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a second edition appeared in 1812 and a third in 1818. This was doubtless owing to the fact, which may also account for the long list of subscribers, that the author occupied an important position at what was evidently a fashionable ladies' school, at 22 (later transferred to no. 33) Hans Place, Sloane Street, Chelsea, at which, among other well-known folk, Lady Bulwer Lytton, Mrs. S. C. Hall, Mary Russell Mitford, and Letitia Elizabeth Landon were educated. From references in the 'Lives' of the two latter, by A. G. L'Estrange and Laman Blanchard respectively, and from T. Crofton Croker's *A Walk from London to Fulham*, we learn that the school (which a note in the *Introduction to Botany*, p. 87, shows was first established at Reading) was "kept by M. St. Quentin (or Quintin), a well-born, well-educated, and well-looking French emigrant," who "had been Secretary to the Comte de Moustiers," and was "one of the last, if not the last, of the ambassadors of Louis Seize to the Court of St. James's. He was assisted, or rather chaperoned, in his undertaking by his wife, a good-natured red-faced Frenchwoman, and by Miss Rowden, an accomplished young lady, the daughter and sister of clergymen, who had been for some years governess in the family of Lord Bessborough, and who superintended the general course of study" (L'Estrange). A long and attractive description of "Fanny Rowden," as she was called, is quoted from Miss Mitford, who for many years visited her old teachers; Laman Blanchard describes Miss Rowden as "herself a poetess and otherwise highly accomplished": she published in 1810 a poem entitled *The Pleasures of Friendship*.

After the death of his wife, M. St. Quentin seems to have resumed his title and returned to France; Blanchard says that Miss Rowden "became Countess St. Quentin and died in the neighbourhood of Paris": this must have been before 1841, the date of the book from which this extract is taken.

REVIEWS.

Lichens. By ANNIE LORRAIN SMITH, F.L.S. Demy 8vo, cloth, pp. 464, 135 figs. 55s. University Press, Cambridge, 1921.

BOTH the Cambridge Press and Miss Smith are to be congratulated on the appearance of this the second issue of the Cambridge Botanical Handbook Series commenced before the war: the former in that they have emerged beyond the horizon of the Oxford Press with its bias for the translation of German books, and the latter for the completion of a monumental volume on her special subject which marks the culmination of her previously well-known and standard studies of British Lichens.

The pursuit of Lichenology, although one of the most interesting backwaters of modern botany, has been largely relegated to collectors and systematists; and beyond a casual recognition of phenomena of 'symbiosis,' illustrated by some elementary type, students have little knowledge of the range and beauty of this strangely isolated series of plant-forms, their great importance in the flora of the world as a whole, and the mystery still underlying their origin.

Since the time of Lauder Lindsay's attempt to popularize the study to nature-students of the middle nineteenth century, there has been no convenient introduction to the group in any available language: an abbreviated account by Fünfstück and Zahlbruchner (1898), in the stereotyped style of the *Pflanzenfamilien* of Engler and Prantl, has had to serve for general purposes. Lichenological specialists, again, had retired into a language of their own, the elegance of which may compel admiration for Crombie (*British Lichens*, 1894), but it resulted in few getting beyond the first page.

