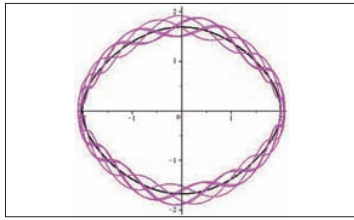


NEWSLETTER

OF THE EUROPEAN MATHEMATICAL SOCIETY



Feature

Three Stories of High Oscillation

p. 18



Feature

Mathematics at the Museum

p. 23



Society

The BSHM

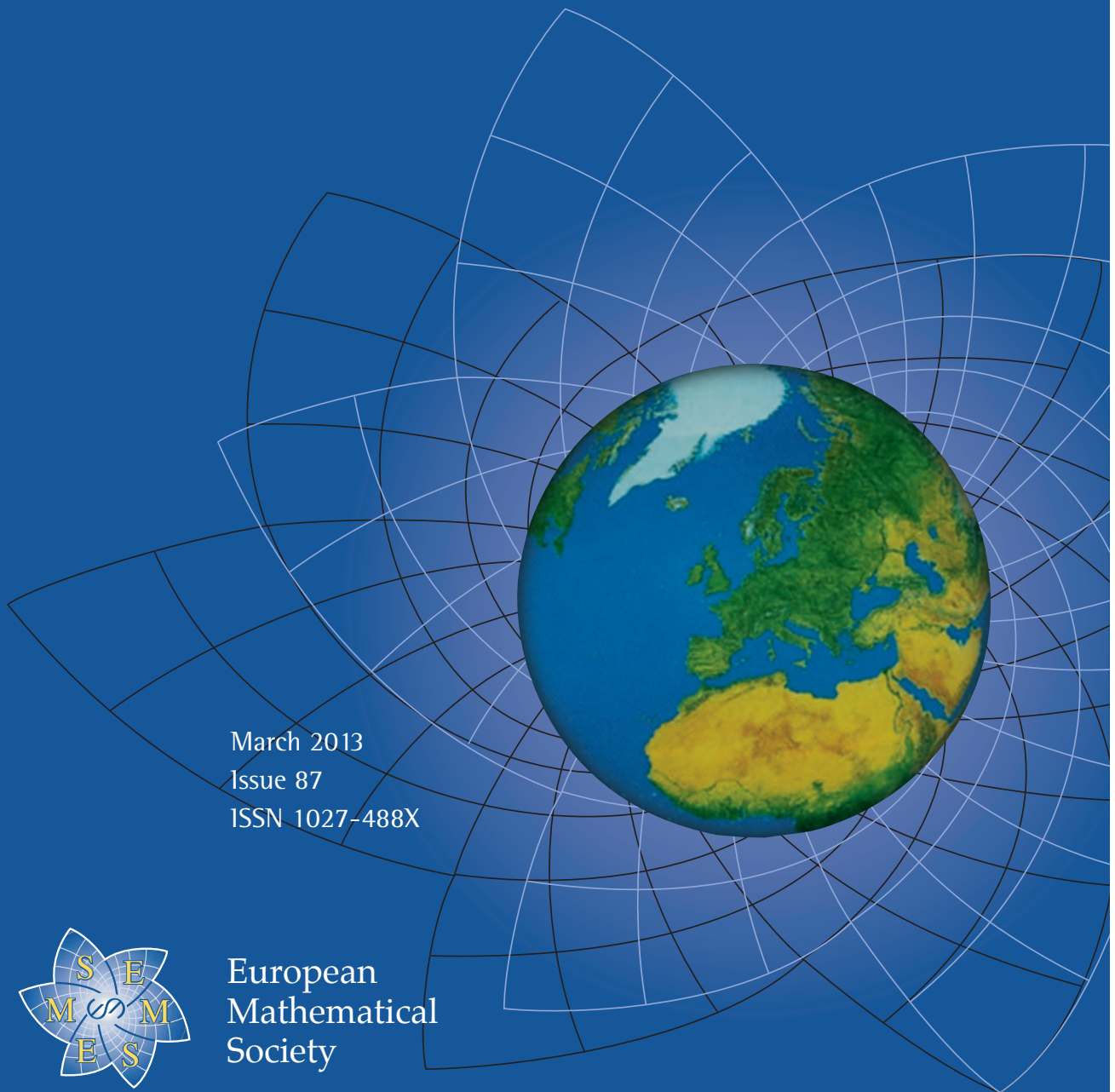
p. 34



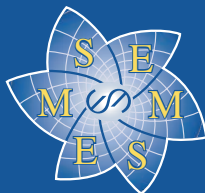
Centres

Hausdorff Research Institute

p. 37



March 2013
Issue 87
ISSN 1027-488X



European
Mathematical
Society

The British Society for the History of Mathematics

Robin Wilson and Raymond Flood (Oxford, UK)

