OUR BOOK SHELF.

Household Foes. A Book for Boys and Girls. By Alice Ravenhill. Pp. xxiii+359. (London: Sidgwick and Jackson, Ltd., 1910.) Price 2*s.* 6*d.*

MISS RAVENHILL has written this small work with the object of arousing the interests of boys and girls in the practice of daily domestic cleanliness, and at the same time of furnishing them with reasons for this practice. She also aims at indicating the links which should be made to connect school lessons with home habits, and prominence is given to the value of good habits and to the necessity for their constant daily practice. She directs attention to the broad educational value of the subject of "hygiene," in exercising observation and reason, and in cultivating the habit of tracing effects to their causes. The text of most of the chapters is "dirt"—the dirt of home surroundings, of air, water, and food; and at the end of each chapter references are given to works in which the subject-matter may be further studied and developed, more especially on the practical and experimental side. Young people are slow to learn that there are no rights apart from responsibilities, which in this connection include duties to self, to home, to community, to empire, and to race; it is well, therefore, that Miss Ravenhill devotes her two concluding chapters to "the citizen's power to control dirt, decay, and disease," and "imperial safeguards against dirt and disease."

Hygiene has gradually found a footing in the elementary school code; but one cannot hope, for some years to come, to get the best results of this teaching and training, for the reason that school teachers as a body do not possess the necessary knowledge to enable them to present the subject with judgment and discrimination. This small work well serves as a very useful guide to them, and to this end it is perhaps the best statement hitherto published, for the essential facts are dealt with in an appropriate and impressive manner, and the book contains little (if anything) which is unsuitable or unnecessary, while the authoress tells practically all that it is necessary to tell. A child with the elementary knowledge of hygiene which Miss Ravenhill seeks to convey, and trained to act in accordance with its precepts, should be well equipped from the standpoint of hygiene. The book may be confidently recommended to all those parents and teachers who are concerned with the education of the young.

History of Chemistry. By Sir Edward Thorpe, C.B., F.R.S. Vol. i., From the Earliest Times to the Middle of the Nineteenth Century. Pp. viii+148. Vol. ii., From 1850 to 1910. Pp. viii+152. (Issued for the Rationalist Press Association, Ltd.) (London: Watts and Co., 1909 and 1910.) Price 1*s.* net each volume.

SIR EDWARD THORPE, who has enriched chemical literature with so many valuable biographical contributions, has added greatly to our indebtedness by the publication of these two small volumes of chemical history. In method and style they follow the eminently readable work of Thomas Thomson, which has been so long out of print, and in many respects out of date, and the modern student is now supplied with a brief history of chemistry, which is well within his intellectual and material means, and cannot fail to add greatly to the interest of his studies. The divorce of historical and other human interest from the study of science, resulting from our examination system, is greatly to be deplored. It gives good ground for the allegations of aridity so often made against scientific teaching and scientific text-books, and it deprives the student of much that would aid him in the comprehension of modern chemical theory. It is to be hoped that these volumes will have a very wide circulation, and that students may be encouraged to proceed to study some of the works which are indicated in the appended bibliographies.

The first volume, beginning with the chemistry of the ancients, brings the reader to the early part of the nineteenth century, whilst the second volume follows the subject to the present day. This last volume is naturally highly compressed, but, like the first, it bears the imprint of a master-hand in the exact and readable presentation of chemical history. A series of admirable portraits is inserted throughout the work. A. S.

A Course of Elementary Science, Practical and Descriptive. By John Thornton. Pp. vi+216. (London: Longmans and Co., 1910.) Price 2*s.*

THIS book, which contains chapters on measurement, mechanics, and heat, is intended by the author for junior pupils who are attending class and laboratory instruction. As the title implies, it is partly descriptive and partly practical in character. After perusing the book one is led to the conclusion that the author has not a very wide acquaintance with physics or much experience of up-to-date laboratory methods. The book has the characteristic of those many manuals on this subject which appeared so hurriedly ten or twelve years ago. The language is often loose, *e.g.* p. 13, Expt. 1, "Draw a large circle on a sheet of cardboard and divide it into degrees." On p. 29 the author states that results need not be carried beyond the second decimal place as a rule. In determining quantities in the laboratory where the final result is obtained by arithmetical operations on quantities actually measured, it is the degree of accuracy with which these several quantities are measured that determines the number of significant figures in the final answer. Such examples as Expt. 11, p. 35:—Weight of lead in air, 17 oz.; weight of lead in water, $15\frac{1}{2}$ oz.; specific gravity, $11\dot{3}$; or the example on p. 41:—3000/0·85=3529·4 c.c., are ill-chosen. On p. 131 we are told that the steel rails of a tram line have a small space left between their ends, when laid, to allow for expansion. How many observant boys have looked for such spaces and failed to find them? On p. 144 it is stated that water expands regularly from ordinary air temperature to 100° C.

The Brooks Patent T-square Lock. (Letchworth, Herts: Wm. J. Brooks and Co.) Prices 4*s.* 6*d.* and 5*s.* 6*d.*

THIS very useful adjunct to the ordinary T-square is one of the best of the devices which have recently been introduced to facilitate the work of the draughtsman, and it will be much appreciated by all who are engaged in mechanical and architectural drawing. The contrivance is simple in character, moderate in price, and well made, and is designed so as to be readily attachable to any existing square, no alteration of the drawing board being required. By its use the T-square, without loss of freedom, is instantly locked in any desired position on the board, thus freeing both the hands of the operator. The lock may be put out of action at will, and the T-square manipulated in the ordinary manner. The "lock" attachment will be found extremely serviceable when used with a board which rests horizontally, as on a table, but when the board is much inclined or is vertical, the employment of this or a similar device is indispensable. There are many teachers who might with great advantage utilise this apparatus for black board work.