

# THE BRITISH JOURNAL FOR THE HISTORY OF SCIENCE

Volume vi

Part iv

No. 24

DECEMBER 1973

Price : £2.00 or U.S. \$6.00  
inclusive of postage  
(FREE TO MEMBERS OF THE SOCIETY)

PUBLISHED BY  
THE BRITISH SOCIETY FOR THE HISTORY OF SCIENCE

Registered Office : 47 BELGRAVE SQUARE, LONDON SW1X 8QX

## THE BRITISH SOCIETY FOR THE HISTORY OF SCIENCE

THE objects of the Society are to further the study of the history of science, by holding meetings for the reading and discussion of papers, and by facilitating the publication of relevant material.

*The British Journal for the History of Science* is the official organ of the Society.

There will generally be a Summer meeting, a Winter meeting, and an Easter meeting of the Society. It is intended that additional meetings be arranged for specific occasions such as important anniversaries.

Membership, which includes a subscription to the Society's Journal, is open to all persons approved by the Council of the Society, and elected at an Ordinary Meeting. The annual subscription is at present £5.00 (\$15.00) or, for Students, £3.00 (\$9.00).

Those who wish to join the Society should write to the Assistant Secretary, British Society for the History of Science, 47 Belgrave Square, London S.W.1.

Papers for inclusion in the Journal should be submitted to the Hon. Editor, Dr Robert Fox, Department of History, University of Lancaster, Bailrigg, Lancaster, from whom instructions may be obtained concerning the presentation and documentation of papers. All communications on editorial matters, and books for review, should be addressed to the Hon. Editor.

Particulars regarding advertising in the Journal may be obtained from Anthony Merson Ltd., 16 Little Common Road, Bexhill, Sussex.

*The British Journal for the History of Science* is published by the Society. At present two parts are published in each year, in June and December, and four parts constitute one volume. The cover of each issue has a consecutive number for ease of collation in subsequent binding; e.g. No. 16 is numbered: Vol. iv Part iv No. 16, and No. 17 is: Vol. v Part i No. 17. Beginning with the first part of volume VII, to appear in March 1974, the Journal will be published three times a year, in March, July, and November. The three issues published in any one calendar year will then constitute a volume.

Order Forms, with lists of contents of Parts already published, are obtainable from: *British Journal for the History of Science*, HEADLEY BROTHERS LTD., ASHFORD, KENT, ENGLAND, to whom orders for the Journal should be sent.

Particulars of binding costs may also be obtained from HEADLEY BROTHERS LTD.

© The British Society for the History of Science 1973.

# THE BRITISH JOURNAL

FOR THE

# HISTORY OF SCIENCE

---

VOL vi, Part iv

DECEMBER 1973

No. 24

---

## CONTENTS

The Leibnizian-Newtonian Debates: Natural Philosophy and Social Psychology. CAROLYN ILTIS . . . . .	343
Benjamin Martin and the Development of the Orrery. JOHN R. MILLBURN	378
Spectroscopy and the Elements in the Late Nineteenth Century: The Work of Sir William Crookes. ROBERT K. DEKOSKY . . . . .	400
Note:	
Lavoisier, Monge and the Synthesis of Water: A Case of Pure Coincidence? C. E. PERRIN . . . . .	424
Essay Review:	
Joseph Fourier, 1768–1830 . . . . .	429
Book Reviews (for details see next page) . . . . .	433
Books Received . . . . .	456
Collections II: The Crawford Collection . . . . .	459
Obituary . . . . .	462
Notes on Contributors . . . . .	463
Report of the Council . . . . .	464

PUBLISHED BY THE BRITISH SOCIETY FOR THE  
HISTORY OF SCIENCE

Registered Office: 47 BELGRAVE SQUARE, LONDON SW1X 8QX

ESSAY REVIEW

	PAGE
I. GRATTAN-GUINNESS, in collaboration with J. R. RAVETZ: <i>Joseph Fourier 1768–1830. A survey of his life and work . . .</i> , rev. by J. W. HERIVEL	429

BOOK REVIEWS

GENERAL

<i>Isis cumulative bibliography. A bibliography of the history of science formed from Isis critical bibliographies 1–90, 1913–65</i> , rev. by W. H. BROCK	433
SIDNEY MORGENBESSER, PATRICK SUPPES, and MORTON WHITE (Eds.): <i>Philosophy, science, and method. Essays in honor of Ernest Nagel</i> , rev. by R. G. A. DOLBY	434

SCIENCE AND SOCIETY

JOSEPH BEN-DAVID: <i>The scientist's role in society. A comparative study</i> , rev. by J. R. RAVETZ	435
PETER MATHIAS (Ed.): <i>Science and society 1600–1900</i> , rev. by STEVEN SHAPIN	436
A. E. MUSSON (Ed.): <i>Science, technology, and economic growth in the eighteenth century</i> , rev. by J. D. MARSHALL	437
GEORGE H. DANIELS: <i>Science in American society. A social history</i> , rev. by JOHN A. WOODS	438

ARAB SCIENCE

E. S. KENNEDY and DAVID PINGREE (Eds.): <i>The astrological history of Māshā 'allāh</i> , rev. by R. P. LORCH	438
---	-----

RENAISSANCE

FRANK D. PRAGER and GUSTINA SCAGLIA (Eds.): <i>Mariano Taccola and his book De ingeneis</i> , rev. by A. G. KELLER	439
ANTONINO POPPI: <i>La dottrina della scienza in Giacomo Zabarella</i> , rev. by C. B. SCHMITT	440
FRANCES A. YATES: <i>The Rosicrucian enlightenment</i> , rev. by A. J. TURNER	442

NEWTONIAN STUDIES

D. T. WHITESIDE (Ed.): <i>The mathematical papers of Isaac Newton. Volume V, 1683–1684</i> , rev. by J. D. NORTH	444
ALEXANDRE KOYRÉ and I. BERNARD COHEN (Eds.): <i>Isaac Newton's Philosophiæ naturalis principia mathematica. The third edition (1726) with variant readings</i> , rev. by D. T. WHITESIDE	445

EIGHTEENTH CENTURY

ALLAN FERGUSON (Ed.): <i>Natural philosophy through the 18th century and allied topics</i> , rev. by G. L'E. TURNER	447
ERIC G. FORBES (Ed.): <i>Tobias Mayer's Opera inedita and The Euler-Mayer correspondence (1751–1755)</i> , rev. by V. BAROCAS	448
E. L. CLOYD: <i>James Burnett. Lord Monboddo</i> , rev. by J. B. MORRELL	449

NINETEENTH CENTURY

SIR JOHN BARROW: <i>Sketches of the Royal Society and Royal Society Club</i> , rev. by A. D. ORANGE	450
L. PEARCE WILLIAMS, with the assistance of ROSEMARY FITZGERALD and OLIVER STALLYBRASS (Ed.): <i>The selected correspondence of Michael Faraday</i> , rev. by P. M. HEIMANN	451
J. AGASSI: <i>Faraday as a natural philosopher</i> , rev. by B. S. GOWER	452
H. LEWIS MCKINNEY: <i>Wallace and natural selection</i> , rev. by ROGER SMITH	453