The British Society for the History of Mathematics (BSHM) was founded in 1971 and currently has about 300 members from around the world. Its aims are:

- to promote and encourage research into the history of mathematics and to disseminate the results of such research.
- to promote and develop for the public benefit, awareness, knowledge, study and teaching of the history of mathematics.
- to promote the use of the history of mathematics at all levels in mathematics education in order to enhance the teaching of mathematics for the public benefit.

The first meetings

The circumstances of the Society's founding were described by its first Secretary and later President, Dr John Dubbey (subsequently Vice-Chancellor of the University of Malawi) [1]:

*The idea of a Society for the History of Mathematics was initiated by the late Arthur Morley (the Society's first treasurer). He had read my book *The Development of modern mathematics* (Butterworth 1970) and suggested we meet to consider the formation of a society.*

They duly met in the buffet at St Pancras Station, London, and agreed to convene an open meeting on the history of mathematics to see how much interest there would be. Dubbey continues:

We approached Gerald Whitrow [of Imperial College, London], who gave his enthusiastic support and agreed to chair this exploratory meeting. This took place at Thames Polytechnic [now the University of Greenwich] on 2 July 1971 with, to the surprise and delight of the organisers, over fifty participants.

The purpose of the exploratory meeting was to discuss:

- the existing situation in the history of mathematics, in terms of research, literature, teaching, availability of information, etc.;
- the value of studying the history of mathematics at universities, polytechnics and colleges of education;
- the formation of a national society concerned with developing the history of mathematics;

and the meeting began with five lectures:

John Dubbey (Thames Polytechnic) on *The history of mathematics in universities and polytechnics*;
Arthur Morley (Nottingham College of Education) on *The history of mathematics in colleges of education*;

Leo Rogers (Digby Stuart College) on *Relations between the history and pedagogy of mathematics*;

J. V. Pepper (North-East London Polytechnic) on *Thomas Harriot (1560–1621)*;

Ivor Grattan-Guinness (Enfield College) on *Literature and methodology in the history of mathematics*.

The ensuing discussion underlined the participants' desire for a society of this nature, and an interim committee was elected to draw up rules for the Society and convene a 'foundation conference' in about six months' time.

In spite of a couple of critical letters to the interim committee attacking the history of mathematics as a credible academic discipline, this opening meeting duly took place at Thames Polytechnic on 17 December, with an audience of about forty people. A formal lecture on *Geometry from Riemann to Whitehead* was presented by Prof. George Temple FRS, Emeritus Professor of Oxford University and a former President of the London Mathematical Society. To run the Society a committee was elected, consisting of the members of the interim group (Dr Gerald Whitrow as President, Dr John Dubbey as Secretary, and Mr Arthur Morley as Treasurer), together with Dr Margaret Baron (Stockwell College, London) and Dr J. D. North (University of Oxford). The annual subscription was set at £1.

During the next year two meetings were held – on 20 May at the Nottingham College of Education, with speakers Henk Bos (Utrecht) on *Differentials and higher differentials from Leibniz to Euler*, John Dubbey on *Charles Babbage, mathematician and computer pioneer*, Ivor Grattan-Guinness on *Contiguous functions*, and Stuart Hollingdale on *The history of numerical analysis*, and on 15 December at the Polytechnic of the South Bank (London), with the Annual General Meeting and two guest speakers: George Molland on *Modes of description of geometrical figures: Descartes and antiquity* and D. T. Whiteside on *Astronomical eggs, laid and unlaid, in Keplerian planetary theories*. By this time the membership had reached 142.

