Slide Rules

Logarithms had a practical purpose in calculation, but might still be classed as belonging to ‘pure’ mathematics, their physical manifestation a set of printed tables. But renaissance mathematicians were fond of translating their ideas into instruments, as the collections of this museum demonstrate. Within a few years of Napier’s invention the Oxford mathematician and inventor Edmund Gunter (1581-1626) had introduced a logarithmic scale or ‘line’ to his navigator’s calculating scale. In 1632 the instrument maker Elias Allen made a large circular instrument designed by William Oughtred (1575-1660), called the ‘circles of proportion’ (displayed elsewhere in this museum), which was effectively a circular slide rule. It was also Oughtred who, at the same time, first improvised a linear instrument consisting of two of Gunter’s logarithmic scales sliding together, or with a sliding scale between them. For 350 years this latter form of slide rule, using logarithms to aid multiplication, division, and certain specialised calculations, was the most typical and essential instrument in mathematical calculation, its users ranging from humble schoolchildren to top engineers. A selection of slide rules dating from 1737 to about 1960 is shown here; others can be seen in the nearby special exhibition ‘Geek is Good’.

■ Boxwood simple slide rule, in a heavily decorated leather slip-case dated ‘ANO 1737’. Lewis Evans Collection. Inv.no.43974.

■ Boxwood and ivory six-scale slide rule, including two sliders and inch ruler, marked ‘The Ich Dien Rule’ and ‘Arranged by S. Waddington Barnsley’, 19th century. Lewis Evans Collection. Inv.no.52599.

■ Boxwood slide rule by ‘Stanley Great Turnstile Holborn London’, standard logarithmic scales on the sliding side and on the back a conversion scale of inches and centimetres devised by E. M. Nelson, 1894. Inv.no.52108.

■ Two white plastic ‘Aristo Multilog’ slide rules, the common 6-inch and a sophisticated 13-inch, in leather pouch and grey card slip-case respectively, by Dennert & Pape, Hamburg, the large one having an additional separate logarithmic scale dated 1958. Whillock Collection. Part of inv.no.13436.

Circular Slide Rule

Until electronic pocket calculators nothing could oust the straight slide rule as the iconic instrument of mathematics. But the circular format, revived in the 20th century, also became very popular.

■ Plastic, chrome, and steel circular slide rule marked ‘Fowler’s Patent Long Scale Calculator “Magnum” Fowler & Co. Manchester’, in sturdy leather pouch, mid 20th century. Inv.no.34185.

Napier’s Bones

An instrument for calculation invented by Napier himself was the ‘rods’, usually called ‘Napier’s bones’, essentially a three-dimensional ready-reckoner table (not logarithmic). Less enduring than the slide rule, it is surprising to find it revived in the late 19th century, perhaps because of the spread of education at that time. Its quaint, puzzle-like fascination combined with the growing interest in mathematical antiques to inspire the replica produced in 1992, with instruction book by David Bryden.

■ Napier’s rods in boxwood, held in a tray within a neat wooden slip-case, typical of the 18th and early 19th century form. Inv.no.17509.

■ Flat paper version of Napier’s rods, held in a wooden frame within a card slip-case, with printed paper label and instruction leaflet: ‘Table of Napier ... published by Joseph Blater ... London, Trübner& Co. ... 1888’. Lewis Evans Collection. Inv.no.54381.

■ Reproduction wooden Napier’s rods by ‘Harriet Wynter, London. 1992 11/100’ (a limited edition). Inv.no.24415.