Our Bookshelf.

Recollections of My Youth. By Ernest Renan. Translated by C. B. Pitman. Pp. xlv + 360 + 2 plates. (London: George Routledge and Sons, Ltd., 1929.) 7s. 6d. net.

THIS new edition of Renan's second most famous book has the great additional advantage of an introduction by Dr. Coulton. It may well be, as Dr. Coulton suggests, that these autobiographical reminiscences will survive the long and solid works in which Renan condensed the learning of his time. If so, it will be due more, one may think, to the charming picture he has left us of the Breton life and country and friends of his youth than to the account of the long-drawn struggle which took him at last from his early faith and intended profession.

Most people who have a sense for such things have read the "Souvenir de Jeunesse" long ago, but they would do well to renew their acquaintance in Mr. Pitman's quite competent and readable translation, and with the aid of Dr. Coulton's useful signposts. It must suffice here to note two passages of special interest to scientific readers, one of which is quoted by Dr. Coulton in his introduction. Renan, writing after these "Souvenirs" in 1891 just before his own death in 1892, uttered one of the most remarkable judgments on public affairs on record: "My dear children of the new generation, how many things you will know forty or fifty years hence which I shall never know! How will the inmost soul of the Kaiser William II. develop? What will be the end of the conflict of European nationalities? What turn will the social question take? What will be the coming fate of the Papacy?"

The other passage occurs towards the end of the "Souvenirs" themselves. There was a moment before Renan left St. Sulpice when he might have taken up the study of natural science, and he says that he much regrets that he did not do so. "It is by chemistry at one end and by astronomy at the other, and especially by general physiology, that we really grasp the secret of existence of this world and of God, whichever it may be called." Possibly, if he had done so, mankind might have gained from a mind so industrious, synthetic, and humane, a view of scientific evolution as a historic whole which we have still to build. He would scarcely have been a great discoverer; he might have been one of the greatest historians of science. F. S. MARVIN.

Steam and Gas Engineering: a Text covering Power Generating Apparatus utilising Energy released by the Combustion of Fuels. By Prof. Thomas E. Butterfield. Pp. xv + 481. (London: Macmillan and Co., Ltd., 1929.) 18s. net.

PROF. BUTTERFIELD holds the chair of heat power engineering at Lehigh University, and his text-book has been written to fill what he felt to be a real lack in material for teaching the subject. He is therefore concerned more with elementary principles and general descriptions of plant than with the work of the designer and the operating engineer, and the student who wishes to master any branch of heat power engineering will have to supplement his read-

ing by consulting the books and articles mentioned in the bibliographies appended to each chapter. Most of the books referred to are either British or American.

The book may be divided roughly into four sections, the first treating of fuels, combustion, boiler furnaces, grates, the boilers themselves and their auxiliaries; the second deals with the various types of reciprocating steam engines; the third with steam turbines; and the last with internal combustion engines. Though owing to the extensive use of the motor-car the aggregate horse-power of internal combustion engines exceeds the total horse-power of steam plant, yet the place occupied by the latter in central power stations gives it the greatest engineering interest, and more space is thus given to steam than to gas and oil.

All the usual features found in steam plant are dealt with, including mechanical stokers and condensing plant, and there are chapters on heat and work, the properties of steam, the laws of gases, gas and steam cycles, and the nozzle and blade calculations for steam turbines, and the student thereby gets a broad foundation on which to base his further studies. A few historical notes are given regarding gas and oil engines, and similar notes might well have been given on steam engines and steam turbines. It is somewhat strange to read descriptions of steam turbines without meeting with the name of Parsons.

Kristallzeichnen. Von Dr. Robert L. Parker. Pp. vi + 112 + 50 Zeichenblättern. (Berlin: Gebrüder Borntraeger, 1929.) 20 gold marks.

THIS is one of the few books which deal exclusively with the drawing of crystals. It consists of a threefold division into text, tables, and drawing sheets. The text forms a practical introduction to crystal drawing, and theory is well blended with practical application.

The first few chapters are devoted to general questions such as the choice of a projection, and to the older methods of drawing as on the projection of the crystal axis, and with the aid of the stereographic and gnomonic projections. The position of the projected axes is given by co-ordinates (Weber's method), and a chapter is devoted to the method of determining the co-ordinates for the orthographic and clinographic projections in the case of each crystal system. Each method of drawing is illustrated with worked examples.

In the second half of the book is explained the author's new "Bildkantenazimute" method. This, without loss of accuracy or applicability, offers a great saving in time and labour over the older methods, and has the great advantage that it does away with confusing constructional lines. The slope of the edges is given by an angle measured in azimuth from a fixed point. The angles are derived by a simple calculation from the co-ordinates of the axial cross and the indices of the edges together with the axial ratio. Once calculated, the values are then available for all subsequent drawings of the same species. Prepared drawing sheets allow of rapid plotting of the edges.