which the authors fully meet their initial promise. This is a book which I strongly recommend to *everyone* — be they microscopists, students in biological subjects (I for one certainly would have liked to have such a book in my student days), phycologists, protistologists, natural historians, photographers, painters, or . . .. Last but not least, the print quality is of a high standard, and the price is contained for a book of this kind — I think that Biopress deserve a word of praise for this.

Gianfranco Novarino

BRIAN BRACEGIRDLE. 1996. Quekett Microscopical Club. ISBN 0-9514441-7-4. *Notes on Modern Microscope Manufacturers.* Hard laminated cover, pp xiii + 88 Fully sewn. Price £11.50 nett.

I greatly enjoyed reading the present book, which is the result of Brian Bracegirdle's interest and long experience representing the summation and collation of his findings from extensive research over a period of thirty-five years or more. During this time he has not only studied makers catalogues and many publications but has catalogued major collections of microscopes and studied the instruments themselves. Perhaps the unique feature of this present listing of microscope makers and their products is that **all** dates ascribed to microscopes are derived from their serial numbers which have been checked against actual documentary evidence.

The majority of scientific instrument makers active up to the middle of the nineteenth century have been described and listed in some detail in the SIMON index which has recently been published. Up to now there has not been anything comparable for those of us interested in the more recent history of the microscope and the Dr Bracegirdle's book is thus more than welcome. The introduction is most useful and interesting in itself, since it provides a survey of the background knowledge which is essential to a proper study of the history of scientific instrument making. The author rightly emphasises that good general knowledge is essential to correct understanding. This he takes to include some historical knowledge of the period, since politics, social conditions, wars, *etc*, may well prove important in explaining otherwise obscure facts. To help the historian of the microscope Dr Bracegirdle includes in this introduction extended and annotated bibliographies dealing with this background, and with the manufacturing technology available at various times. He also provides a source list of works in the history of scientific instruments and of the microscope itself. In particular, he emphasises the necessity of consulting the makers own catalogues and of looking at the microscopes themselves. Source lists are given for the catalogues and the major public collections which are available for study are listed. This introduction alone makes the book a most valuable reference source; with its help those of us who are amateurs in the field of microscope history will be able to avoid some of the major traps for the unwary!

The bulk of the book consists of an alphabetical listing of makers, each entry providing their dates and various address. Some of the entries are of only a single line — others devoted to well-known makers extend to several pages. Using one of my own microscopes as an example I was able to discover very quickly from the serial number that my Van Heurck must have been sold in 1892 (and was therefore very early, since the first listing of this model dates from 1891). The entries for each maker are not limited to microscopes. Many interesting facts about various accessories were included by the makers in their listings and are mentioned here. For example, it is fascinating to browse amongst the entries and see which makers were supplying firstly oil and gas lamps and at what dates the arc lamp, 'Pointolite and the ribbon filament lamp appeared, along with more familiar forms of low-voltage electric lamps. The prices quoted also are of great interest. For example, a Powell and Lealand No 1, listed in 1871, would have cost £35 for the monocular version but this increased to £189 if the binocular outfit was wanted! Similarly, the Beck 1884 catalogue listed the 'International' complete outfit at £220, of which £50 was for the stand alone, the rest for accessories.

This book is published by the Quekett Microscopical Club with assistance from the generosity of the Renaissance Trust and is a worthy addition to the series which contains the recently published *Index of the QMC Journal* by Michael Newstead. I regard Dr Bracegirdle's book as essential reading for any microscopist who appreciates the history of the instrument — this must surely include all Quekett members! Even if no specific research project is in mind, the incidental detail in the entries

makes for fascinating reading and provokes thought. I expect that the publication of this edition may well cause more factual data to become available and that we will be able to look forward to an enlarged second edition in the future.

Perhaps even at some later date a comparable volume devoted to the electron microscope and the various forms of alternative microscopy will be produced; I hope so!

Savile Bradbury.

Please Note: This book is available only from the sole agents, Savona Books, 9 Wilton Road, HORNSEA, North Humberside HU18 1U.

T. G. Rochow and P. A. Tucker. *Introduction to Microscopy by Means of Light, Electrons, X-rays or Acoustics.* 2nd edn. Plenum Press. New York and London, 1994. ISBN 0-306-44684-7. pp xvii + 455. American price $49.40.

This is a revised version of a well-known book with a very similar title by T. G. and E. G. Rochow, published originally in 1978. Like its predecessor, the new edition attempts to survey an extremely wide field covering almost the whole of microscopy. It opens with a very brief account of the history of the instrument and then passes on to discuss basic principles, and simple and compound instruments for use with both transmitted and reflected light. An impression of the attempt of this book to be wide ranging may be gained from a list of the later chapters. These cover polarised light, fibre microscopy, the microscopic properties of crystals, confocal scanning microscopy, micrography, contrast mechanisms, interference microscopy, stage design, fourier transform infra-red microscopy, the TEM and SEM, emission microscopes, X-ray and acoustic microscopy as well as specimen preparation. All this in 450+ pages, so that it is obvious that each topic can only be treated in the very briefest outline and much has necessarily had to be omitted.

Each chapter concludes with a very brief summary and has a list of references, which are gathered together at the end of the book. For a rapid 'bird's eye view' of a topic this book will undoubtedly prove very useful. The reader who wishes to gain an insight into what, say, atomic force or scanning tunnelling microscopy is, will find the relevant information here, together with short remarks on their pros and cons for specific uses. Inevitably, some of the information is now becoming of historical interest. For example, the Watson interference objective and the Zeiss/Jena 'Interphako' systems are no longer available. Almost inevitably there are various errors — *eg* there is an incorrect description of Köhler illumination on page 28 where it is stated that the field diaphragm is focused into the plane of the condenser aperture diaphragm. Strangely enough this mistake is not repeated on the next page where, in describing the setting up of this type of illumination, the reader is instructed to focus the field diaphragm into the correct conjugate plane. In my opinion there are too many photographs of actual microscope stands; such illustrations add very little to the usefulness of the text. Nevertheless, this book is a useful compendium which will serve as a starting point for the reader who wishes to learn about the various salient features of some new area of microscopy.

Savile Bradbury.

R. F. Smith. *Microscopy and Photomicrography — A Working Manual.* 2nd edn. CRC Press, Times Mirror International Publishers. 1994. ISBN 0-8493-8682-9. Price £30.50.

As the author states in his foreword:

> 'The microscope is one of the most versatile instruments available to science. One would be hard pressed to find a field of science where the microscope is not used. However, it is also one of the most misused, abused and misunderstood of the precision instruments, and for this reason the author has attempted to compile a simple and practical working manual of those who use a microscope in their daily routine.'

In this aim I think that the author of this book has been very successful. It is clearly intended for use at the bench, being bound in flexible covers with a lay-flat spiral binding. In the first few chapters Dr Smith explains clearly the field and aperture diaphragms and their adjustment and takes the user through the stages of setting up Köhler illumination. He uses illustrations of a standard laboratory microscope to clarify each stage of the process. Included are pictures of three different types of specimen to show the effect on contrast and resolution of variations from the correct aperture diaphragm setting. There is a brief explanation of the Abbe theory, followed by