

*Outlines of Zoology.* By Prof. J. Arthur Thomson. Fifth edition, revised. Pp. xxii+855. (Edinburgh, Glasgow, and London: H. Frowde and Hodder and Stoughton, 1910.) Price 12s. 6d. net.

In the case of a book written by such an experienced writer and teacher as Prof. Thomson, and especially at the appearance of a fifth edition, there is little room for critical comment. The qualities that have made this work such a successful handbook are well known to generations of Scotch students; the conciseness of its information, the caution of its statements, and the clearness of its comparisons. Even in its older form this text-book was notable for its close texture, for the compact nature of its information. Now that all the bearings of modern work upon its topics have been incorporated, it is a rendering not only of the outlines of zoology, but of much of the "corpus" of zoological knowledge, and he would indeed be a full man who could really possess the store of information, both old and new, that is contained in its pages.

Almost the only general criticism we have to make is the inadequacy of the treatment of the cœlom-theory. This important and difficult subject has recently been expounded so clearly in Prof. Sedgwick's text-book of zoology, and is of such fundamental importance that the fragmentary presentation in the book before us is a matter of regret, affecting, as it naturally does, nearly every division of the animal kingdom. The discussion on Echinoderm larvæ on p. 278 fails through such a want of what Moseley, we believe, described as "morphological grip." The "absence of the apical sense-organ" mentioned at the bottom of that page is surely an oversight. The apical plate is well developed in Echinid larvæ, and even bears eye-spots.

The text has been most carefully revised. Very few mistakes have been overlooked, but two call for mention. One of the most recently discovered insects—Acerentomon—is figured, a welcome sight, on p. 362, and is described there as being without antennæ, though antennæ are figured and described in the legend. The other occurs on p. 235, where, in the second paragraph, the word "sexes" is written "series." Such minute defects are, however, of little account. A notable feature of this edition is the large number of new figures.

*Étude sur l'Assurance complémentaire de l'Assurance sur la vie. Avec de nombreux développements sur les Assurances contre la Maladie et l'Invalidité.* By P. J. Richard. Pp. iv+118. (Paris: A. Hermann et Fils, 1911.) Price 3.50 francs.

THERE has lately been a movement among insurance companies in various parts of the world to combine with ordinary life insurance benefits dependent upon sickness, so that in the event of incapacity no premiums are payable, and sometimes an annuity is received. This movement has led to the mathematical investigation of the underlying principles, and the subject has proved attractive to one or two writers, owing, perhaps, to its complexity, for it is necessary to deal with the probabilities of death, sickness (permanent and temporary), and recovery, all of which vary with the age and occupation of the life assured, as well as with the time that has elapsed since the person was medically examined for insurance. M. Richard, in his recent publication, evolves the formulæ that might be used, and gives specimen tables to enable us to form an idea of how the premiums might be calculated, although, as he points out, we have not sufficient statistical data to enable us to use his formulæ satisfactorily.

The best solution of the problem is probably the

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statistical one which sets out on one hand the payments made to the offices, and on the other the various benefits allowed to the insured. The subject is, however, at present too new on its practical side to enable us to use this solution, and until experience provides us with data, M. Richard's neatly-printed little book will prove interesting to those who are concerned with actuarial problems in theory and practice, and have perhaps already been attracted to the subject on which he writes by the earlier work of Schaertlin and a few other writers.

*Recueil d'Œuvres de Léo Errera. Physiologie générale. Philosophie.* Pp. xiv+400. (Brussels: H. Lamertin; London: Williams and Norgate, 1910.)

THE late Prof. Errera was possessed of an inherent faculty for analysing subtle problems by a process of concise, logical argument, and this faculty is particularly apparent in his treatment of certain of the general physiological subjects discussed in this fourth volume of collected papers. One of the best instances is supplied by the notes arranged for a course of lectures debating the existence of a vital force in plants. Two lectures on sleep were delivered before an audience composed largely of doctors. The view put forward by the author that sleep is induced by the formation of toxic bodies was opposed by several doctors present, but was not refuted.

Three papers only can be classed as direct contributions to botany, although arguments are deduced from the plant world in all of them. One of these discusses the question whether acquired characters can be inherited, and answers it in the affirmative on the strength of cultural experiments with *Aspergillus niger*, carried out by Dr. Hunger in the Botanical Institute at Brussels. Another paper dealing with the struggle for pre-eminence as exemplified by the growth of lateral branches of a conifer when the main stem is destroyed, was read before the British Association at the Cambridge meeting in 1904. Two essays on the individual and the assertion of life are published for the first time. The papers generally manifest a copious knowledge and ready application of the latest scientific facts, and botanists in particular will appreciate the arguments and views expressed with regard to spontaneous generation and the existence of a soul in plants.

*Wild Flowers as They Grow. Photographed in Colour direct from Nature.* By H. Essenhugh Corke, with descriptive text by G. Clarke Nuttall. Pp. vii+197. (London: Cassell and Co., Ltd., 1911.) Price 5s. net.

THE first point of interest in this volume is supplied by the coloured illustrations, which are the outcome of photographs taken from nature direct by the Lumière process, and reproduced by a four-colour printing operation. Most of the colour tones are well rendered, notably the yellow and green of the primrose, the blues of the harebell flower, and the blended colours of the bee orchis; only the yellow colours of the dandelion and toadflax are distinctly incorrect. From a combined natural and artistic point of view the wild strawberry is excellent, as are several others, especially when it is considered that an exposure of minutes is required for taking the photographs. In the accompanying letterpress Mr. Nuttall presents a clear and precise description, adapted for general readers, of the chief features of biological interest observable in the twenty-five plants selected, and comments on the popular names, superstitions, and other such details. The text and illustrations together form an attractive volume, and the cost is moderate.