

OUR BOOK SHELF.

Inorganic Chemistry for Beginners. By Sir Henry Roscoe, F.R.S., assisted by Joseph Lunt. (London: Macmillan and Co., 1893.)

Everyone recognises the necessity for having works upon elementary science written by men in thorough touch with their subject. It is with some satisfaction, therefore, that we notice this book, in which Sir Henry Roscoe clearly expounds the elementary principles of chemistry, and describes some of the non-metallic elements and their more important compounds. The book differs from the author's well-known "Lessons in Chemistry" in arrangement and in style, and is far better suited to the tyro in chemistry. In fact, it is adapted to suit the requirements of the syllabus of the Department of Science and Art, and both teachers and students under the Department will benefit by its introduction. There are twenty-one lessons in the book, each complete in itself. At the end of each lesson is a brief summary and a set of questions bearing upon the subjects treated. Believing with all educationalists that principles only become apparent when they are reflected by facts, the author illustrates each step with an experiment. One hundred and eight illustrations elucidate the text, and though many of them are of the ordinary stock character (which is, perhaps, unavoidable in a book of this kind) a fair proportion are from new blocks. In every respect the book is a good one, and contains the kind of knowledge that should be imparted to all beginners of science.

The Chemistry of Fire. By M. M. Pattison Muir. (London: Methuen and Co., 1893.)

THE fact that this book belongs to a University Extension Series vouches for the popular character of the contents. Extensionists should welcome Mr. Pattison Muir's contribution to their literature, for it represents the work of a practical teacher, and combines accuracy with simplicity. It is now generally conceded that the best way to teach chemistry is to deal first with common occurrences and things, and finally to generalise. Let a student once obtain a correct notion of the changes of composition that happen in the burning of a candle, and he can comprehend all chemical changes. We therefore commend the book before us to the notice of committees and organisers of technical education, for it contains just the kind of knowledge that should be imparted to all students under their guidance. Like the majority of the volumes in the series to which this one belongs, the illustrations are few and very sketchy. On this account it will be difficult for the home-reader to get a clear conception of many of the experiments.

Solutions of the Exercises in Taylor's Euclid I. to IV. By W. W. Taylor, M.A. (Cambridge: University Press, 1893.)

By the publication of these solutions, Mr. Taylor has furthered very considerably the usefulness of the book written by his brother. In the book he has worked out very fully all the problems, and has arranged the text in such a form as to be thoroughly intelligible to any student. Where several problems were of a similar character, it has been thought expedient to adopt a different mode of solution, while in some cases duplicate solutions have been given. Extension of theorems have here and there been inserted, and a few additional exercises will also be found to have been interpolated. By the adoption of a simple notation, reference can be directly made to the problems in the "Pitt Press Euclid." Both teachers and taught will find that they have a very useful companion to the above-mentioned book, while the latter will be very much enlightened in the art of solving many problems.

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LETTERS TO THE EDITOR.

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The Recent Glaciation of Tasmania.

IN a paper read before the Royal Society of Tasmania in June last, Mr. R. M. Johnston, F.L.S., gives a sketch of what is known of the glaciation of the island, or rather of the western portion of it, for no indications of glaciers appear to have been discovered in the eastern half. This difference is supposed to be due to the fact that on the western side of the island the rainfall is from 50 to 76 inches annually, while in the central valley it is but little over 20 inches. Indications of glaciation among the western mountains were noticed by Mr. Charles Gould, Government geologist, about forty years ago, and from information received from him through the late Chief Secretary of Tasmania, the Hon. J. R. Scott, Mr. Johnston took up the inquiry, and for many years has made explorations in the western plateaus and mountains. Mr. C. P. Sprent was another explorer who published some account of the glacial phenomena in 1886, while more recently Mr. T. B. Moore and Mr. Dunn have recorded similar observations. Mr. A. Montgomery, the present Government geologist, has also just published a paper on the same subject.

Mr. Johnston tells us that he has personally explored the whole of the western mountains, from the Picton and Craycroft Rivers, southern branches of the Huon, in the extreme south, along the mountain ranges forming the western border of the central plateau, quite through to Emu Bay on the north coast; and that he has found the clearest evidences of glaciation in almost every valley throughout this great extent of country. From the Arthur Range in the south to Mount Bischoff in the north, are numerous moraines, *roches moutonnées*, tarns and lakes in great abundance, polished and striated rock-surfaces, and numbers of true erratics. Near the sources of the Franklin River, under Mount Hugel, and only six or seven miles west of Lake St. Clair, are Lakes Dixon and Undine, of which Mr. Johnston writes:—"The valley of Lake Dixon is *par excellence*, the ideal of a perfect glacier valley. No one, however ignorant of glacial action, could in this neighbourhood gaze upon these beautiful scooped, or rather abraded lakes or tarns, the snow-white, polished, billowy, and cascade-like *roches moutonnées*, composed of quartzites, on the upper margin of Lake Dixon, together with the tumbled moraines and large erratics on the lower banks—at a level of about 2000 feet—without being impressed with the idea that its singularly characteristic features must have been produced by the slow rasping flow of an ancient river of ice."

Further north, the Murchison, Macintosh and Huskisson rivers, all branches of the Pieman River, contain similar glacial markings; and Mr. Dunn has recently described others of the same character about Lake Dora, nearer to the west coast. The latter observer lays special stress on the rounded planed and scored rocks, on hard quartzite and conglomerate rocks rounded and polished, on numerous tarns in rock-basins, on moraines covering hundreds of acres, and on numerous huge erratics and perched blocks. (See Annual Report of the Secretary for Mines, Victoria, 1893, p. 21.)

Mr. T. B. Moore states that he found the rocks polished and striated within 25 feet of the top of Mount Tyndall, or 3850 feet above the sea, a sufficient indication that the great central plateau at an average elevation of nearly 4000 feet must have been buried in ice or *névé* to a considerable depth, and have formed the feeding ground for the glaciers, whose effects are so visible in the adjacent western valleys. The Tasmanian geologists are united in the belief that the glaciers never reached the coast or descended much below the 2000 feet level, and that the ice did not extend to the central valley or the eastern side of the island. They therefore speak of it as a *glacier*, not a *glacial* period, the conditions being somewhat similar to those of the Alps at the present time; but, owing to the great difference in the rainfall, there was a more marked contrast between the western and eastern districts, while the lofty central plateau afforded a much more extensive snow-field than Switzerland now possesses.

The facts here stated on the authority of Mr. Johnston, sup-