

during the 1820s and 1830s. But a reviewer must not criticize an author for failing to write a different book.

Readers who are interested in the details of Fourier's early formulations of the heat conduction equation, a topic to which Herivel does devote considerable attention, should be aware of the criticisms made by Grattan-Guinness (1975).

REFERENCES

- Brush, S G 1976 *The Kind of Motion We Call Heat* Amsterdam
 Burchfield, J D 1975 *Lord Kelvin and the Age of the Earth*
 New York
 Grattan-Guinness, I 1975 Essay Review, On Joseph Fourier: the
 man, the mathematician and the physicist
Annals of Science 32, 503-514
 Wolf, A 1961 *A History of Science, Technology, & Philosophy*
in the 18th Century Volume I New York

LEONHARDI EULERI OPERA OMNIA. COMMENTATIONES MECHANICAE ET
 ASTRONOMICAE AD SCIENTIAM NAVALEM PERTINENTES. VOLUMEN
 PRIUS. Edited by Walter Habicht. Series 2, Volume 20
 of the Collected Works of L. Euler. Basel (Orell Füssli
 Turici). 1974. LX + 275 pp.

Reviewed by E. J. Barbeau
University of Toronto M5S 1A1

This is the first of two volumes of the shorter works of Euler on naval science. Conceived between 1727 and 1752, the papers of this volume treat a variety of naval problems: the masting of ships (E4), the best construction of a capstan (E78), rowing a boat across a flowing river (E94), emplacement of oars in a boat (E116), the determination of time and the meridian on the high seas (E150) and methods of propelling a boat without use of wind (E137, E413, EA15; EA15 is essentially a French translation of E413 by his son). The mathematics generated by applying the principles of mechanics includes elementary algebra, geometry, trigonometry, and differential calculus, especially the first derivative test for extreme values and the solution of first order differential equations. The determination of time at sea, of course, makes use of spherical trigonometry, and (at the end of E94) the determination of the quickest route between two assigned points on opposite banks of a river is a problem in the calculus of variations.

The eight papers, in Latin and French, are preceded by a German introduction and summary of over 50 pages. (On page VIII, second line from the bottom, "pp. 1-35" should read "pp. 1-4.")