

Aspects of Scientific Enterprise in Victorian Toronto

By William J. Daniels, O.L.S.

To most general observers and participants of the antiques market place, instruments of science is an area of esoterica, often shunned because of the mechanical nature of the objects. But over the past decade there has been a steady and worldwide growth in this area of antiquarian collecting.

In 1983, the Scientific Instrument Society was founded in London with the aim "to contribute to historical knowledge and understanding through the collection, conservation and study of scientific artifacts." The 1980s saw the publication of a profusion of books devoted to the history of instruments from nearly every branch of the sciences; previously there was scant reference material for the collector.

On September 29, 1988, a 16th century planispheric astrolabe by the important maker, Walter Arsenius, sold for the equivalent of \$660,000 U.S., establishing a world record for any scientific instrument. A sure sign of the growing interest in antiquarian instruments is the appearance, particularly in Europe, of a number of fakes of early and rare instruments. In some cases the instrument in total is a modern creation, while in other instances an unsigned early piece has been enhanced by the addition of the signature of an important maker of the period. Recently, at home, eyebrows have been raised at auctions and shows as scarce Toronto-signed 19th century instruments brought prices two to three times those of comparable British and American pieces.

Throughout Toronto's Victorian period there was a small group of skilled craftsmen known as "mathematical instrument makers" who retailed both home-manufactured and imported English instruments. These instruments were broadly classified as "philosophical" (globes, orreries, air pumps,

barometers, thermometers, hydrometers, etc.) "optical" (telescopes, microscopes, magic lanterns, spectacles, etc.) and "mathematical" (surveyor's compasses, transits, theodolites, levels, drafting instruments, etc.) Although these terms remained in use until the early part of the present century, the wide range of instruments offered by the last quarter of the 19th century defied easy classification.

The mathematical instrument maker worked in soft metals (brass and silver), was a skilled machinist and engraver, adept at both linear and circular scale division and had served a regular apprenticeship (generally seven years) with a master. Since the instrument makers were generally purveyors of spectacles, eyeglasses and other optical goods they were often listed in the city directories under "Opticians," a title, which carried a quasi-medical air of respectability. The more successful makers carried on their trade from shops located along King Street, Toronto's main commercial thoroughfare.

Prior to the 1840s, before the arrival of the first professional instrument makers, local clockmakers were sometimes called upon to make or repair instruments for surveyors and others. The Town of York's pioneer clockmaker, Jordan Post (1767-1845), can be said to have been the City of Toronto's first maker of scientific instruments, since the clock was the most complex mechanism then in common use. Three surviving examples of Post's brass movement 8-day tall clocks are known to the writer, one of which, can be dated circa 1805 and is arguably the first clock made in Toronto.

Casual observers have generally discounted the possibility that complex instruments of high quality of workmanship such as microscopes, theodolites and the like could have been manufac-

tured here. To be sure, a great number of the instruments retailed by the Toronto opticians were imported from the well-known London houses of Dollond, Troughton & Simms and others. The addition of the local retailer's name to such a piece was not an attempt to disguise its origin; in fact, imports were prominently advertised. English products were still considered to be the finest in the world and Toronto by the mid-19th century was a thoroughly British city. The aforementioned doubters feel their skepticism reinforced upon viewing Toronto-signed and made instruments which look so very English; however, it would truly be surprising were the products to appear otherwise, since the principal makers were English-born and trained and employed English tools, machines, methods and designs. Over a decade of researching Toronto instrument makers allows the writer to state that a good many instruments were locally manufactured. The market for their products included professionals such as architects, civil engineers, land surveyors, geologists and doctors, institutions, government departments and gentlemen of science.

In 1843, Toronto's pioneer optician and mathematical instrument maker, J.G. Joseph (1798-1857) arrived in the city and opened a shop on the north side of King Street East at James Lesslie's "Printer's Hall." In 1845, the business was re-located to the newly opened and prestigious "Victoria Row" on the south side of King Street East just west of Church Street. At his death in 1857, Joseph's estate was valued at \$47,000, a huge sum for the time. His business success was founded not on instrument making, but rather the allied trades of silversmith, jeweller and watchmaker. Joseph's untimely death was much lamented, as he was one of the most

popular figures in the community. He is remembered today as one of Toronto's first permanent Jewish residents, who along with Abraham Nordheimer established the first Jewish burial ground in Toronto (Holy Blossom Cemetery). Only four signed artifacts by Joseph are known to the writer.

The next maker of note was the firm Hearn & Potter, a short-lived (1853-1857) partnership between the Englishmen William Hearn and Charles Potter. Undaunted by competition they located adjacent to Joseph's shop in Victoria Row. Only three signed instruments are known to the writer.

Following the dissolution of the Hearn & Potter firm, Charles Potter (1831-1899) and his younger brother, Augustus Frederick (1833-?) had a brief working arrangement until they parted on less than amicable terms in 1860, each to carry on under his own name. After A.F. Potter's return to London in 1865, Charles Potter became the principal retailer of scientific instruments in the city (and possibly in the country). As supplier to the Province's Educational Department, Charles Potter provided a large number of globes, orreries, tellurians, chemistry sets and so forth over a long period of time, and yet nary a single signed example is known.


The remaining 19th century maker of note, James Foster (1830-1912), was a native son. Born in Toronto in 1830 to parents recently arrived from County Monaghan, Ireland, his father died soon after, possibly a victim of the cholera

epidemic of 1832. A bright youngster, Foster's mother struggled to ensure that he received a good education. At age sixteen he apprenticed to Toronto instrument maker, T.B. Timpson (1811-1888), and by 1854 had opened his own shop on Osgoode. For nearly twenty years Foster manufactured telegraphic instruments for Montreal Telegraph Company. By 1873 he moved to larger premises on Colborne Street and commenced the manufacture of surveying and engineering instruments. An interesting surviving Foster instrument, a surveyor's compass (lacking its plate bubbles and tangent screw assembly) was found hidden inside a wall of a house torn down in Albion Township.

During the last quarter of the last century, makers like Potter and Foster were no longer able to compete with large English and American firms in the manufacture of surveying and engineering instruments. Although both men continued to produce a limited number of specialized instruments, their trade by the close of the century was essentially the retailing of imported goods. Their passing from the Toronto scene coincided with the end of the Victorian period.

In terms of survival, surveying instruments have fared better than instruments of

other disciplines. In form and function there were no major changes in transits and theodolites throughout the Victorian period, and the writer knows of several mid-19th century pieces that were still being used into the 1930s. Such instruments often became treasured family heirlooms while instruments such as globes, tellurians, etc. that were produced for governments and institutions became obsolete and were apparently discarded.

Ontario dealers whose trade is largely or exclusively devoted to scientific instruments are Duncan Roberts Antiques of Mississauga, Paul Murray Antiques of Kitchener, Digswell House of Warkworth and Exploration House of Toronto. 

William J. Daniels, OLS specializes in historical research and is an avid collector of antiquarian scientific instruments. He has researched Canadian instrument makers for many years. He can be reached at **416-766-6877**.



Brass circumferentor bearing the signature of Charles Potter, ca. 1870 that is on loan to the Educational Foundation from the AOLS Archives Committee. See the article in the Educational Foundation News on page 14.

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