

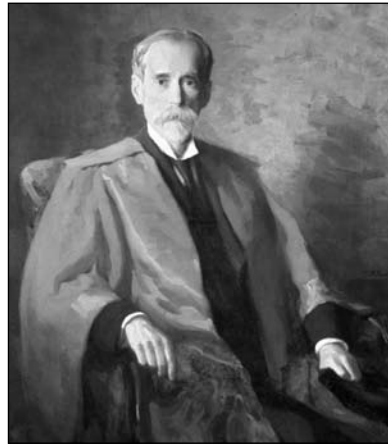
## Sir Thomas Richard Fraser (1841–1920)

Thomas Richard Fraser was one of the 'Big Five' of Edinburgh medicine as they were called at the turn of the nineteenth and twentieth centuries, and the last one to die. (Sir Douglas Maclagan had retired in 1897 dying in 1900, Sir Thomas Grainger Stewart died in 1900, Sir Alexander Simpson retired in 1905 dying in 1916 and Professor William Smith Greenfield died in 1919.) Fraser had been born in Calcutta as it was then called, and educated at public schools in Scotland before attending the University of Edinburgh, where he developed a lifelong fascination with pharmacology.

In the middle of the nineteenth century much interest was aroused by reports on *Physostigma venenosum* from missionaries and colonial officials working in southeast Nigeria. Its more common name, 'the ordeal bean of Calabar', perhaps explains why: it was used by the natives to prove or disprove the guilt of those charged with serious crimes. If the extract, physostigmine, induced vomiting without causing death the accused was deemed to be innocent. If death ensued, it proved the accused's guilt.

Robert Christison, Professor of Materia Medica at Edinburgh University (and RCPE President 1838–40 and 1846–48), the doyen of pharmacologists, proposed that physostigmine be used in the UK for a humane execution of the condemned.

Argyll Robertson, the pioneering eye surgeon in Edinburgh, recognised the extract's potential uses in ophthalmology (to be followed a few years later by his tutor in Berlin, Albrecht von Gräfe), but it was Thomas Richard Fraser whose name will, rightly, always be most associated with the early scientific study of physostigmine.



Portrait of Thomas Fraser by Edinburgh painter Thomas Martine Ronaldson.

It formed the basis of his brilliant Edinburgh MD thesis of 1862, which was awarded a gold medal: *On the characters, actions, and therapeutic uses of the ordeal bean of Calabar (Physostigma venenosum)*. For some time there was a dispute whether credit for discovering the actions and potential uses of physostigmine should go to Robertson or Fraser. In fact, Robertson tells of being alerted to them by Fraser who was working on them long before Robertson, although his paper was published a few weeks after Robertson's.

This was the beginning of an outstanding and influential career in pharmacology. Working closely with Professor Alexander Crum Brown, Fraser defined the relation between the chemical and physiological action of drugs as well as carrying out pioneering research on the antagonists of poisons. His papers examined subjects such as arrow and snake poisons and immunity. Much of this work was reported in lectures to the College and subsequently published in the *British Medical Journal* or the *Journal of Anatomy and Physiology* in 1868–69.

In 1874 Fraser somewhat unexpectedly took up the position of Medical Officer for Health for

Mid-Cheshire. He continued to lecture in both London and Edinburgh until 1877, when he was appointed, with much acclaim, successor to Christison, the 'father' of materia medica and Fraser's mentor in Edinburgh. In the following year he was also made Professor of Clinical Medicine, and held both posts until his retirement in 1917.

A natural leader, Fraser served as Dean of the Faculty of Medicine at Edinburgh University, sat on the University Court and on the General Medical Council and was President of the College from 1900 to 1902, during which time he chaired the Indian Plague Commission. For this particular work he was knighted in 1902.

Fraser was President of the Association of Physicians of Great Britain and Ireland (1908–09) and from 1907 was honorary Physician in Ordinary to the King in Scotland. He received honorary LL.D degrees from the universities of Aberdeen, Edinburgh and Glasgow, an honorary Sc.D from Cambridge and an honorary MD from Dublin as well as numerous overseas honours. He was a Fellow of both the Royal Society of London and the Royal Society of Edinburgh.

Surprisingly, Fraser occasionally found time for fishing, shooting and photography. Of his 11 children (eight sons and three daughters), one son became Professor of Medicine in London.

### Derek Doyle

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### Further reading

- Proudfoot A. The early toxicology of physostigmine: a tale of beans, great men and egos. *Toxicol Rev* 2006; 25:99–138.
- Obituary: Sir Thomas Richard Fraser. *Br Med J* 1920; 1:100–1.
- Obituary: Sir Thomas Richard Fraser. *Edinb Med J* 1920; 24: 125–6.