

Book Reviews

when Davis *et al.* in 1962, demonstrated the breakdown of ATP in a single tetanic contraction of a muscle treated with 1-fluoro-2, 4-dinitrobenzene.

Chapter 15 is devoted to *rigor mortis*.

Preceded by chapters on the general history of respiration (Chapter 16) and of oxidative phosphorylation (Chapter 17), Chapter 18 is concerned with the regulation of carbohydrate metabolism for energy supply to the muscle.

In Chapter 19 the author compares the white and red striated muscles of vertebrates, while the effect of denervation is considered in Chapter 20. Muscle diseases form the subject of Chapter 21. Invertebrate muscles are considered in a historical perspective in Chapter 22, and the smooth muscles of vertebrates in Chapter 23.

In Chapter 24, the author retraces the knowledge accumulated during the last twenty-five years on the presence of ATP and ATPase in diverse cells showing motility and even other uses of ATP, for instance in the production of electric current or osmotic work.

'Living beings' as the author concludes, 'differ in glory but, in deeper ways than the apostle thought, their flesh is one.'

Since the book was completed, S. Lowey and D. Risby (*Nature*, 1971, **234**, 81) have demonstrated that myosin from fast skeletal muscles consists of two large sub-units (each about 200,000 daltons) and four smaller (in the range of 20,000 daltons). While ATP has been recognized as hydrolyzed at the onset of contraction, its hydrolysis is in muscle contraction, coupled to a process which remains obscure. It may be hoped that this mystery will be solved when the most interesting and informative book of D. M. Needham appears in a second edition.

There is another aspect of the book which should be emphasized: it is that only such an expert as D. M. Needham could provide us with a historical treatment in such a thorough and stimulating manner which makes the book of prime importance not only to historians but to active biochemists, as the domains surveyed with such talent and authority by Dorothy M. Needham remain the background of modern research.

MARCEL FLORKIN

Charles Bonnet, Lettres à M. l'Abbé Spallanzani, ed. by C. CASTELLANI, Milan, Episteme Editrice, 1971, pp. lxiii, 566, illus., £15.

The edition of the 96 letters sent by Bonnet to Spallanzani between 1765 and 1791 is very interesting for the historian of eighteenth-century biology, the subjects mentioned in this correspondence being of a great variety (they range from the physiology of plants to the reproduction of higher vertebrates).

At a first glance this volume, well printed and illustrated by contemporary etchings, makes an excellent impression. It is only after careful reading that one becomes disappointed. First of all there is an incredible number of typographical mistakes in the text of the letters, the footnotes and the index of personal names (where Frederick II becomes Frederich, Dortous de Mairan Dourtuos, Réaumur Réamur and A. Trembley Trebley). Such errors should have been avoided in a scholarly work.

But there are more important grounds for complaint. The editor although an excellent historian of biology and medicine is not a naturalist. This is obvious in

Book Reviews

the annotation of the letters 45 and following dealing with the corn eelworm (*Anguina tritici*, Nematode) where it is not taken into consideration that there was at that time a confusion between two diseases of corn: the ergot produced by a fungus, *Claviceps purpurea* and the corn-cockle caused by *A. tritici*, above mentioned. When Saussure mentions to Bonnet Fontana's observations on 'les anguillules de l'ergot', he has evidently in mind the corn eelworm and not *C. purpurea*; therefore the eggs described are indeed those of the Nematode and not the spores of the fungus as Castellani writes wrongly in his footnotes p. 281. A short glance at the historical part of Davaine's monograph on the corn eelworm (*Recherches sur l'anguillule du blé niellé*, 1856) would have avoided this error. The editor is also wrong when he interprets (p. 279) the observations of Roffredi on *A. tritici* as concerning the fungus *Puccinia graminis* and the work of Fontana which he quotes in relation to the 'anguilles' (eelworms) is not *Osservazioni sopra la ruggine del grano* (Lucca, 1767) but *Saggio di osservazioni sopra il falso ergot e tremella* (Firenze, 1775).

Last but not least, in the indexes closing the volume (pp. 557–66) it would have been much more convenient to give the numbers of the pages than of the letters which run sometimes on ten or more pages.

J. THÉODORIDÈS

Glass and British Pharmacy 1600–1900: a Survey, and Guide to the Wellcome Collection of British Glass, by J. K. CRELLIN and J. R. SCOTT, London, Wellcome Institute of the History of Medicine, 1972, pp. viii, 72, illus., £4.00.

This important catalogue by Crellin and Scott giving details of colours, shapes and dimensions of some 1,200 examples of specie jars, carboys, storage and display jars, presents a serious study of apothecary and pharmacy vessels during the four hundred years to 1900. It is the second in the Catalogue series promised by Dr. F. N. L. Poynter, Director of the Wellcome Institute, when Dr. Crellin's *Medical Ceramics* appeared in 1969. The period now covered is one in which the art and practice of the apothecary, successor to the medieval spicer, became the provenance of the chemist and druggist of the eighteenth century and the pharmacist a century later.

From the introduction and the informative notes the reader will appreciate the extent of the search made by the authors of any literature bearing upon the whole subject of pharmaceutical equipment, some part of which has already been published in *Medical History*, 1969, 13, 51–67 (Drug Weighing) and 1970, 14, 132–53 (Fluid Medicines, etc.). When did the first show carboys, those large display vessels that used to designate the pharmacy, come into use? Their forerunners, the clear storage vessels and the later coloured ones with floral designs, all illustrated, indicate the pharmacy owner's pride in his possessions—function and ornament were happily blended. How to date these vessels and how to decide when one kind of label, painted, etched or recessed, replaced another? Where were the shelf containers, the shop rounds, made? These and so much else are being discarded because of lack of space now that their usefulness is over. Some guidance in dating comes from examining trade cards, billheads and old trade catalogues, but when shapes, designs and labels continued for half a century the problem is not an easy one, though the present-day collector would like to have everything defined for him.