

This Month in Moravian History

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The 1770 Electricity Machine

The 1770 ledger of the Single Brothers' House in Bethlehem lists expenses for an unusual object: an electricity machine. More than a century before electric light was introduced to Bethlehem, the men in the Brothers' House were already experimenting with electricity. Another surprising discovery was to learn that the electricity machine survived and is now part of the collections of the Moravian Historical Society in Nazareth, Pa.

Experiments with electricity were popular during the eighteenth century. Benjamin Franklin, for example, had a great interest in electricity. The Bethlehem electricity machine is an example of a device capable of generating static electricity by rubbing a leather cushion against glass. By rotating a glass cylinder while rubbing a leather-covered cushion onto the glass, static electricity was generated and transferred to a brass box.

The electricity machine was built during the spring of 1770. The contributing craftsmen are listed in the ledger: wood turner Johann Bechtel made the wooden parts, locksmith Daniel Kliest made an iron rod, and Anton Schmidt made the crank and an iron chain. The glass cylinder was probably purchased elsewhere. At the beginning of the following year more expenses are listed: four brass boxes, two glass cylinders, and a wheel. Possibly these were replacement parts.

It seems likely the idea for the machine came from Johann Arbo (1713-1772). Arbo was warden of the single brothers and oversaw all activities in the choir house. Arbo had a great interest in a variety of topics: his library contained many books on history and science. In 1768 he became a member of the American Philosophical Society of Philadelphia. Under his leadership an oil mill was built in Bethlehem where Moravians experimented with new production methods.

What were Arbo's intentions with the electricity machine? The total costs of £8 were paid from the funds of the single brothers' choir so it seems unlikely the machine was used simply for amusement or for scientific experimentation. Perhaps the

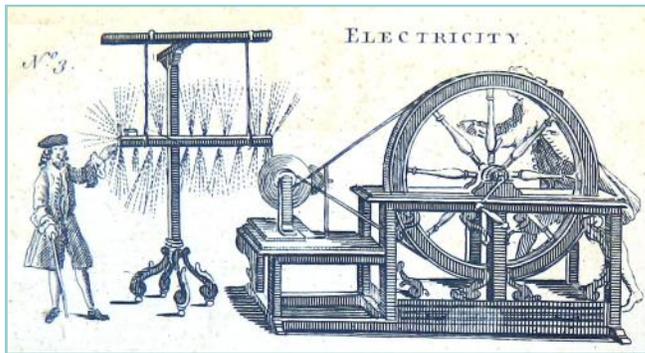
machine was intended for medical purposes? This could explain an expense in November of 1770 for seven yards of canvas "for a screen"; the

person to be treated possibly stood behind this screen. Arbo owned various books mentioning the medicinal effects of electricity on patients. His copy of the *New and Complete Dictionary of Arts and Sciences* (1763) states: "In effect, we meet with some cures performed in paralytic cases, by the force of electricity."

There are, however, no reports confirming this electricity machine was ever used for medical purposes. In fact, the ledger does not show any expenses nor any income for the machine after May of 1771.

The reason for this lack of activity could have been Arbo's death on December 7, 1772.

For some years, the machine was used to demonstrate the qualities of electricity to the boys in the Moravian school. We know this from the list of "curiosities" on display at the museum of the Young Men's Missionary Society, stating "An ancient electric machine formerly used in the College." This museum existed in Bethlehem from 1840 until its dissolution in 1918 when most of its collection, including the 1770 electricity machine, was given to the Moravian Historical Society. The electricity machine is currently on display at the Whitefield House Museum in Nazareth.



Sources

Images: engraving from *New and Complete Dictionary of Arts and Sciences* (1763); the 1770 electricity machine on display at the Whitefield House in Nazareth, Pa. Sources: Ledger of the single brothers, Bethlehem, 1769-72; records of the Young Men's Missionary Society, Bethlehem.