

been made to classify the individual plants mentioned under each head, whether alphabetical or scientific, while those under *materia medica*, oils and oil-seeds, gums and resins, are placed in some sort of scientific classification of the natural orders. Nor is the produce of one plant, though of a similar character, always to be found in the same paragraph. Thus, on p. 40, under roots and tubers, the introduction and importance of the potato are referred to, then comes a paragraph on each of the following: sweet potato, yams, Jerusalem artichokes, turnip, carrot, parsnip, beetroot, onion, parsnip-chervil, salsafy, and radish; and then, on p. 43, we have another paragraph referring to the potato, especially to the disease and the recent introductions of *Solanum maglia* and *S. Commersoni*, which would have been better placed with the account of the potato on p. 41.

On p. 59 the Souari nut (*Caryocar nuciferum*) is printed *Somari* nut, and said to be Camelliaceous. Though it is closely allied to the Camellia, it would have been more correct to call it a Ternstrœmiaceous plant. It is, however, for the meagre character of the information generally that the book is unsatisfactory. The following examples, taken haphazard, will illustrate our meaning:—

“The Coriander, the whole fruit of *Coriandrum sativum*, L., is cultivated to a small extent in Essex, but is obtained mainly from the Mediterranean and from India.”

“The fruits of Angelica (*Angelica Archangelica*, L.) are used in Chartreuse, and the leaf-stalks are candied as a sweetmeat” (pp. 66-67).

Also at pp. 160-61, under “Dyes and Tanning Materials,” we find the following:—“Betel Nut (*Areca Catechu*, L.) is recommended by Mr. Christy.” “Canaigre is the root of the Texan Dock (*Rumex hymenosepalus*, Torrey), recommended by Mr. Christy.”

“Mimosa extract was sent from Australia as early as 1823, but dropped out of notice till recently. In 1880 we imported £682,296 worth of various bark extracts” (p. 161).

Though the book is stated to have “special reference to vegetable products introduced during the last fifty years,” very few dates of introduction are given, and a large number of the plants referred to were known and valued before the present century.

*Examination of Water for Sanitary and Technical Purposes.* By Henry Leffmann, M.D., Ph.D., and William Beam, M.A. (Philadelphia: P. Blakiston, Son, and Co., 1889.)

THIS volume contains a great deal of clearly stated information in its 106 pages. The authors have succeeded in the endeavour expressed in their preface to select trustworthy and practical processes, and to exclude the description of methods not generally employed, with other matters only remotely connected with the subject. So far as organic matter in water is immediately concerned, the “albuminoid ammonia” and the “oxygen-consuming power” are relied upon by the authors. Special prominence is also given to the estimation of chlorine, nitrogen as nitrates and as nitrites (by colorimetric processes), phosphates, dissolved oxygen, and poisonous metals. A general method of quantitative analysis for technical purposes follows, including the estimation of hardness alkalimetrically, after Hehner—rejecting soap solution altogether—and the estimation of boric acid, after Gooch, as well as the constituents that invariably receive attention. A carefully compiled chapter on the interpretation of results, and a few other matters, complete the volume.

*Celestial Motions: A Handy Book of Astronomy.* By William Thynne Lynn, F.R.A.S. Sixth Edition. (London: Edward Stanford, 1889.)

THIS is the sixth edition of an interesting little book, which explains briefly the principal facts relating to the motions of celestial bodies, and to the dimensions of those

belonging to our own system. The information has been brought up to date, and an addition of a chapter on “The Calendar” has been made. In the chapter on the sun we are told that “the solar spots are produced by tearings open of some of the luminous envelopes which surround the sun, so that we see in them to a depth below that of the solar surface.” To an ordinary reader this statement would be rather misleading, since no mention is made of the absorption of the sun’s light by the descent of the cooler particles on to the solar surface from the upper regions of its atmosphere, the spots thus being made to appear dark and not bright. In chapter x. a short reference is made to the refraction, propagation, and aberration of light, while in chapter xii. we have a brief sketch of the history of astronomical discovery. The book concludes with an explanation of astronomical and technical terms.

*Science Examination Papers.* Part I. Inorganic Chemistry. By R. Elliot Steel, M.A., F.C.S. (London: George Bell and Sons, 1889.)

THIS work, intended for teachers, consists of a series of examination papers arranged in a progressive and logical order. It is divided into two parts, theoretical and practical, and is written, as the author tells us, “not as a cram-book, but as a means of testing the student’s knowledge and progress.” The first part treats of questions on hydrogen, oxygen, ozone, &c., followed by a set of general questions on the above, concluding with a collection of papers taken from various examinations, such as the London Matriculation, Science and Art Department, Oxford and Cambridge Locals, &c. Part II. deals with questions on simple and mixed salts and elementary quantitative analysis. The work is one of the “School Examination Series” edited by A. M. M. Stedman, and should prove serviceable to those teaching natural science in many of our schools.

*A Course of Easy Arithmetical Examples for Beginners.* By J. G. Bradshaw, B.A. (London: Macmillan and Co., 1888.)

THIS is a very elementary book, suitable for the use of young boys. It consists of a collection of simple arithmetical examples. The first part deals with examples in simple and compound addition, subtraction, multiplication, division, and reduction. Part II., which has been in use for over a year in the Junior School at Clifton, treats entirely of vulgar fractions; Part III., of decimals, practice, and proportion. The various tables used throughout are given at the beginning, and the results of all the examples are collected together at the end.

*The Prospector’s Hand-book.* By J. W. Anderson, M.A., F.R.G.S. Fourth edition. Pp. 145. (London: Crosby Lockwood and Co., 1889.)

THE general plan of this book was described on a preceding occasion, so that at present it is only necessary to notice the changes in the new issue. The work, we are told, has been thoroughly revised and enlarged. The enlargement consists of about eight pages of descriptive matter, mainly referring to South Africa; but the results of the thorough revision do not appear to be very considerable. Nearly all the mistakes and ambiguities in the original descriptions of metallic minerals are unchanged. The author calls attention to an addition descriptive of aluminium and its ores, from which we gather that bauxite is a ferruginous clay, a statement that is both original and incorrect. On pp. 94 and 96, one ton is said to contain 29,166 troy ounces, while in the table, on p. 121, 1 per cent., in an assay return, is given as equivalent to 326 ounces 13 dwts. 8 grains per ton. The latter statement is right, the former one is wrong, but the author does not attempt to explain the discrepancy. Perhaps he will do so in the next issue. H. B.