

Book Reviews

of this time explained that this meant avoiding fatty foods and eating unleavened whole-wheat bread and vegetables.

From the Renaissance into the nineteenth century, there was a great interest in the process by which quite different foods were all digested and apparently converted into blood. Guggenheim describes the successive changes in ideas on the subject. Galen had considered the heat of the stomach to be the dissolving agent for the first stage of digestion. Jean Baptiste Van Helmont, writing in Belgium in the early 1600s, found this unacceptable, in part because of the digestive abilities of cold blooded fish. He believed that chemical changes occurred under the influence of "ferments" with a power analogous to the action of yeasts on sugars. The acidity of the stomach played a part in this, but ordinary acidic juices such as vinegar or lemon juice did not have the same digestive action. Under the influence of René Descartes and then of Isaac Newton, the working of the body began to be visualized in purely mechanical terms. Hermann Boerhaave, the most authoritative medical teacher in the early years of the eighteenth century, believed that food particles were sub-divided and ground down successively by the teeth, stomach, and circulating blood until they were of the right size and shape to slot into vacant spaces in the tissues. Animal heat was the result of friction, and tissue particles were abraded and cracked until they in turn, fell out into the blood stream and then diffused either through the pores of the skin, or into the urine. Only with the new light thrown by Antoine Lavoisier on combustion, and on the continual production of carbon dioxide by humans and animals, were the mechanical ideas finally discarded.

The nineteenth century work of Justus von Liebig and Johannes Müller in Germany forms the subject of another essay. Müller, the physiologist, was convinced by his microscopical studies that red blood corpuscles could not pass through capillary walls, to be swallowed whole by tissue cells, so that nutrition became the movement of soluble chemicals from the bloodstream. Liebig, the chemist, assumed that animal heat could be completely accounted for by exothermic chemical reactions, and that no "vital force" was required. He also began the misleading idea that protein was the only "true food", and that the quantity required was proportional to the physical effort exerted by different individuals.

The final essay considers the discoveries of the vitamins in the early years of the present century, and discusses the reasons for the long delay in recognizing the existence of such factors, despite the knowledge of diseases such as scurvy which were associated with a restricted diet. Certainly the germ theory of disease had explained a great many problems, and a positive cause of disease was more easily visualized than a negative one (i.e. a lack of something).

Each essay is supported by 16 to 32 references, and is clearly written. It would be a useful source of supplementary material for someone teaching a general course in the history of medicine; and of particular value for those with a special interest in physiology and metabolism.

Kenneth Carpenter, University of California at Berkeley

ERNEST COTCHIN, *The Royal Veterinary College London: a bicentenary history*, Buckingham, Barracuda Books, 1990, pp. 232, illus., £25.00 (0-86023-476-2).

Formal veterinary education arrived late in Britain compared to her continental neighbours, for reasons which were many and complex. When London's Veterinary College finally opened in January 1792, there were already more than 20 veterinary schools, or veterinary departments, in universities throughout Europe, including the original schools in France and many establishments modelled on them, from Italy and the German States to Scandinavia. It might have been even later, had it not been for the private enterprise of the gentlemen of the Odiham Agricultural Society and the fortuitous presence of a colourful graduate of the Lyon Veterinary School, one Benoit Vial from the village of Sain-Bel, who in England styled himself Vial de Saint Bel. His grandiose plans for the school were never fully realized before his premature death, probably of glanders contracted from equine patients, in 1793. His successor, Edward

Book Reviews

Coleman, had trained in human surgery and made no attempts, in more than 40 years of teaching at the College, to cover subjects unconnected with horses.

It was not until, as the Royal Veterinary College, the institution entered its second century under John McFadyean in the 1890s that veterinary education in Britain achieved the same academic standards as other professions at home, and similar schools on the European continent. The story of the good times and the bad times is well told by the late Ernest Cotchin, who died before completion of the manuscript. Generous additional contributions by Sherwin Hall and Clifford Formston, and careful editing, have made the present volume the complete history which the College deserves on the occasion of its bicentenary. The serious historian may regret the absence of specific notes and references, but will have to be content with a short bibliography.

The coffee-table format accommodates many well chosen illustrations, some of them in colour. The first half of the book boasts a number eighteenth- and nineteenth-century engravings, some old favourites, others rarely seen in published form. The juxtaposition of George Stubb's "Eclipse" from life and Vial's "Geometrical Drawing representing the exact proportions of the late Famous Eclipse" is particularly apt. The book's second half benefits from the age of photography to record images of the College's more recent principals, professors, and occasionally students, at various stages in the history of its second century. Royal visits are also recorded. A fetching photograph shows a young Queen Elizabeth II chatting to an equine patient which is busily exploring the quality of her fur collar, all too obviously fashioned from what has later become known as an endangered species of Great Spotted Cats. It reminds the reader forcibly of the giant strides made since 1959 by the conservation lobby of which Prince Philip, Patron of the College, is such a prominent member. Even the Decimus Burton Arch at Hyde Park Corner is there: Adrian Jones, who sculpted the four magnificent horses above, had graduated from the College in 1866.

Lise Wilkinson, Royal Postgraduate Medical School

DAVID L. COWEN and WILLIAM H. HELFAND, *Pharmacy: an illustrated history*, New York, Harry N. Abrams, 1990, pp. 272, illus., £55.00 (0-8019-1498-0).

In recent years, pharmacy history, by comparison with the published output of modern medical history, has been ill-served by either general surveys or more esoteric monographs, particularly in the English language. Nor has it yet received the attention of a significant number of professional historians, a result of which is that much of what is available has been produced by pharmacists. Any new publication on the history of pharmacy, therefore, must be welcomed; but a publication of the combined authorship of two leading pharmaceutical historians is a rare and important event.

This volume falls into the category of a wide ranging survey, aimed perhaps especially at the interested pharmacist reader although it will undoubtedly appeal to a wider non-specialist audience. The authors and publishers must be congratulated for having produced an attractive publication that is greatly enhanced by many newly reproduced and unusual images of pharmacy. It is a beautifully and expensively produced volume relying heavily on Helfand's own remarkable collection of original illustrations that more than repay the extensive use of colour reproduction.

The text belongs to an established tradition of books on the history of pharmacy that stretches back to at least the 1940s with the publication of the first edition of Edward Kremer's and George Urdang's *History of Pharmacy* (1940) and Patrice Bousset's *Histoire illustrée de la pharmacie* (1949), and more recently Patrice Bousset, Henri Bonnenmain and Frank J Bové's *Histoire de la pharmacie et de l'industrie pharmaceutique* (1982). Characterized by a high proportion of illustrations, chronological structure and a plethora of chapters, sections and headings, all these works make ambitious attempts to cover pharmacy through from its ancient origins to the present, embracing a vast range of both primary and secondary sources.