

Book Reviews

Dr. Brooke serves well to reveal him in a more just and favourable light than that presented by many earlier and more recent writers. The message for medical historians is clear when he writes 'Strangely the diagnosis of porphyria which exonerates George III from so much speculative psychologizing brings him nearer to us as a human being'. An important function of the doctor historian is to see that justice is done to individuals who lived at a time when they themselves could not benefit from the medical knowledge of today and who may well have done their best while suffering bodily misfortunes and dreadful attendant pains.

Claude Bernard et les Problèmes de son Temps, by JOSEPH SCHILLER, Paris, Les Éditions du Cèdre, 1967, pp. 230, port., no price stated.

The monumental figure of Claude Bernard still remains tantalisingly shrouded in mists of mystery; for Claude Bernard fell into no clear-cut category. He was so truly an original that merely to label him 'scientist' rather than 'philosopher' does not do justice to his picture. The two ways in which clarification of Bernard's elusive greatness can be attained consist either of studying the details of his works, or of elucidating the contemporary context within which and upon which he worked. This latter is Dr. Joseph Schiller's method of exposition.

In this book Dr. Schiller brilliantly describes Bernard's position in the spheres of contemporary science and philosophy. The work is not a biography. A skeleton of biographical fact is given in a brief sketch at the beginning, supplemented by an equally brief outline of Bernard's most important works. Full appreciation of the discussions that follow is therefore enriched if the reader has some knowledge of Bernard's life such as is to be found in Olmsted's well-known biography.

In his first chapter Dr. Schiller defines Bernard's attitude to vivisection. Summarizing its history from Galen onwards, he draws attention to the interesting fact that vivisection before Bernard had paid its greatest dividends in knowledge of the transport systems of the body, of the vessels and nerves. In the case of the nervous system this is because, 'The nervous system is the most anatomical of physiological systems, and its comprehension has no need of physics or chemistry'. The work of Charles Bell and Bernard's great protagonist, Magendie, provided a case in point. Thus when Bernard wrote, 'Always pursue the idea that the physical or chemical phenomena of the organism are dominated by the nervous system;' he was expressing the spirit of his day and at the same time accounting for the fact that between 1843 and 1849 he produced thirteen communications on the physiology of the nervous system, all based on the results of experimental vivisection. It is a measure of Claude Bernard's genius that as a result of his deliberations on methods of research he reversed this traditional position and succeeded in turning chemistry itself into a method of 'vivisection without mutilation' through his experimental use of poisons such as curare. 'This action of poisons', he wrote, 'permits us to achieve a kind of infinitely delicate vivisection since it allows us to localise the phenomena of life'. It was by his manipulations of this chemical instrument of vivisection that he localized the neuro-muscular junction, and discovered glycogenesis in the liver.

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Dr. Schiller similarly illuminates Claude Bernard's thought in each chapter which describes his outlook on such problems as: structure and function; the chemistry of Bernard's times; the problem of digestion; and in particular Bernard's own discovery of hepatic glycogenesis.

In the last twenty years of his life Claude Bernard gave increasing thought to synthesizing the facts of physiology, i.e. to generalization. From this phase emerged his great concept of the 'milieu intérieur'. Claude Bernard saw life as a process of conflict between the external and internal environments; a conflict which is resolved by the creative harmony of life, as opposed to the destructive discord of death. In achieving this great synthesis of physiological phenomena Claude Bernard emerged as neither a vitalist nor a materialist. Indeed, his great generalization reveals startling appreciation of the cybernetic factor in physiology.

Dr. Schiller's scholarly and lucid presentation of Claude Bernard's place in science makes the reader realize how his thought has perfused the physiological work not only of his own nineteenth century but our own twentieth. It will be found particularly valuable as a key for those who want to approach Claude Bernard's work from the outside.

KENNETH D. KEELE

Claude Bernard and Experimental Medicine (Collected papers from a Symposium commemorating the centenary of the publication of *An Introduction to the Study of Experimental Medicine* and the first English translation of Claude Bernard's *Le Cahier Rouge.*), ed. by Francisco Grande and Maurice B. Visscher, Cambridge, Massachusetts, Schenkman Publishing Company, 1967, pp. 120, illus., \$8.98.

The richness of Claude Bernard's contribution to medicine is reflected in the many different aspects from which his work can be fruitfully viewed today. Whereas Dr. Schiller places Bernard in the context of his times and place, this symposium held in 1965 at Minnesota in commemoration of the centenary of the publication of his *Introduction to the Study of Experimental Medicine* lays greatest emphasis upon the effects of Claude Bernard's work on twentieth-century physiological research.

The Symposium opens with Reino Vistanen's brilliant paper entitled, 'Claude Bernard and the History of Ideas'. This admirably explains Bernard's conviction that, 'when physiology is sufficiently far advanced, the poet, the philosopher and the physiologist will all understand each other'. That Bernard should declare that 'the artist will find in science a more stable foundation, and the scientist will draw from art a more certain intuition', reveals in him striking similarity of outlook with that expressed by Leonardo da Vinci in his *Treatise on Painting*. Such Bernardian views will come as a surprise to many, but Vitanen shows how enthusiastically they were explored by Bernard himself and examined by contemporary artists. Claude Bernard's fertile ideas spread but fitfully outside France. E. Harris Olmsted describes how, 'Bernard's reputation in England and America at first rested almost entirely upon his factual physiological discoveries, his advocacy of the experimental method and its basic principle, determinism. Almost no attention was paid to the concept he had declared fundamental to general physiology, that of the milieu intérieur . . .' Only at the turn of the century did this concept find appreciative utilization at the