to have daughters has no resource but to find a still weaker husband. The thesis, if accepted, should beget humility in those male parents who have large families of lusty sons.   J. A. T.

RÖNTGEN RAYS IN MEDICINE AND SURGERY.

The Röntgen Rays in Medicine and Surgery as an aid in Diagnosis and as a Therapeutic Agent. By Francis H. Williams, M.D. (Harvard). Pp. xxxii + 704; 401 illustrations. Second edition, with appendix. (New York: The Macmillan Company; London: Macmillan and Co., Ltd.) Price 25s. net.

THE second edition of this excellent work was called for because the first was unexpectedly exhausted within three months, and we congratulate the author upon his deserved success. Only those acquainted with the subject can appreciate how difficult it is for any author to give a correct view of the progress of such a branch of science as the X-rays, because of the great advances made within a comparatively short period, the number of authors engaged in research and the nature of the subject itself. As might have been expected, Dr. Williams fully understands this, because in his preface he states that the work is rather a report of progress than a final presentation of a growing subject. Further, owing to the short time at his disposal for the preparation of a second edition, he has only been able to add some forty pages, chiefly on apparatus and the therapeutic uses of the X-rays. This will be found in the appendix.

Dr. Williams very properly introduces his subject by reference to the principles of physical science, and, without overburdening the student, he tells what is necessary for their appreciation. Next he deals in the most practical way with the equipment necessary for photographic and therapeutic work. Having thus prepared the way, he enters into a full description of the normal conditions of the cavities of the body so that the observer may be able to appreciate deviations from the normal, a principle which will be thoroughly appreciated by all those who are seeking for information from the clinical aspect. The pathological changes are well described by photographic illustrations, diagrams and histories of selected cases.

A noticeable feature of the work is the amount of attention devoted to what might be called the medical aspect of the subject as opposed to the surgical. This is interesting, because for a long time many who believed in the value of X-rays in the detection of fractures, dislocations of the hard structures and foreign bodies were inclined to think that the use of X-rays would be limited to these. If any are still of this opinion we commend them to a perusal of this work.

The third great step in the development of X-rays in medicine was their application in diseased structures, and the present position of their therapeutic action is frankly and fairly stated in these pages.

While it is true that the work gives a very strong representation of the methods employed in America—indeed, the illustrations themselves show that the work has not been produced in any European laboratory—still

the labours of others have not been neglected. In future editions the work might be enhanced in value by a reference to what has been done in this country and the European schools of medicine, a fact which is admitted by the author in his preface, because he states that he had intended to include as complete a list as possible of the publications on the subject. This was not found possible on account of its extent, so he adds that had he foreseen this he would have referred in the text to many other important papers.

The work is well written by one thoroughly familiar with the subject, is profusely illustrated, and to those who desire a guide to the study of the subject the work may be thoroughly recommended; and this remark applies to students and practitioners.

OUR BOOK SHELF.

Elementary Geometry. By W. C. Fletcher, M.A., Head Master of the Liverpool Institute; late Fellow of St. John's College, Cambridge. Pp. 80. (London: Edward Arnold, n.d.) Price 1s. 6d.

THIS is a very small book and a very good one. Its object is to teach geometry to boys without hindering and wearying them with metaphysical subtleties, or requiring them to express the proofs of propositions with that pedantic recitation of details—that parody of logical accuracy—which has long been identified with the study of Euclid.

The author is perfectly correct when he says that his little book "contains the whole substance of Euclid i.–iv. and vi. except the elegant but unimportant proposition, iv. 10."

The branches of the subject are taken in the following order:—Angles, triangulation (*i.e.* the discussion of the properties of triangles), quadrilaterals, loci, proportionals, circles, tangents, areas, maxima and minima, this last section being very short and merely illustrating what is meant by a maximum or a minimum. There is no formality whatever in the proofs, the most simple propositions being often left to the student with a hint sufficient for the solution. Each section, besides terminating with a number of simple exercises (well within the power of the beginner), contains a number of numerical illustrations to be worked by actual drawing with instruments. This is precisely the kind of teaching which is now being advocated by those who have taken up the question of the reform of mathematical teaching.

In propositions relating to proportion—as, for example, that a line drawn parallel to the base of a triangle divides the sides in the same ratio—the author explicitly states that he assumes two magnitudes to have a common measure, and that the difficulty which arises in the case in which they have not "had better be disregarded for the present." The reason for thus making an *essential* difference between "commensurable" and "incommensurable" quantities of the same kind is not obvious, since any proposition which holds for the former will be admitted, even by the beginner, to hold for the latter when it is pointed out that the unit magnitude may be taken so small that the distinction between commensurable and incommensurable quantities practically disappears. The proposition that the sum of two sides of a triangle is greater than the third is proved by the definition of a right line as the shortest distance between two points. The nature of a tangent as the limiting position of a chord is that which the author adopts. This also is in accordance with modern notions, and it offers no difficulty whatever even to the merest beginner. In p. 42, line 4, for "place them so that two pairs of sides are parallel,"