Miss Smith's work is eminently readable; terminology is simplified, fanciful expressions are largely eliminated, and a useful glossary is placed at the beginning. The lay botanist may perhaps object to the extensive use of the expression 'fruit,' or the rather terrible word 'squamules'; while 'copulation' is certainly a curious term for spermatogamic fusion. The arrangement of the work is exhaustive, including sections dealing with historical aspects, the anatomy and physiology of the symbionts, the general organization of the different types of thallus and their special peculiarities, the mechanism of reproduction, physiology of nutrition, and relation to biological environment, with additional chapters on Bionomics, Phylogeny, Systematy, Ecology, and various Economic Applications—running to over 400 pages of text. In these Miss Smith shows a keenly analytical mind, every section bearing a number or letter, running to paragraphs of the AA, *ee*, order, in a manner reminiscent of the late Professor Marshall Ward, and suggesting that the scaffolding has not been taken down. One would perhaps have liked to see more details on such cytological points as the double reduction in the ascus, or something on Lichenic acids beyond empirical formulæ; critical details of the essential mechanism of fertilization are also left rather vague; but probably the time has not yet come for the weaving of the whole story of the Lichen into a connected whole. The point of importance is that Miss Smith has collected all the materials, and she inspires confidence that there is nothing she has overlooked, even in the case of papers which might well be consigned to oblivion. An introductory note, repeated on the wrapper, rather apologises for burdening the pages with citations; but this is really the strong feature of the book, and gives it its greatest up-to-date value. References in the text are judiciously limited to authors' names and dates in footnotes, and a very complete bibliography at the end covers 24 pages of small type. All the chapters present the same thoughtful review of the material available, and even where Miss Smith has let herself go a little, as in the scheme of polyphyletic progression of the lichen-soma, the inevitable phylogenetic trees are kept within most modest proportions.

The volume, as a whole, constitutes an extremely valuable contribution to British Botany: though necessarily a pioneer volume in many respects, it is practically the first modern scientific work devoted solely to Lichens, and as so will remain a classic; while it may also serve as a model of painstaking compilation for other writers in the series. The few objections that can be taken to it refer to matters beyond the author's control. The get-up of the volume, in the luxurious style of the pre-war issue of West's *Algæ*, has been appa-

rently left to the printer: ample margins, wide spacing, abundant headings—seven different founts of capitals being used for these last—are admirable in their way, but increase expense. The mere list of contents extends to 12 pages, and the Cambridge Chick-Pea adorns the cover. One may admire botanical text-books *de luxe*, but this defeats what should be the primary object of bringing the subject within the range of teachers and students, an impecunious race; at the present time we can only wonder where these are to be found who will be anxious to pay 55s. for a book which might have been produced for a sovereign, and is off the main track of the science. The illustrations are also very disappointing; the line-drawings are feeble, and the half-tone blocks, which have necessitated the use of faced paper, are of little value as affording any adequate idea of the wonderful range and beauty of lichen-form; some of them ‘might be anything.’ Many sections and paragraphs of the book, as dealing with points of ancient history or minor economic applications, would have been better in a smaller type, as tending to differentiate the material really important to the ordinary student. Such minor matters may, however, be referred to the responsible editors of the Cambridge series, to Miss Smith will be accorded the gratitude of the English-speaking botanical world.

A. H. C.

Common Plants. By MACGREGOR SKENE, D.Sc., Lecturer on Plant Physiology, Aberdeen University. 8vo, cloth, pp. 271, 24 plates. London: A. Melrose. 6s. net.

It is pleasant to find a popular book about Botany which we can wholeheartedly recommend, and this we have in the volume whose title stands above. It contains a series of thirty-three studies, each “written round a common plant which serves as a particular illustration of plant life.” The method of the book is so well defined in the preface that we transcribe it in preference to giving a summary of our own:—

“The studies are not isolated; a number of general themes act as connecting-links. Thus the theme developed in the opening sections is that of nutrition, in relation to the food supply of the world as well as to that of the plant, and this runs through the survey of the vegetable kingdom which follows and occupies the middle part of the book. Grouped round the description of the rise of the land flora are discussions of problems of water supply, of reproduction, of the inter-relations of plants and animals. The relations of the plant to man are emphasised in the opening and closing chapters.”

These chapters deal with Wheat, its origin, its photosynthesis, and, finally, its development, in which the application of Mendelian principles has produced important results. The three stages of Parasitism are illustrated in as many chapters by the Mistletoe, the Dodders, and the Broom-rapes; of carnivorous plants the Sundew and Venus’s Fly-trap are taken as types, with references to other instances; the White Bryony furnishes the text for a chapter on “the vegetation of plant-movements”; the establishment of *Lupinus nootkatensis* on the shores of the Dee suggests a discussion on “the equipment of