with the surgeons Matthias Mayor and César Roux, the ophthalmologists Marc Dufour and Jules Gonin, the psychiatrist Auguste Forel, and many others like A. Yersin (bacteriology), H. Stilling (pathology) and the historian of medicine Eugène Olivier. The latter's researches paved the way to the present work to a great extent, as the author readily acknowledges (pp. 9, 165).

It should however be pointed out that a number of these celebrated scholars spent only a certain part of their medical career in Lausanne. A name that does not appear in this book is that of Waldemar Haffkine, the renowned bacteriologist. He was not in fact connected with the Faculty, but spent the last years of his life in Lausanne and was buried there in 1930.

The author, Guy Saudan, is the director of the Institut Universitaire d'Histoire de la Médecine et de la Santé Publique which opened in 1989. He gives much attention to the development of medical institutions, to teaching and research facilities, and, last but not least, to the impressive development of the past forty years (pp. 177–226). Several appendices contain detailed figures and names of the Medical Faculty, and there is a detailed list of illustrations but no index. Obviously iconography is of central importance—as it usually is in such works aimed at a wide public. The book's presentation and accuracy are excellent.

Samuel S. Kottek, Hebrew University of Jerusalem

HOSAM ELKHADEM, *Le Taqwīm al-Ṣiḥḥa (Tacuini Sanitatis) d'Ibn Buṭlān: un traité médical du XI^e siècle. Histoire du texte, édition critique, traduction, commentaire*, Académie Royale de Belgique, Classe des Lettres, Fonds René Draguet, vol. 7, Louvain. Peeters, 1990, pp. 345, illus., BFr. 3,200.00 (90–6831–271–5).

Taqwīm al-Ṣiḥḥa is an Arabic treatise on diet, hygiene and astrology. It consists of forty tables discussing in detail everything that relates to the Galenic six non-naturals. Ibn Buṭlān, the author of the book, borrowed the idea of using tables in representing his materials from the astronomical tables in order to appeal to a large range of readers. In addition to these forty tables, there are forty canons discussing in general the value of each heading within each table, and also thirty sentences linking the content of some of the tables with astrology. Ibn Buṭlān's book was widely appreciated in the Medieval east and west.

ElKhadem, the editor of the Arabic text, has collected fifteen manuscripts in order to prepare his edition. He has provided a French translation, commentary, a few introductory chapters to discuss several aspects relating to the text, several indices and a bibliography as well. ElKhadem has chosen to maintain the original shape of the text, i.e. the tables which were introduced for the first time to Arabic medical texts by Ibn Buṭlān and had consequently a major influence on Arabic medical writers. However ElKhadem has separated the Arabic text from both the French translation and the critical apparatus. Such a separation makes checking the translation and the critical apparatus a difficult job. Moreover, he has not given a critical apparatus for the canons. The work is valuable for those who are interested in Arabic dietetic medicine, the influence of Greek and Indian dietetics on Arabic medicine, and also in the transmission of medicine from Arabic into Latin.

Amal Abou-Aly, Wellcome Institute

K. Y. GUGGENHEIM, *Basic issues of the history of nutrition*, Jerusalem, Akademia University Press, 1990, pp. 130, illus., $22.00.

This is a good introduction to the origin and development of concepts and controversies in the history of ideas about nutrition. It consists of nine essays each dealing with the contribution of one or more leading scientists in a particular period.

In the Greco-Roman period the ideal of "balance" was paramount. Either obesity or excessive leanness were considered to represent departures from the ideal. Galen, for example, in the second century AD set out to restore a proper balance in his obese patients by having them take more physical exercise and eat "foods containing little nourishment". Another writer

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 blood-stream. 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