MR4812852 01A45

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★**Mathematical businesses: seventeenth-century practitioners and their academic friends.**

Beyond the learned academy—the practice of mathematics, 1600–1850, 272–311, *Oxford Univ. Press*, *Oxford*, [2024],

This article is an engrossing and well-documented study of the English mathematician John Collins's interactions with his scientific contemporaries. Collins was an indefatigable correspondent of English and foreign mathematicians who communicated new results to researchers. He was active in promoting the publication of books and had close relations with London book sellers. He was knowledgeable about navigational instruments and gauging methods and connected the work of skilled craftsmen and mathematicians. Another field of expertise was related to his job in the Excise Office and concerned accounting and questions related to compound interest. Finally, Collins was a capable mathematician in his own right who posed problems to colleagues and commented on their work.

In 1659 Collins published *Geometrical dyalling*, a book on the mathematical design of sundials. The interesting frontispiece to this book is reproduced in the article, showing some of the illustrations supplied by instrument maker Henry Sutton for the book. In the same year he published a book on navigation. His circle of correspondents and friends included Barrow, Newton, Wallis, Gregory, Pell, mathematicians on the Continent, members of the Royal Society, leading astronomers and astrologers, and prominent London instrument makers and book sellers. In 1667 he was elected a fellow of the Royal Society, an honour that solidified his place within contemporary English mathematical science.

At age 16 Collins took up an apprenticeship to a book seller in Oxford. As a young man he spent seven years aboard a British merchant ship in the eastern Mediterranean, assisting the Republic of Venice in its conflict with the Ottomans. During these years he read books on science and acquired mathematical skills. Beeley (p. 307) writes of "a deeply rooted tension in Collins's character between his humble origins and his scientific aspirations". In a letter to Gregory he wrote (p. 306) "I have not been educated at Universities, and so my attainments are meane, yet I have an ardent love to these Studies."

Sections of the article are devoted to Collins as a publishing agent and to his interactions with Pell, Wallis and Newton. Other figures of note who arise in the narrative are the mathematical astronomer Samuel Foster and the astrologer John Gadbury. There are numerous excerpts from original letters. A wealth of detail is uncovered accompanied by observations about the scientific milieu. In one section we learn about Collins's mentorship of another outsider, Michael Dary, the latter a tobacco-cutter, gauger of the excise and aspiring mathematician. In 1674 Dary published the pamphlet *A tale of a tub* explaining methods he had devised to determine the volumes of casks and vats. He also corresponded with Newton and Gregory on the subject of polynomial equations.

A theme touched on in the article is Collins's desire to see England and Scotland assert their rightful place in the international world of science. He encouraged colleagues such as Wallis, Barrow, Gregory and Newton as well as others to commit their work to print and did everything in his power to make this happen. Collins also supported the publication of books in English, drawing attention to the Royal Society's goal (p. 309) "to promote and encourage the printing of Mathematicks and other bookes of Art in our owne tounge". A book by Thomas Baker on algebra was published in Latin with the

English translation on facing pages. Collins supported Wallis in publishing his *Treatise of algebra* in English. *Craig G. Fraser*