discussion of the various possibilities and it is not unlikely that it was from this or the writings of Sennert's contemporary opponents that Harvey derived a knowledge of the projectile-theory. For this formed a stock-piece in coeval dissertations on generation.

Impetus, then, as far as used by Harvey, is not necessarily bound up with the scientific revolution in physics and mechanics or any theory underlying it. For it is difficult to overrate the vitalist tenor of Harvey's propositions. Moreover *impetus* is *not the only link* by which his biological ideas are connected or can be visualized as an organic whole. To mention only a few of the most pregnant of Harvey's ideas, there is the concept of working-matter, the concept of circularity, of immanence and of centralization.

The merit of the book under notice would, then, lie in the first place in a number of penetrating analyses of Harveian physiological concepts. In this respect the emphasis laid by the author on the relationship between heat and motion calls for particular attention: in Harvey's view heat is generated and maintained by motion and this helps to understand much that is said and implied in *De motu*. Heat and motion are further shown to be exchangeable: motion engenders heat, but heat also gives rise to motion. This mutuality is presented as significant in the initiation of life in the fertilized germ. The demonstration of the roots of the idea that heat is generated by motion in ancient and notably Aristotelian cosmology and of similar contemporary notions to Harvey is of additional value.

In the second place the work must be appreciated as a serious search for a conceptual link between what sounds mechanistic in Harvey on the one hand and what makes him a determined vitalist of the Aristotelian stamp on the other. This has been attempted through a sustained examination of one of such conceptional links. Inevitably one of the best by-products of this is the defence of Harvey's Aristotelian method. It is here presented as a factor that places Harvey among the leading spirits of his century. For the contention that aggregation and sorting out of facts, that mere induction and the 'clumsy office-clerk methods' (*unbeholfene Kanzlisten-methoden*) of Sir Francis Bacon have launched modern science is, as the author says, behind the times. Harvey, by contrast, developed a constructive and specific biological method which enabled him to anticipate modern tendencies in the chemical and physiological treatment of central problems of biology and pathology. The discovery of blood circulation is a fruit of this method.

The well printed volume contains a number of clear and aptly designed diagrams and its value as a work for reference owes much to a careful index of names and subjects both to the text and the notes. The latter contain important historical-philosophical material. This may be lost, however, to the reader who resents thumbing-exercises, as they are placed far away from the text at the end.

WALTER PAGEL

The General Principles of Avicenna's 'Canon of Medicine', by MAZHAR H. SHAH, Karachi, Naveed Clinic, 1966, pp. xl, 459, illus., Rs. 50.00, $15.00.

This impressive-looking volume by Lt. Col. Mazhar H. Shah, former Chief Medical Officer of the Jinnah Central Hospital, Karachi, merits attention for at least two

reasons. In the first place, it contains a new English translation of Book I of the *Qānūn fī'ṭ-Ṭibb*, the famous *Canon of Medicine* of Ibn Sina (Avicenna). Book I of the *Canon* contains the most general notions of Avicenna's medicine and has never been completely Englished before, for in the previous English translation of Book I by Dr. O. Cameron Gruner[1] the section on anatomy was omitted (here pp. 54–124, which may therefore be considered the most original part of the work). Dr. Gruner's own contribution to the present work is considerable. He has not only written the foreword (pp. i–ii) and compiled the indices (pp. 449–59) but has also self-effacingly encouraged Col. Mazhar to publish the new translation instead of reprinting his own book (p. ix).

