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one; and when he considered the physics of light separately he could not make it fit into his physiological concept.

This dilemma is beautifully portrayed by Dr. Siegel. He also makes it clear how Galen was a child of his time in that the dilemma was not his alone but that of all classical Greek thought on the nature of perception. Only with the gradual evolution of appreciation of the different aspects of the problem through such Arab thinkers as Avicenna and Alhazen did the physical problem gradually become separated from the physiological, Kepler making the distinction in the formation of the retinal image. The relation between the physiology of vision and its psychological aspects still presents insoluble difficulties.

With regard to the ear, one is astonished to realize that Galen considered the ear-drum to have no relation to hearing. Not only this; he failed to describe all the ossicles of the middle ear. One is equally astonished to realize that he did describe the delicate structure of the inner ear in the petrous bone, and called it 'cochlea'. This he revealed by chipping away the petrous bone in thin layers. Perception of sound he attributed to the psychic pneuma being spread out over the coiling cochlear by the auditory nerve.

Smell was directly produced—according to Galen—in the extension of the brain present in the olfactory bulb by particles inhaled into it. Taste he allotted to the terminations of the glossopharyngeal nerve. Touch and temperature sense Galen attributed to moderate stimulation of the nerves to the skin, violent stimulation producing pain.

Dr. Siegel concludes his book as follows:

It has been pointed out that Galen's studies on sense perception, especially on vision, have rarely been adequately appreciated. His studies, so rich in original observations and valuable suggestions were hardly systematically pursued. This was already the case during the time of late antiquity, and remained so during the Middle Ages and the Renaissance. To mention only one instance: Galen's detailed knowledge of the structures of the eye remained widely unknown: even Vesalius published in his *Fabrica* an anatomical sketch of the eye which would have been already obsolete in Galen's time.

That such a statement can be made about Galen; the most flattered and adulated anatomist of all time, goes to show what a large gap always lies between lip-service and true appreciation. Dr. Siegel himself in order to produce this work has repeated a number of Galen's dissections, a procedure which might well have increased the appreciation of Galen's anatomy if it had been performed some centuries ago by those who read his works.

Be that as it may, Galen emerges from Dr. Siegel's book with freshened honours as a practical experimental scientist, a role for which he should always be remembered.

KENNETH D. KEELE

*Education in the History of Medicine*, ed. by JOHN B. BLAKE, New York and London, Hafner, 1968, pp. 132. \$7.50.

Both the Josiah Macy Jr. Foundation and the National Library of Medicine have been active in encouraging education in the history of medicine by means of generous grants for research fellowships and general financial support for existing or newly

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established teaching programmes. In June 1966 these two organizations jointly sponsored a conference on Education in the History of Medicine, the proceedings of which have been edited by Dr. John B. Blake, Chief of the History of Medicine Division of the National Library of Medicine. The twenty-one participants, all Americans, under the Chairmanship of Dr. Lloyd G. Stevenson, included many other distinguished medical historians, one historian of science, and several deans of medical schools. There were five papers, each followed by two prepared commentaries and an informal discussion.

After Dr. Stevenson, in reporting and welcoming the growing interest in the history of medicine, had reminded his audience that history itself achieved university recognition relatively recently (Charles Kingsley, appointed in 1860 first Professor of Modern History at Cambridge, was a popular novelist), the Conference discussed what medical history should be taught to medical students and who should teach it, how and where medical history could fit most comfortably and profitably into the university complex, and how the history of medicine could be supported and promoted. The discussions were lively and the views expressed were so diverse that it is difficult to claim that firm conclusions were reached on any of the more controversial and more important issues; it is these wide differences which make the volume interesting reading, for they emphasize that the climate of university opinion is far from uniform even within a single country.

Certain attitudes and approaches may be said to have received majority approval, though the views of the dissentient minority should not be ignored. Medical history should be taught to medical students, but as an elective course, which should preferably attempt to cover no more than two historical periods in some detail and to include an account of the general historical and social background of each period. Ideally the teacher should be medically qualified, trained in a department of history, a classical scholar and a competent modern linguist. Since few men in any generation will combine these qualities, the teacher should either be medically qualified with some supervised experience of historical research or he should be an historian who has been 'exposed' to medicine or at least to the biological sciences. Such a man could effectively be full-time head of a department but since the field is so vast that no man, whatever his background, can have a scholarly knowledge of more than a small part of it, the department must enlist for teaching and research the full- or part-time collaboration of men trained in a variety of disciplines, medical and non-medical.

A department, with endowed research fellowships, would, it was agreed, provide a necessary focus for the growing interest in medical history among sociologists and general historians as well as in medical schools. There was no agreement as to whether the department should form part of the medical school, should be affiliated with a department of the history of science where one exists, or should join the history faculty. Each speaker was clearly influenced by what he knew to be practicable in his own university.

The problems in Britain differ in some respects from those so effectively elaborated in this book, yet many of them are similar. In both countries the right men will come forward to fill the appointments when these and research fellowships are established. Medical history will develop most fruitfully in British universities if its sponsors

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ensure that in each university any new appointments are grafted on to that existing department—history, history of science or medicine—which in that particular university offers the right intellectual environment, and that no attempt is made to impose a uniform pattern throughout the country.

As Dr. Lloyd Stevenson says, 'if curiosity is the parent of "pure" science, love of the past or curiosity about it may be the parent of a kind of history which lacks ulterior motive'. The utility of medical history is surely no more relevant than the utility or otherwise of history in general. The various arguments for and against the utility of medical history often entered the discussions in this conference. One is left with the impression, as one was after reading the New York Academy of Medicine's Monograph on this subject in 1957, that every man is temperamentally an historian or an anti-historian by conviction and that the arguments are mere rationalizations. However medical history is gaining ground in this country and those who are active in promoting this development will enjoy reading this book.

ARTHUR ROOK

*Medicine and Culture* (Proceedings of a historical symposium organized jointly by the Wellcome Institute of the History of Medicine, London, and the Wenner-Gren Foundation for Anthropological Research, New York), ed. by F. N. L. POYNTER, London, Wellcome Institute of the History of Medicine, 1969, pp. vi, 321, 60s.

We are all familiar with the common run of congresses, at which experts read papers to other experts, followed by discussions which contribute little beyond clearing up exactly what the author meant, the main value of the proceedings lying in the informal meeting of colleagues after the business is over.

The first point of importance of this occasion was that it was organized on new lines, in that no papers were read; they had been circulated in advance, so that all the participants could read them at their leisure. This was to give them time to think over what they would like to say about them, instead of having to decide what to say on the spur of the moment (which, because most of us find out what we really wanted to say only later, in the bath, is often unsatisfactory). The second innovation was that Dr. Poynter sent a 'Note to Participants', detailing exactly what the object of the conference was. These notes are most remarkable, in that they pose a wholly new and original attitude to the very nature of Medicine. After postulating that unless history relates to present problems it may be mere antiquarian study, the notes lay down the problems of the way in which civilizations of diverse sorts have produced systems of medicine equally diverse, and of how these 'medicines are to contribute to rapidly changing civilizations'. The details of these instructions, on pp. 2 and 3, constitute a stimulating challenge to medical history. The third feature of the book is that it consists of the leading papers circulated, in full, and the subsequent discussions reproduced from tape-recordings. This, not unnaturally, was a difficult and time consuming process (and was why publication was delayed), and it also led to some interesting misprints, as on p. 289, line 16, which are internal proofs of the genuineness of the procedure.

It may be said at once that the results, in what was produced, do not live up to Dr. Poynter's intentions. In the first place, the papers, although no doubt read beforehand by all the participants (except at least one, which was not produced in