Under such circumstances nothing can be said by way of criticism, except to remark that if all Mr. Romero's matter is of the same quality as his description of rubber-yielding trees on p. 378, the book stands in much need of careful revision. J. R. J.

OUR BOOK SHELF.

Practical Mechanics: an Elementary Manual for the Use of Students in Science and Technical Schools and Classes. By Sidney H. Wells, Wh.Sc., A.M.Inst.C.E. Pp. xii + 220. (London: Methuen and Co., 1898.)

THIS book is really a handbook for students who make those quantitative experiments in a mechanical laboratory which are now part of the Applied Mechanics Course of the Science and Art Department. The laboratory system of teaching this subject has passed through all its trials, and has taken its rightful place, not merely in evening science schools, but in the engineering classes of the most pretentious technical institutions in every part of the world. It seems to us that this little book will prove to be a useful guide to teachers. A good teacher will arrange his own methods; he will probably design much of his own apparatus, and he will write out with his own hands the instructions to students using the apparatus, giving up this most important part of his work to no lieutenant, however clever and ingenious. He will, in fact, arrange his apparatus to suit his students and the character of the rest of his teaching. Even he, however, must welcome a description of the apparatus and its uses which have suggested themselves to such an experienced teacher as Mr. Wells.

We have one objection to this book, and it is serious. The apparatus illustrates static laws of force, and force is recognised as a space rate of the doing of work; but we find nowhere any attempt to give to students the fundamental notion of mechanics, that force is a time rate of change of momentum. To supplement what Mr. Wells has given, twenty pieces of well-known apparatus might easily be mentioned which require no special design to fit themselves to quantitative laboratory work, and without a description of such apparatus it seems to us that this book is very incomplete. J. P.

Skiagraphic Atlas: showing the Development of the Bones of the Wrist and Hand. For the use of students and others. By John Poland, F.R.C.S. Pp. 40 and Plates. (London: Smith, Elder, and Co., 1898.)

THIS handy volume is a reprint of a portion of a larger work by its author ("A Practical Treatise on Traumatic Separation of the Epiphyses." London: Smith, Elder, and Co., 1898) which deals with the skiagraphy of the wrist and hand, as revealing *in situ* the stages in ossification of their supporting skeleton. There are nineteen skiagraphs in all, which represent successive phases in the process named at periods between and including the first and seventeenth years, and as a frontispiece there is added a woodcut delineating the isolated hand skeleton at fifteen and a half years, with each bone fully named for comparison with the body of the work. The skiagraphs, with the exception of that of the hand of the author's son, taken by Mr. Swinton, are the work of Mr. C. Webster, and all are excellent and among the best we have seen. A short introductory account is given of the anatomy and growth periods of the several bony centres, with accurate measurements where necessary; and each illustration is accompanied by a brief statement of its salient features. Since, concerning these, some of the author's observations are at variance with what is customarily taught, his book cannot fail to be a useful work of reference both to the anthropotomist and surgical anatomist. The author remarks in his preface that he hopes "in the near future all the bones of the body may be thus portrayed"; and if he should be as successful with the pelvis as he has been with the hand, we would earnestly recommend him and his publishers to lose no opportunity of making the work known to the general public, and of thus forcing home facts which may perchance be brought to bear upon the too prevalent tendency towards premature cycling by young children, which, if not checked by some such salutary means, would seem likely to threaten the rising generation with disaster.

A Manual of Bacteriology, Clinical and Applied. By Richard T. Hewlett, M.D., M.R.C.P., D.P.H., &c., Assistant in the Bacteriological Department, British Institute of Preventive Medicine. Pp. viii + 439. (London: J. and A. Churchill, 1898.)

THIS book should take a very creditable place amongst the smaller manuals of bacteriology which have appeared in recent years. The author has had considerable acquaintance both with the practice and the teaching of his subject, and he has formed just conclusions as to what he should include in his book, and what he should omit. He has included those methods and facts which it is essential for the student to know, with a sufficient amount of the abstract science to enable him to grasp methods and facts intelligently: he has omitted a great mass of scientific detail with which it is needless to burden the student at the outset. The book is thus of moderate compass; it is eminently practical, and its aims are directed to clinical medicine and hygiene in particular. The usual introductory chapters are short, but explicit and accurate. Perhaps the chemistry of bacteria and their products might have been accorded more space, in view of its increasing importance; but the subject of nitrification is well and clearly treated. Methods of cultivation and staining are so plainly put, that the volume becomes a sufficient handbook for laboratory work. The structure and mode of use of oil-immersion lenses is very properly described and illustrated by diagrams. A short chapter on immunity and antitoxins puts this difficult subject as lucidly before the student as the present state of knowledge permits. The principal pathogenic organisms are then described in detail in some 150 pages. The facts are well put, and appear up to date, though the order in which the different bacteria are dealt with is somewhat erratic. Thus *Bacillus aerogenes capsulatus* appears amongst pyogenic and septic organisms; while *B. oedematis maligni*, its close ally, appears nine chapters further on amongst the anaërobes. The enormous importance of streptococci in clinical medicine should, we think, have led to something more than their summary treatment in about four pages. The writer discusses the question of the "pseudo-diphtheria" bacillus at some length, and evidently inclines to the view that it may be only a modified diphtheria bacillus. Under the head of scarlet fever the views of the veterinary profession as to the nature of the so-called "Hendon disease" are adopted in preference to those of the Local Government Board experts, and this without any adequate discussion of the facts: it would have been wiser, in a book of this sort, to omit the question altogether. In the concluding chapters Dr. Hewlett gives a short account of the bacteriology of water, air, and soil, and also of sewage, milk, &c., with a description of the chief methods employed. Antiseptics and disinfectants form the subject of another chapter, and the volume concludes with an account of antitoxins, vaccines, and other bacterial remedies. The illustrations are mostly reproductions of microphotographs, and are fairly good, though not unduly numerous. The book appears to us, on the whole, to be one of the best of the smaller manuals on bacteriology with which we are acquainted, and may be taken by the student as a trustworthy guide for laboratory work.