Presidents of the BSHM

1971 Gerald Whitrow	1995 Steve Russ
1974 Clive Kilmister	1997 J. V. Field
1977 John Dubbey	2000 Peter Neumann
1980 Graham Flegg	2003 June Barrow-Green
1983 Frank Smithies	2006 Raymond Flood
1986 Ivor Grattan-Guinness	2009 Tony Mann
1989 Eric Aiton	2012 Robin Wilson
1992 John Fauvel	

The Society's activities

The ensuing years experienced a great increase in both the number and scope of the BSHM's activities.

Residential meetings

The first weekend meeting of the Society took place in September 1973 at St Hugh's College, Oxford University. This gathering was so successful that residential meetings soon became a regular feature in the Society's programme. In the 1970s residential meetings took place at a college in Birmingham and at the Universities of York, Nottingham, and Cambridge. At first each meeting covered a diverse range of topics, but in 1979 the BSHM returned to Oxford (Pembroke College) for its first themed weekend, on *Geometry and physical theory, 1630–1930*.

These single-topic weekends continued into the 1980s with residential meetings on the *History of computing and algebra*, *Mathematics education*, *Renaissance mathematics*, *History of probability and statistics*, and *From Fourier to fractals*, and have been held, usually once a year, ever since. In 2012 there were two residential meetings, both in conjunction with the Oxford University's Department for Continuing Education – *Turing's worlds*, celebrating the centenary of Alan Turing's birth, and *Mathematicians and their gods*, on historical connections between mathematics and religion – and in June 2013 the featured topic is *Geometry: from Euclid to Einstein*.

Regular meetings

As can be seen from the previous paragraph, there was an increasing variety in the topics covered in the Society's activities. Among the many one-day meetings in the 1970s and 1980s were gatherings on *Babylonian and Egyptian mathematics*, *Calculating engines*, *Women mathematicians*, *The history of logic*, *Three founders of electromagnetism (Ampere, Faraday and Maxwell)*, and *Music, perspective and mathematics*. The early London meetings took place in places ranging from the British Museum, Science Museum and the Institute of Physics, while outside the capital our meetings were held at the Universities of Oxford, Cambridge, Birmingham, Warwick, Keele and Newcastle and the Open University. Several of the Society's meetings have involved visits to museums and libraries, and every year ends with an enjoyable Christmas meeting featuring a mixed selection of talks proposed by the Society's President.

Like last year's Turing weekend, many BSHM meetings have commemorated historical anniversaries. Among these have been celebrations of Hamilton's quaternions (1843/1993), Hilbert's Paris lecture (1900/2000) and the four-colour problem (1852/2002), as well as events marking the births of Leonhard Euler (1707/2007), August Möbius (1790/1990), Charles Babbage and Michael Faraday (1791/1991), Karl Pearson (1857/2007) and John von Neumann (1903/2003), and the deaths of Robert Recorde (1558/2008), Gerolamo Cardano (1576/1976), Arthur Cayley (1895/1995), James Joseph Sylvester (1897/1997), P. G. Tait (1901/2001), G. H. Hardy (1947/1997) and R. A. Fisher (1962/2012).

Joint meetings

Like the 2012 residential meetings in Oxford, several of the Society's most successful meetings have been collaborations with other societies or institutions: early joint meetings included *The history of mathematics education in England, 1800–1914* (with the British Society for the History of Science) and *Mathematics, history and the distance learner* (with the Open University). The year 2000 saw the beginning of a highly popular series of joint lectures with Gresham College (London) by distinguished historians of mathematics; these annual lectures can all be viewed on the Gresham College website (www.gresham.ac.uk).

In 2013, in addition to an afternoon of lectures on the *History of computing* at Gresham College, the Society's programme includes one-day joint meetings on *Jacob Bernoulli* (with the Royal Statistical Society), commemorating the tercentenary of his *Ars Conjectandi*, and *Lewis Carroll, mathematician* (with the Lewis Carroll Society and the Birmingham and Midland Institute).

Over the years the BSHM have held meetings jointly with the London and Edinburgh Mathematical Societies, the Mathematical Association, the Royal Meteorological Society, the Wellcome Trust, the Institute of Electrical Engineers, the British Societies for the History of Science, of Philosophy, and of Alchemy and Chemistry, and many other organisations.