Dr. Gruner's translation of Book I of the *Canon* was based on the Juntine Latin editions of 1595 and 1608, 'supported', as he tells us,[2] 'by a study of the Arabic edition printed at Rome in 1593 and the Bulaq edition [apparently that of 1294/1877]'. Col. Mazhar on the other hand used the Cairo edition of the Arabic *Qanun* (1291/1874) and various Urdu translations. He states modestly that his knowledge of Arabic is meagre (p. viii). Since in speaking of the section on anatomy, he says that he has used two Urdu translations 'supported by the Cairo edition in Arabic' (p. iv)—the same expression as Dr. Gruner's—we are probably entitled to conclude that the new translation is in the main from Urdu. Apart therefore from anything else the different sources utilized are sufficient to account for many differences in the two versions, on the respective merits of which the present reviewer prefers not to advance an opinion, and would simply emphasize that in Col. Mazhar's translation we now have Book I of the *Canon* in English complete.

The difficulties of the Arabic of the *Qanun* are of course dauntingly great. This was put forcibly, and perhaps with some exaggeration, centuries ago by the author of the *Kitāb al-Fakhrī* (shortly after A.D. 1300), who himself preferred a simpler style and complained that Avicenna had filled his book with obscure expressions and incomprehensible constructions, adding that this was why the generality of physicians had abandoned it.[3] The unfavourable notice which is paralleled by some others which Col. Mazhar has collected (p. x) is specially interesting in view of the extraordinary reputation enjoyed by the *Canon of Medicine* in medieval Europe and at the present time in parts of the East. It is impossible here to discuss methods by which the difficulties of Avicenna's text may best be met, but one rather small point should be mentioned as involving a question of principle. Whether it is good practice to leave Arabic words untranslated, as Col. Mazhar occasionally does, is at least questionable. There can be no doubt that *sauda* (*saudā'*) meant for Avicenna as for his predecessors and all his contemporaries 'black bile', and if the concept no longer commends itself to medicals, this is no reason for not translating it. (The explanation attempted at p. 37, n. 4, hardly meets the case). Similarly it is surely not beyond the resources of language to assign a meaning to *reeh* (*rīḥ*), as to *rooh* (*rūḥ*), usually translated by Col. Mazhar 'vital force'.

But, in the second place, the author's intention is not simply to commend Avicenna's

[1] *A Treatise on the Canon of Medicine of Avicenna*, London, 1930.
[2] Op. cit., 18.
[3] *K. al-Fakhrī*, Cairo, 1317/1899, 12.

Canon of Medicine to modern English readers. His book is interesting and indeed derives its main importance from its practical purpose. The rather unusual wording of the publishers' notice on the end-paper speaks of 'an increasing need . . . to make an objective appraisal of the *Canon*, so that the development of the medical system based on it . . . is *not* [my italics] pursued.' This is to be understood in the light of the medical situation in contemporary Pakistan in which at present, as elsewhere in the world, there is a shortage of Western-trained doctors, and at the same time a vigorous tradition of what is called Unani (Yunani, i.e. Graeco-Arabic) medicine, theoretically based on Avicenna's *Canon*, which is carried on by a substantial number of non-Western-trained practitioners and is apparently firmly rooted in the goodwill of the people of Pakistan, to whom it commends itself for, among other reasons, its comparative cheapness. Other systems of medicine, Ayurveda and homeopathy, are also practised in Pakistan. The authorities have given much thought as to how the four systems should be dealt with and what priorities should be adopted, in order to provide the best possible health service for the conditions of the country. It was with this in view, and particularly to bring information about the various systems, Western and non-Western, before the notice of the public that a remarkable symposium entitled *Theories and Philosophies of Medicine* was recently published by the Pakistan Institute of History of Medicine and Medical Research,[4] including two papers by Col. Mazhar himself.[5] One will have much sympathy with the difficulties in which the Pakistanis find themselves. Here of course is the main purpose of Col. Mazhar's book, and one finds oneself in general agreement with his contention, which he evidently shares with the publishers. There seems no theoretical justification for according the Unani system separate status in Pakistan, independent, that is, of Western medicine, as Col. Mazhar fears may happen. As he says (p. ix), modern medicine is a continuation of Avicenna's system of medicine, which held a prominent place in European medical schools until the seventeenth century, and was then superseded. This was certainly owing to no prejudice but to the general advance of knowledge. Col. Mazhar, not wishing to see a return to Avicenna, still thinks that a synthesis is possible (p. xxxv), considering that some modern developments, e.g. the distinction between 'vagotonic' and 'sympatheticotonic' types or between 'pyknic' and 'leptosome', bear out conclusions reached by Avicenna or rather opinions held by him on the basis of the old humoral theory. How much a synthesis may come about is not clear to this reviewer. More hopeful seem the suggestions that the principles of Avicenna's medicine might serve as an introductory course for undergraduates and that the Unani system might be the object of research work at postgraduate level (p. xxxvi). If when Col. Mazhar speaks of offering education to the masses in the preservation of health (ibid.) he thinks of simple, easily-read booklets, this too might be a way in which the traditional ideas could be usefully applied. Perhaps the synthesis he would like to see is possible, after all, on the practical level.

