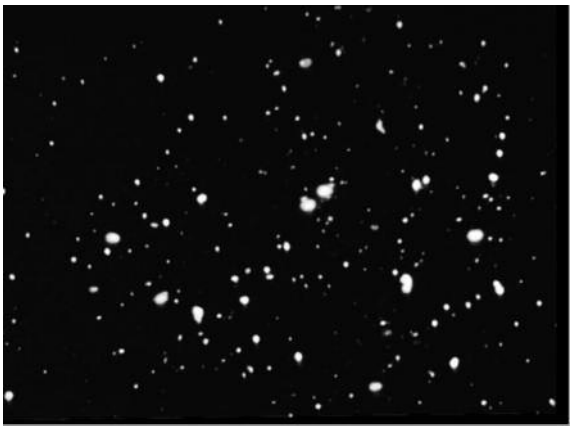
Inaugural exhibition

More recently, at the start of this year Professor Ghigino asked me to put together a small exhibit of items from the collection. As the timeframe was very tight, exhibits were selected on the basis of a list of key items already identified by Professor Ian Rae. Next the items had to be found, and their dimensions checked to ensure that they would fit into the display cases. Then an assessment was made of their condition to determine if they only needed minor conservation treatment to become fit for display. Thanks to some fantastic teamwork, especially from Dr Belinda Nemec and Mick Moylan, a small exhibition of the collection opened on









25 February 2009 as part of the School of Chemistry's celebrations on the completion of the ground-floor refurbishments. The exhibition featured photographs of and biographical information about the early professors of chemistry, and six key items from the first 100 years of chemistry research and teaching at the University of Melbourne. The exhibits can be viewed in the ground-floor foyer area of the main building. Aspects of the exhibition will be featured in future editions of *Chemistry in Australia*.

Reflection

Little did I know when I decided in 2004 to commence a 2-year full-time MA in Cultural Materials Conservation at the Centre for Cultural Materials Conservation at the University of Melbourne, that this knowledge would be required by the School of Chemistry for its very own Chemistry Collection. I have found the various projects associated with this collection absolutely fascinating. They have given me an insight into the cultural context of the School of Chemistry, which I most certainly did not have as an undergraduate and postgraduate student. I hope that this overview will provide the reader with a deeper appreciation of the historical roots of chemistry teaching and research in Australia.

Acknowledgments

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* Digitised by Digital Pictures, 22 December 2008 (School of Chemistry).

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