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phical thought begins in Chapter IV and culminates in Chapters VII and VIII, where Staum is at his best with an analysis of Cabanis's *Rapports du physique et du moral de l'homme*. Two later chapters (IX and XI) complete the argument for Staum's first thesis with comments on the works of some of Cabanis's contemporaries who pursued themes similar to those treated in the *Rapports*, and finally with a discussion of Cabanis's posthumously-published letter on "first causes".

Staum's second thesis (developed especially in Chapters IV-VI and X) is less easily characterized than the first one, and less successfully argued. Negatively, Staum holds that Cabanis's socio-political position was not derived from his philosophical doctrines, but neither were his doctrines derived from his socio-political position. Positively, however, Staum shows that a similar tension animates both the philosophical and the political thought of Cabanis – a tension arising from the valorization of the "natural" and the "free" on the one hand, and a justification of "rational" intervention and "regulation" on the other hand. How these contradictory elements could come to coexist in both these spheres of Cabanis's thought, and to what extent they generally characterized the political and philosophical doctrines of this period, are questions not thoroughly explored by Staum. The issue is treated purely as a biographical problem concerning the individual, Cabanis; and there the matter rests. Staum has no conceptual tools to take him beyond this limited framework, and he is dismissive of two alternative methodologies that might offer such tools: marxist historiography (of which only the most rigid stereotype is presented without any exemplars of this position being instanced), and Michel Foucault's analysis of the relations between power and discourse (which is travestied as a conspiracy theory). So, on balance, a great opportunity is lost and the matter is left unclear.

This limitation aside, however, historians of medicine who are interested in the revolutionary period in France should find a considerable amount of useful material in Staum's book. The analysis of Cabanis's medical writings and of his involvement in the reform of medical education and the hospital system is lucid and informative. Staum explicitly notes his points of agreement and disagreement with other recent studies in the area (particularly those of Sergio Moravia), and the scholarly apparatus of his book is competently elaborated. Finally, it is worth mentioning that the volume in its physical aspect is well-bound, pleasantly-designed, and free of conspicuous typographical errors.

W. R. Albury

School of History and Philosophy of Science
University of New South Wales

G. L'E. TURNER, *Essays on the history of the microscope*, Oxford, Senecio Publishing Co., 1980, 8vo, pp. [viii], 245, illus., £14.95 (paperback).

In recent years a great deal of interest has been shown in the history of the microscope, not only by scientists and historians of science but also by museum curators, members of the antique trade, and the general public. The number of microscopes constructed must be huge, and they are found all over the world. Old microscopes have become a symbol of science and eminently collectable because of their intrinsic

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aesthetic appeal. There is, therefore, a need for the availability of any information which we have on their development. There has been a great resurgence of interest in the last fifty years in the history of science but, as Dr. Turner states, very little attention has been paid to the actual artefacts of science. Much can be learnt from them by close and scientifically controlled study, but it seems that of all the papers published in the history of science only about one per cent are devoted to instrumental matters. Even this small amount of published information has appeared in very widely dispersed learned journals, some of which may be accessible only to the fortunate few who work in large centres with adequate library facilities. This is true of the twelve essays in this book, which were originally published in widely differing journals, and their collection into a single volume is therefore to be welcomed. The author, G. L'E. Turner (from the Museum of the History of Science, Oxford), is a well-known expert in the development of optical instruments, especially the microscope, and the material presented here represents a major scholarly contribution to our knowledge of the development of microscopy.

The essays fall into three major categories. The first group of three essays, devoted to the study of the history of the instrument in a rather bibliographical manner, includes 'The history of optical instruments – a brief survey of sources and modern studies'. This is particularly valuable for its extended notes and bibliography and would form an obvious starting-point for most studies in this field.

The second group of six essays is concerned with the instrument itself. The first paper is devoted to the study of decorative tooling on the leather tubes of seventeenth- and eighteenth-century microscopes. The author shows that the patterns cannot be used for ascribing instruments to individual makers, as commonly supposed, but that all tubes probably came from one or more tube-makers who supplied the trade. Other essays in this group survey the brief role of the single-lens jewel microscope in the early nineteenth century, give an account of Powell and Lealand (perhaps the most famous partnership in microscope-making), and assess the importance of the rulings of F. A. Nobert.

Perhaps the most significant essay in the book is the last in the group, 'The microscope as a technical frontier in science'. In this Turner uses information provided by the instrument itself on the capabilities of its lens systems to resolve fine detail together with a knowledge of the date of construction to construct a date/resolution curve. From this the question of assessing the importance of any given microscopical discovery is made more meaningful. If the resolution produced by an instrument at a certain date is closely followed by a discovery with the instrument which requires that degree of resolution, then clearly research is running in parallel with instrumental development. If, on the other hand, a significant number of years follows the attainment of a particular resolution before any observation requiring that resolution is made, then it seems probable that a conceptual and not a technical problem hindered the research. This idea is illustrated by reference to developments in bacteriology and the study of the structure of metals.

In the final group of three essays, devoted respectively to Henry Baker (the founder of the Bakerian lecture), to microscopical communication, and to the role of scientific societies, we have studies devoted to the social background of the develop-

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ment of the use of the microscope. In the second essay the author stresses that the rather slow development of microscopical optics up to about 1830, together with the smallness of the scientific community, led to little pressure for the development of methods of illustrating microscopical discoveries for a large readership. Once the achromatic lens was established, and with the technical developments of the later nineteenth century, there was a clear need for widespread dissemination of the information provided by the new technology. This was partly achieved by methods for accurate drawing, coupled with lithography. Real progress, however, was to await the development of photography and its application to the illustration of microscopical publications, first by methods such as the collotype and later by the half-tone plate. All these are surveyed with particular reference to the publications of the Microscopical Society of London (later to become the Royal Microscopical Society).

We must be grateful to Senecio Press for bringing together this stimulating collection of work in the history of one of our major scientific instruments. It is all the more welcome because the essays contain one of the most extensive bibliographies on aspects of microscope history. Let us hope that their re-publication will stimulate even more research into the instrument's development. Many collections are available and their instruments form a vast treasure house waiting to yield up its secrets.

This book of essays is to be highly recommended and should be required reading for all students of the history of medicine and science.

S. Bradbury
Department of Human Anatomy
University of Oxford

ROGER L. WILLIAMS, *The horror of life*, London, Weidenfeld & Nicolson, 1980, 8vo, pp. xiv, 381, illus., £15.00.

Professor Williams has a simple theme, documented in great detail in his five biographical case studies of Charles Baudelaire, the Brothers Goncourt, Gustave Flaubert, Guy de Maupassant, and Alphonse Daudet: all these authors had a "horror of life", experienced and expressed throughout their lives, and translated into their literary visions. Each in his own way lived a tortured, morbid, self-lacerating existence, racked with psychological anguish and physical pain. They were all more or less isolated, unable to form generous emotional relationships, and tending strongly to misogyny (Professor Williams attributes this largely to their ambiguous idealizations of powerful mothers). They saw life as a cheat, optimists as dupes, and felt enduring distaste for the world of post-Revolutionary France all around them: the masses, democracy, materialism, Jews, Socialists, etc. Professor Williams leaves us in no doubt as to his opinion of their standing as human beings. He concludes his essay on Maupassant by stating he was "neurotic, immature, pathetic man", and this verdict holds for them all.

The main thrusts of the argument are twofold. First, Professor Williams is concerned to show how this warped, self-mutilating misanthropy was rationalized by these writers as the hallmark and birthright of artistic genius. The truly inspired writer exposed suffering and caused suffering; and above all he himself had to