BSHM Christmas Meeting: Programme & Book of Abstracts

7th December 2024
Online

11.00 Welcome

11.10 Xiaofei Wang (Chinese Academy of Sciences)
Joseph Fourier's Teaching of Analysis at the École Polytechnique: A Study Based on Unpublished Manuscripts

11.50 Nina Engelhardt (University of Stuttgart)
'I don't care much whether I ever get to know anything – but I want to work out something in figures': Mathematics in Virginia Woolf's Novels and her Formalist Aesthetic

12.30 Comfort Break

12.40 AGM (for BSHM members only)

14.10 S. Prashant Kumar (University of Chicago)
"A Newton Among the Brahmins": The History of Calculus and the Invention of the Kerala School of Mathematics

14.50 Sian Zelbo (Columbia University)
Edgar J. Edmunds: The Mathematics Teacher Who Challenged the White Supremacist Movement in Post-Civil War New Orleans

15.30 Break

15.45 Stephen Stigler (University of Chicago)
Casanova's Lottery and the History of Mathematics

16.25 Closing remarks

16.30 End of Meeting

Abstracts

Nina Engelhardt, University of Stuttgart

'I don't care much whether I ever get to know anything – but I want to work out something in figures': Mathematics in Virginia Woolf's Novels and her Formalist Aesthetic

This paper examines the place of mathematics in Virginia Woolf's conception and practice of formalist literature, tracing her engagement with mathematics in her early novel Night and Day (1919) and her later work To the Lighthouse (1927). The names of protagonists Katharine Hilbery and the Ramsay family suggest Woolf's interest in mathematicians such as David Hilbert and Frank Ramsey, the latter being a member of the Cambridge Apostles and closely associated with figures in the Bloomsbury Group, to which Woolf herself belonged. Woolf's novels draw on concrete mathematical forms such as the triangle, yet, more importantly, they explore the affordances of mathematics as a formal science and take inspiration for Woolf's own formalist literary experimentations.

S. Prashant Kumar, University of Chicago

"A Newton Among the Brahmins": The History of Calculus and the Invention of the Kerala School of Mathematics

In this paper, I will examine the origins of the claim that Sanskrit mathematicians had a form of calculus, invented possibly earlier than Newton's. First articulated by John Playfair in 1790, initial Company attempts to recover texts from across the Ganges valley and the Decca plateau turned up algebra but no calculus. The claim remained dormant, until an 1834 paper published by Charles M. Whish, of the Madras Civil Service. The paper contained, according to Augustus De Morgan, the "staggering assertion" that a school of mathematicians from Trichur, in Kerala, had "laid the foundation for a complete system of fluxions," around the year 1500. Two works, the *Tantrasamgraha* and the *Karanapaddhati*, contained infinite series expansion for π which "not only were not known in Europe at those periods, but," according to De Morgan, "must have been discovered by something answering to the integral calculus." Using new archival evidence, I will examine initial attempts in the 1820s by members of the Royal Asiatic Society to suppress Whish's publication of the series expansion for *arctan*. I will then critically examine claims for a "Kerala calculus" by some scholars of Sanskrit mathematics, and compare them to Whish and De Morgan's historiographical claims. Kerala mathematics becomes read as calculus by some authors because of attempts to answer De Morgan's initial presupposition of a historical trajectory of development particular to European calculus. I end by offering some reflections on open questions regarding the precolonial social contexts of South Indian mathematics.

Stephen Stigler, University of Chicago

Casanova's Lottery and the History of Mathematics

The underworld of gambling can reveal some surprising insights into the history of mathematics that never appear in journals or treatises. Casanova's Lottery and some early gambling stories present examples. Might the Law of the Maturity of chances be real? Can an escaped murderer or a young philosopher outsmart the leading financiers in Europe? Is a lottery really a tax on stupidity?

Xiaofei Wang, Chinese Academy of Sciences
Joseph Fourier's Teaching of Analysis at the École Polytechnique: A Study Based on Unpublished Manuscripts

When the École Polytechnique was established in 1794, Joseph-Louis Lagrange was appointed as the professor of analysis. Joseph Fourier was appointed as an assistant for mathematical courses. Nevertheless, he played a significant role, instructing two courses on analysis to two classes comprising students from all three divisions of the school between 1795 and 1798. However, few studies have been conducted on these courses. This presentation, based on the manuscripts that document Fourier's courses, will focus on his teaching of differential calculus. Furthermore, it will show how the methodology of the subject was practiced through teaching activities. In this way, the paper will provide a case study that demonstrates the pedagogical concerns and motivations behind mathematical ideas.

Sian Zelbo, Columbia University
Edgar J. Edmunds: The Mathematics Teacher Who Challenged the White Supremacist Movement in Post-Civil War New Orleans

Edgar Joseph Edmunds (1851-1887), a mathematics teacher of African and French descent, became central to New Orleans' post-Civil War struggle over black citizenship. Despite pre-war restrictions on his education as a "free person of colour," Edmunds studied mathematics and science on his own and tested into the *École Polytechnique* in 1871. Upon returning to New Orleans after graduation, Edmunds took a position as the head of mathematics at the city's top, historically white, public high school. Edmunds' appointment was a provocative move by the city's black-majority school board and by Edmunds himself, because it placed Edmunds at the heart of a political storm. A coalition of white supremacists, including conservative newspapers, populist politicians, and domestic terror groups, had been waging a campaign of propaganda and violence to remove students with any trace of African ancestry from "white" public schools. These groups perceived Edmunds—as a highly educated man of African descent—to be a direct threat to their racist ideology. Their aggressive campaign to oust Edmunds, and his defiance in the face of the attacks, highlight the symbolic importance of public education and of mathematics education in the broader struggle for equality and full citizenship rights for African Americans in the post-Civil War South.