

countless generations of human beings over the surface of our planet, a few souls spotlighted on the stage of history, most obscure in their day-to-day struggles for existence. In particular anyone who has tussled with the works of Hegel, Spengler and Toynbee will be grateful for Trivers's three masterly comparative essays on these men's philosophies and their beliefs with respect to culture, history, time and human personality.

But what about the nature of time? Does Trivers succeed in elucidating its nature? Of course not. That however does not subtract anything from the book's value: it remains a detailed and fascinating study of man and time, in its wide scope bridging successfully the gap between the natural and humanistic sciences. He is far too modest in his conclusion, viz: 'The reader will recognise, I hope, that this book which originated with an attempt to deal with the problem of time is a philosophical effort, and as such, if of value, represents marginal notes on Reality'.

A. E. ROY, *Department of Astronomy, University of Glasgow,
Glasgow G12 8QQ, UK*

Life Sciences

R. P. W. VISSER, *The Zoological Work of Petrus Camper (1722-1789)*. Amsterdam: Rodopi, 1985. vi + 207 pp., 12 figs. Hfl. 45.00.

The progress of zoology in eighteenth-century Holland is rarely researched, understandably, because the scene was dominated by private collectors who looked for rare and beautiful specimens mainly for their own aesthetic pleasures. Among the few professionals, names are absent—who remembers the first professor of natural history at the University of Leiden, J. N. S. Allamand (himself a Swiss) or the director of the royal museum and menagerie, Arnout Vosmaer? Among the zoologists of that time and place, only one name stands out: Petrus Camper, who may be compared to John Hunter in England. Appropriately, the book under review, one of the first on the subject, discusses the influence of this man.

Two reasons have contributed to Camper's relative obscurity. Firstly, the fact that he wrote mainly in Dutch and sometimes in Latin makes his work rather inaccessible to the average student. Secondly, modern research programmes tend to overlook people like Camper due to his refusal to use Linnean systematics and nomenclature. At first (before 1763) he advocated the methods introduced by Linnaeus. However, he soon became critical because they led only to long lists of plant and animal names without adding to a real understanding of nature.

Camper always emphasized the value of direct observation and extensive morphological studies. This is exemplified in his publications which show careful empirical research rather than the exposition of theories. Camper's subject matter was very diverse even within the confines of zoology, which included the present field of palaeontology. Besides, he had a medical training and wrote about medical and ethical matters too. He discussed, for instance, the pneumatics of bird skeletons, the anatomy and systematic position of the orang-utan and the double-horned rhinoceros, the reproduction of the pipa toad, the structural uniformity of the vertebrates, the origin of Negroes, and the identification and position of fossils.

This book does a good job in discussing each theme in detail. It was presented as a doctoral thesis by a staff member of the Biohistorical Institute in Utrecht, where the role of the Dutch in the progress in botany and zoology through the ages is emphasized. Visser tells us what Camper did, why he did it and what its importance was in the context of eighteenth-century zoological studies. He starts with a short biographical outline and a discussion of Camper's scientific method. This is followed by an exposition of his anatomical and physiological studies, his approach to systematics, his physical anthropology and palaeontology. The main text is followed by 20 pages of notes (which include all references) and a bibliography of all books and papers published by Camper and their translations, including those non-zoological, totalling 197 titles. The book ends with an index of names but not of subjects. The author obviously studied many of Camper's unpublished manuscripts, letters and drawings. Unfortunately, these have not been listed separately (although they are identified in the notes), which would have assisted future research. Camper was a pivotal figure in Dutch zoology and Visser has ably introduced him to the scholarly public.

L. C. ROOKMAAKER, *Dokter Guepinlaan 23, 4032 NH Ommeren, The Netherlands*

Annals of Science

An International Review
of the History of Science
and Technology from
the Thirteenth Century

Volume 43 1986



Taylor & Francis
London • New York • Philadelphia

ANNALS OF SCIENCE

Volume 43 Number 4 July 1986

Contents

Main Articles

- 15 J. A. VAN MAANEN The refutation of Longomontanus' quadrature by John Pell
33 M. WHITEHEAD The Jesuit Contribution to Science and Technical Education in
Late-Nineteenth-Century Liverpool
369 A. A. MILLS Portable Heliostats (Solar Illuminators)

Book Reviews

Physical Sciences

- 407 R. S. COHEN and W. W. WARTOFSKY (eds.) *Physical Sciences and History of
Physics* (C. Chevalley)

Astronomy and Cosmology

- 409 E. NICOLAIDIS *Le Développement de l'Astronomie en U.R.S.S. 1917-1935*
(K. Krisciunas)

Space and Time

- 411 H. TRIVERS *The Rhythm of Being. A Study of Temporality* (A. E. Roy)

Life Sciences

- 412 R. P. W. VISSER *The Zoological Work of Petrus Camper (1722-1789)*
(L. C. Rookmaaker)