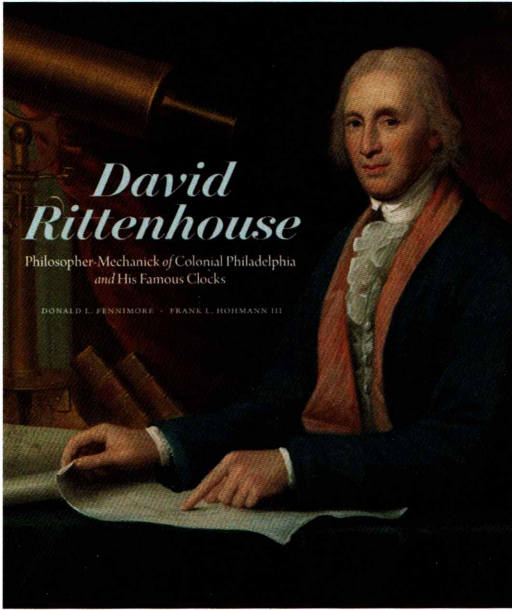


Book reviews



Donald L. Fennimore and Frank L. Hohmann III, *David Rittenhouse: Philosopher-Mechanic of Colonial Philadelphia and His Famous Clocks*. Winterthur Book, 2023, 272 pages, 365 color illustrations, distributed by Yale University Press, \$75.00.

‘Do we really need yet another book about David Rittenhouse?’ ask the co-authors – an emeritus curator partnered with an erudite collector of early American timekeepers. Despite many other scholars’ books and articles dating back two centuries, their answer is yes: an in-depth focus on his clockmaking is new and necessary.

David Rittenhouse (1732–1796) was lauded internationally as an astronomer, mathematician, scientist, and public servant. But as a self-taught artisan, he first earned his living and reputation by crafting domestic clocks, orrery clocks, and more complicated orreries that replicated the motions of the heavens.

However, this book is not solely about Rittenhouse machines. Only on page eighty-three do the authors turn from well-researched history and biography to specifics about the clocks and instruments made by David and his younger brother Benjamin (1740–1825).

The book’s Catalogue highlights twenty clocks – ten by each brother – from sixty-

seven examined and believed to be genuine. As they studied, the authors realized that the famous Rittenhouse name adorned more clocks than the brothers ever made. After the 1876 American Centennial, ‘Rittenhouse’ clocks proliferated, often created by renaming similar Pennsylvania clocks on dial bosses and signature plates.

At the 2016 ‘Clocks at Winterthur’ symposium I organized (see www.clocksatwinterthur.com), the late Jeffrey Lock, specialist in engraving and restorer of Rittenhouse instruments, spoke about assessing Rittenhouse signatures. His assertions, controversial and unpopular with owners of questionable clocks, were convincing but did not address dials done by professional engravers employed by the Rittenhouses. However, signatures were judged spurious if they had improper scripts, spellings, or abbreviations. An archaic long ‘s’, looking like an ‘f’, also was judged evidence of fakery.

David may best be known for two large orreries and two longcase clocks with moving models of the solar system. In 1767 he read descriptions of Benjamin Martin’s orreries and rightly claimed that his machines would be more complex and useful. For example, his orreries showed planetary orbits from five thousand years in the past to five thousand years into the future.

The two clocks stand in Philadelphia at Drexel University and Pennsylvania Hospital. The large hand-cranked vertical orreries – intended for classroom instruction – are at the University of Pennsylvania and Princeton University, although the latter is incomplete. David considered powering these with clockwork but concluded that movements of turret-clock size would have been required.

Both brothers produced precise surveying instruments to serve America’s population as it expanded ever westward. David used his instruments during arduous surveying of contentious state boundaries. He also made thermometers, barometers, theodolites, hygrometers, vernier compasses that he invented, and a pair of spectacles for American hero George Washington.

David’s astronomical regulator, housed in a plain pine case, was built for his observations of the 1769 Transit of Venus

and featured an innovative pendulum with mercury temperature compensation. A second astronomical timepiece from 1789 used a gridiron pendulum with knife-edge suspension in an agate anvil, and oddly had a dial with a second unused winding hole that otherwise would have accessed a strike train.

The authors avoid the issue of British sourcing of parts and movements by Colonial and Federal clockmakers, instead implying that every bit and piece came from Rittenhouses' workshops. While the engraved sheet dials were produced locally, their clocks' composite brass dials most likely were English and were easily purchased from Philadelphia's importing merchants. The brothers had no good reasons to learn and practice the tedious fabrication of dial plates, lined and numbered chapter rings, and cast spandrels to make ones clearly identical to the imports.

The Catalogue features two of Benjamin's table clocks. The cases, dials, and engravings are American, but Benjamin probably had no desire or expertise to fabricate fuseses and chains, mainspring barrels, or springs. In the two spring-powered clocks, these parts compare exactly to standard English products. If he had the necessary costly equipment, he would have used it for more than two movements. English components were purchased, finished, and assembled locally and offered less-expensive alternatives to complete London wooden-cased clocks landing after damp and rough journeys across the Atlantic. The movement of a table clock signed by Edward Duffield, a Philadelphia contemporary, was stamped by London clockmaker Thomas Best.

The many publications about David Rittenhouse already confirmed him as one of the most important Enlightenment Americans. President Thomas Jefferson equated his greatness with Benjamin Franklin's and George Washington's. The authors, who previously gave us important books on Colonial American clockmakers Stretch and Claggett,* have made the Rittenhouse story even more compelling and complete.

Bob Frishman

*Editor's note: reviewed in *AH* June 2014, 846–8, and in *AH* December 2018, 550–2.