Speakers

The BSHM has always tried to include a wide variety of speakers at its meetings – whether professional mathematicians, professional historians (of mathematics or otherwise), teachers, or popularisers of mathematics. Distinguished professional British mathematicians have included Sir Michael Atiyah, Sir Hermann Bondi and Sir Michael Berry, while the popularisers have included Ian Stewart and Simon Singh.

While he was President, Ivor Grattan-Guinness, a major figure on the international history of mathematics scene, emphasised the importance of having speakers from outside the UK, and since then European and American speakers (in particular) have featured regularly: the former have included Henk Bos (Netherlands), Evelyn Barbin and Jean Dhombres (France), Sergei Demidov (Russia), Umberto Bottazzini and Fulvia Furinghetti (Italy) and Eberhard Knobloch and Detlef Laugwitz (Germany), while speakers from America have included Karen Parshall, Joe Dauben, Wilbur Knorr, Claudia Zaslavsky and Benoit Mandelbrot.

International conferences

In 1997 the BSHM linked up with the Canadian Society for the History and Philosophy of Mathematics (CSHPM) for a joint conference at Oriel College, Oxford. This was followed, two years later, with a visit to York University in Toronto. Since then, three more joint meetings have taken place – at Clare College, Cambridge (2004), the University of Montreal (2007), and Trinity College, Dublin (2011).



Participants at the BSHM–CSHPM Joint conference in Dublin in July 2011, watched over by Trinity College's former President and mathematician George Salmon. (Photograph by Tony Mann)

HIMED and RiP

Two of the BSHM's aims deal with education and outreach, and many of its meetings have been concerned with the use of history in the mathematical classroom, in both schools and universities. In the 1990s, inspired by the enthusiasm of John Fauvel, the Society arranged several 'HIMED' (HISTORY of Mathematics in EDUCation) meetings that brought together mathematicians, historians and teachers in a day or weekend of lectures and workshops. The first of these meetings, held in 1990 at Leicester University attracted 150 participants and was followed by similar meetings at Oxford, Nottingham and several other venues.

An annual feature of the Society's programmes for the past twenty years has been 'RiP', the *Research in Progress* meeting, at which graduate students in the history of mathematics from the UK and around Europe talk about their current researches in an informal and supportive environment. The consistently high quality of the presentations is inspiring to all, and the meeting is always one of the highlights of the year.

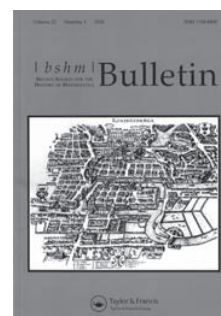
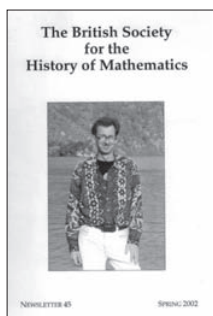
Prizes

For many years the BSHM has awarded history of mathematics prizes to authors and students. When the Open University's course *MA 290: Topics in the history of mathematics* was in existence (usually attracting about three hundred students per year), a prize was awarded, often at the *Research in Progress* meeting, to the student who performed best in the course. More recently the Society has awarded prizes for the best historical essay by a current full-time undergraduate at any university: recent prizewinners have written on 'The contribution of Évariste Galois to the founding of group theory', and 'The application of mathematical understanding in the ancient Olympic Games'

A different sort of prize is awarded every other year in honour of former BSHM President Dr Peter M. Neumann OBE, for a popular book on the history of mathematics. The first Neumann prizewinners (in 2009) were Reviel Netz and William Noel for *The Archimedes Codex*, and the 2011 prizewinner was Clifford Pickover for *The Math Book*.

Publications

In 1986 one of the members, Ronald Gowing, initiated a regular *BSHM Newsletter* in order to provide members with news of the Society's activities and other history of mathematics events in the UK and around the world. This three-page document rapidly increased in size, reaching 32 pages by 1992 and 68 pages for its 50th edition in 2004. By this time the current editor, Jackie Stedall, felt that it was high time to have a proper Society magazine, and the *BSHM Bulletin*, published by Taylor & Francis, was born. This is a highly professional publication containing articles, BSHM news and book reviews.



BSHM Newsletter 45 (2002) commemorating the life of John Fauvel, and the *BSHM Bulletin* Volume 23, No. 1 (2008).

