Made by Cox Cavendish Electrical Co. Ltd, London.
Cat. no. 55, School of Chemistry Collection, University of Melbourne.

This particular induction coil was used in chemistry lecture demonstrations at the University of Melbourne.

Induction coils can draw from a 6–12 volt battery and generate a spark of many thousands of volts. This model could probably produce a spark over a four-inch gap. Coarse, insulated copper wire is wrapped around a core of soft iron rods. An additional coil of fine copper wire is wound around the coarse wire coil.
In 1880 David Orme Masson was appointed to the University College of Bristol as an assistant to William Ramsay, one of England’s leading chemists. The two developed an enduring friendship. Masson was visiting England at the time of Ramsay’s announcement in 1895 of the new element, helium, for which—along with the discovery of the other noble gases—Ramsay received the 1904 Nobel Prize. Masson’s son Irvine Orme Masson later studied under Ramsay and was his last personal assistant.
Cleveite—a variety of uraninite with at least 10 per cent rare earth elements—is the mineral from which William Ramsay extracted helium in 1895. Helium formed via radioactive decay of uranium is trapped within Cleveite, but is released with the addition of acid.
Professor David Orme Masson’s significant contribution to teaching, research and administration is commemorated in the name of the main lecture theatre in the Chemistry Building.
THE BALANCE ROOM
‘...the balance is the most important instrument of the chemist and the basis of all quantitative chemical work...’ E.J. Hartung.

Small boxes of analytical weights similar to the example on display here are visible next to each balance.
SARTORIUS BALANCE

Made by F. Sartorius company, Gottingen, Germany, c.1907. Catalogue no. 7, School of Chemistry Collection, University of Melbourne.

This balance belonged to Gustav Ampt, considered one of Australia’s ablest analysts in his day. Ampt purchased the balance for £10 that he won in one of his final awards.

The balance has been an essential part of the chemist's equipment since the early 19th century, enabling the mass of a sample to be measured by comparison with standard masses.
SET OF ANALYTICAL MASSES

Made by Bosch, Jungingen, Germany, c.1924. Catalogue no.14a, School of Chemistry Collection.

While many balances came equipped with a set of standard masses, a good chemist would have his own set and would have internally calibrated them for precision. A traditional analytical balance would be used for masses in the range 0.1mg to about 100g. Such sets were in use until about 1960, when the Melbourne department switched over to modern balances with in-built standard masses against which the unknown could be compared.

This set ranges from 50g to 0.01g and was used by E.J. Hartung, renowned as an analytical chemist. Note the list of corrections made for each mass. Hartung scratched his initials on the lid.
WAR-TIME RESEARCH
Professor Hartung and Gustav Ampt examining one of the melts of glass in their work on optical glass, World War II. Reg. no. 158, Physics Museum Collection, University of Melbourne.

From 1940 the University of Melbourne became heavily involved in the production of optical glass (for use in gun-sights, telescopes, binoculars and the like), which under war-time conditions could not be obtained from either Britain or the USA. Professor Thomas Laby of the School of Physics led the project. Hartung’s team, which included Gustav Ampt, found that early attempts undertaken in Sydney were inadequate due to impurities in the silica sands of the melts and the clay of the firing pots. Hartung and Ampt’s chemical analysis and refinement of the raw materials overcame these problems.
OPTICAL GLASS

Experimental samples from the development of optical glass, 1942. Cat. no. 11, School of Chemistry Collection, University of Melbourne.

Numerous experimental batches were produced in the process of perfecting the glass. Manufacturing details were not available to Australian industry because European producers guarded their secrets closely, even during peace times, for commercial reasons.