Anyone who has been faced with the difficulties of having an English text correctly reproduced in Karachi these days will have a fellow-feeling for the author, who has

[4] Delhi, 1962.

[5] 'The Constitution of Medicine' and 'Principles of the Greco-Arabian System of Medicine for Drug Research', on pp. 92–140 and 141–50 respectively.

fared no better than others in this respect. Misprints are very numerous. Not all are calculated to raise a smile, in the reading of a serious and important book, as is the following (p. xxxv). 'The doctors therefore owe it to ping the public and patients, to assist Government in stop both this rot and finding a proper solution of the man-power problem.' [*Read* stopping].

D. M. DUNLOP

Selected Writings of Lord Moynihan: A Centenary Volume, London, Pitman Medical Publishing Co., for The Osler Club of London, 1967, pp. xiv, 177, illus., 63*s.* 0*d.*

This book, which is designed as a centenary tribute to Lord Moynihan, who was born on 2 October 1865, includes an admirable short biography by A. White Franklin; a charming note by W. R. Bett about the meeting of the Osler Club on 19 March 1930 at which Moynihan was a guest, and made a never-to-be-forgotten contribution to the discussion; a comprehensive list of his books and articles; and a note by Geoffrey Bateman on Moynihan's biographer, Donald Bateman.

The selection of the contents, only ten out of the list of 200 publications, with the intention of presenting a comprehensive picture of Moynihan's personality and interests, must have been an unenviable task: and the small group responsible are to be congratulated on the result of their deliberations.

The Ritual of Surgical Operation was an obvious choice; the papers on *The Pathology of the Living* and *The Gifts of Surgery to Medicine* indicate his appreciation of the potential of clinical research in its earliest days; the Murphy Oration and the Hunterian Oration show his sense of history, and though he did not refer directly to it, of his own place in 'the Great Procession'; and in many of the papers there are references to his professional ideals, and his advocacy of collaboration rather than competition between physicians and surgeons in the interests of their patients. One only regrets that room was not found for the Harveian Oration to the Medical Society of London in 1926, *Before and After Operation*, since it is not generally recognized how extensively he applied physiological principles using methods which are commonly regarded as much later innovations.

It is an elegant little volume, well suited to its purpose; and it is particularly pleasing that Franklin and Bett who in 1928, while still students, founded the Osler Club of London, should participate in its production.

JAMES PATERSON ROSS

Bulletin de la Société Française d'Histoire de la Médecine, vol. I (1902), photographic reproduction, Paris, Ateliers R. Lacer, 1967, 48 F.

Recent technical progress greatly benefits historians. Due to new methods of reproduction for which the term *Reprography* has been coined, old and out-of-print texts leave the library shelves to reach the historian in his own study, thus providing working tools difficult to obtain in the past.

The Société Française d'Histoire de la Médecine is publishing in facsimile its *Bulletin* (1902–1951), which has been out of print for many years, at the rate of two volumes monthly. The first volume contains articles by such well-known historians as Paul Delaunay, Victor Nicaise and Eugène Gley. Among the thirty-four original papers