We conclude with a tribute to the BSHM sent by Joe Dauben, the Chairman of the International Commission on History of Mathematics, in 1992:

As the BSHM begins its third decade as the only specialised society for history of mathematics in Europe, and the oldest such society in the world, its remarkable success reflects the growing seriousness of the study world-wide. In its first 21 years the society has sponsored more than 400 lectures by mathematicians, historians and philosophers of mathematics from many parts of the world, on subjects ranging from antiquity to modern mathematics. Issues relevant to mathematics education and, in particular, the role that history can and should play in teaching, have also been among its prime concerns.

As chairman of ICHM (a joint commission of the International Mathematical Union and the International Union for History and Philosophy of Science), I am especially pleased to convey this message of congratulations to the BSHM, with best wishes for its continued wellbeing and success. May it persist over the decades to come in promoting the history of mathematics, in as rich a diversity of ways as it has done in the past.

Further information about the BSHM and its activities can be found on its website: www.bshm.org.

Acknowledgement

We are very grateful to Ivor Grattan-Guinness for his excellent account, 'A tale of a tub: on the Society's first 21 years' in the *BSHM Newsletter* Number 21, 1992; much of the material in this article is gleaned from this account.



Robin Wilson [r.j.wilson@open.ac.uk] is Emeritus Professor of Pure Mathematics at the Open University (UK) and Emeritus Professor of Geometry at Gresham College (London), and currently teaches for Pembroke College, Oxford University, and the London School of Economics. He has written and edited over forty books, mainly on graph theory and combinatorics or the history of mathematics, and is involved with the popularisation and communication of mathematics and its history. He is currently President of the BSHM.



Raymond Flood [raymond.flood@kellogg.ox.ac.uk] was Vice-President of Kellogg College, Oxford University, and previously was University Lecturer in Computing Studies and Mathematics at the Department for Continuing Education, Oxford University. He is an Emeritus Fellow of Kellogg College. His main research interests lie in statistics and the history of mathematics, and he has written and co-edited several books. He was formerly President of the BSHM, and is currently Gresham Professor of Geometry.

Hausdorff Research Institute for Mathematics (HIM)

Wolfgang Lück (HIM – Hausdorff Research Institute for Mathematics, Bonn, Germany)

The Hausdorff Research Institute for Mathematics (HIM) organises international programmes devoted to topics in mathematics, mathematical economics and interactions of mathematics with other sciences, each of which lasts for four months. The institute was founded in 2006 and is part of the Cluster of Excellence “Hausdorff Center for Mathematics” at the University of Bonn. Bringing together a critical mass of expertise and providing an inspiring atmosphere, the activities at HIM initiate research at the forefront of mathematics in its full breadth. HIM gives scientists the opportunity to work on challenging projects, undisturbed and for longer periods, and to discuss them with leading experts in their fields. This leads to a substantial output of research results of the highest quality, initiated, pursued and sometimes even completed during the programmes.



Main building

Activities

Generally, HIM organises two Trimester Programmes and one Junior Trimester Programme, each lasting four

months. The programmes bring together leading experts and young talents from all over the world. HIM fosters longer term cooperation between the participants. Scientists from different fields or disciplines exchange their ideas and discuss problems. Ideally, a transfer of methods between different areas will lead to unexpected new results or solutions to problems in a field where the researchers had not been aware of suitable tools from other fields. These synergies occur when researchers have the opportunity to work together for extended periods, during which they become acquainted with the language and skills of other areas or disciplines, and establish new connections. Even new research directions are being created. The interactions at HIM have long-term effects and lead to cooperation continuing beyond the programmes.

- A *Trimester Programme* brings together scientists for extended periods to carry out research on a specific topic, often resulting in outstanding new achievements and new scientific cooperation. The institute can host up to 30 scientists at any one time and tries to distribute these places between senior mathematicians, post-docs and PhD students. Additional short-term visitors can be accommodated in the nearby annex. The theme of each programme is open to suggestion via proposals from groups of leading scientists. The proposals are evaluated by the members of the external Scientific Advisory Board who finally choose the theme. The overall topic can come from any area of mathematics, mathematical economics or mathematical physics. The facilities and administration of HIM ensure that the programmes run smoothly in an informal, stimulating atmosphere. The organisers of a Trimester Programme decide on the final list of participants in agree-