



## BOOK REVIEW

### STENO ON MUSCLES

The book is published as Vol. 84, Part 1 of *Trans. Am. Philos. Soc.*, 1994 (ISBN 0-87169-841-2). It can be ordered for U.S. \$25 (for international mailing add \$6) at the above-mentioned society, P.O. Box 40098, Philadelphia, PA 19106, U.S.A.

The primary author is Troels Kardel, a Danish general practitioner, who also published in the 1990 *J. Biomechanics* on the subject of Niels Stensen's 17th century work on pennate muscle. Contributions regarding translation and annotation were made by Paul Maquet, Sister M. Emmanuel Collins, Harriet Hansen and August Ziggelaar.

The paperback book (252 pages, 27 illustrations) contains the following:

1. A historical essay on Stensen's myology.
2. A version of the original *Nova musculorum et Cordis Fabrica* as well as the English translation: *New structures of the muscles and the heart*.
3. A version of the original *Elementorum myological Specimen* as well as the English translation: *'Specimen of elements of myology'*.
4. Notes to the Latin text.
5. Several useful indices.

The translations are made in a page-by-page fashion so that easy viewing of the original text is very well possible while reading the English translation.

In my view, the book is of interest to two types of readers of *J. Biomechanics*: (A) The myologists of experimental and modelling inclination, who have an interest in the details of Stensen's views on muscle. (B) Those of us who are interested in the history of scientific ideas, the factors that influence the acceptance or rejection of new ideas. For the first group, having easy access to versions of the original work may seem a very appealing idea, as it creates the feeling that a personal evaluation can be made. However, reading 17th century manuscripts is a very hard and time-consuming task, despite the fact that the language barrier

of Latin was removed. If one manages to do so for some time one is struck with the similarity between aspects of 20th century muscle modelling work and Stensen's work. It seems that the whole idea of angular mechanisms of pennate muscle had to be rediscovered several hundreds of years after a detailed description was given initially. The historical chapter of Kardel makes this point very clearly. It also gives an interesting view of what determined the disappearance of Stensen's English translations of selected parts of publications by Willis, Mayow, Borelli, Bernoulli, Boerhave, Haller and others. It appears to be the inability of world renowned scientists, who in other areas of physiology or biomechanics of movement made major contributions, to accept the fact that (in modern terms) muscle fibre angular increases could be caused by the constant volume of muscle and/or fibre. This inability to change views was caused by the dogma that nerves inflated the muscle to initiate contraction.

After reading such a book one has the feeling that one should become explicitly aware of the dogmas that are presently active and identify the 'big shots' that may potentially be impeding progress to a fuller understanding of movement and the role of muscles in it. Even if sharpening of the senses regarding this point would be the sole effect of reading a book like this, it would be very worthwhile.

Peter A. Huijing  
*Faculteit Bewegingswetenschappen*  
*Vrije Universiteit*  
*The Netherlands*  
*Biomedisch Technologisch*  
*Instituut*  
*Universiteit Twente*  
*The Netherlands*