

present lack of the needed expositors in many branches of science is due to loss of this vision of beauty through the concentration on analytical or synthetic methods. It is only when we are able to perceive and respond to the beauty of our subject and to see it in some true perspective that we can expect to receive the power to expound to others, in language understood by all, the vision vouchsafed us, or the results obtained and the methods by which they were obtained. So far as outdoor Nature is concerned, volumes such as that under review, in kindling this vision and love of beauty, may also assist in the formation of a public opinion intelligent and strong enough to secure the action which in so many quarters is sadly needed, if serious depletion of the flora and fauna of our countryside is to be prevented and its beauty spots secured from irreparable damage in the local interests of some supposed utilitarian or business scheme.

Short Reviews

Biologie des Radiums und der radioaktiven Elemente. Von Prof. Dr. Julius Stoklasa. Unter Mitwirkung von Dr. Josef Pénkava. Band 1: *Biologie des Radiums und Uraniums.* Pp. xiv + 958. (Berlin: Paul Parey, 1932.) 74 gold marks.

SEVERAL books have been written on the biological effects produced by the radiations from radioactive bodies, and they have presented the chief characteristic changes in living things in the relationship of such changes to the main issues of radiological treatment. It is fairly generally admitted now that although the main effect of the radiations is a direct one upon the tissues immediately irradiated, other effects are produced in an indirect way which may be of great importance in the final result of any radiological exposure. The aim of the authors in this exhaustive work (another volume is foreshadowed) is to present these biological effects from an entirely different point of view, and about two-thirds of the present volume is devoted to the description of elaborate methods of estimating the effects of the rays on vegetable life. It is only when p. 640 is reached that the animal kingdom receives attention, and even in this section the authors give their fullest consideration to the types of biological change that are most conspicuous in plant life, namely, those which regulate respiratory exchange.

Many of the experimental methods described in the dominant section of the book have been devised by one of the authors, and they leave the reader with little doubt of the profound effect which can be produced by radioactivity on young plants and seeds. The literature of a few years ago on this subject revealed acute differences of opinion among experimenters as to whether the radiations could stimulate cell-life, and the authors have done a great service in getting together a comprehensive series of tests which serve to show how many factors involved in the processes of normal growth have to

be taken into consideration before the term stimulation can safely be applied to any particular phase of the growing organism.

The book is a most careful compilation and should prove to be of great use as a reference book on these particular biological effects, even though there is very little direct reference to their significance in modern radiotherapeutic methods.

Dynamics of Airplanes and Airplane Structures.

By Prof. J. E. Younger and Prof. B. M. Woods. Pp. xiii + 263. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1931.) 17s. 6d. net.

THIS is distinctly an American students' textbook that has no counterpart in Great Britain. It is obviously the work of skilled mathematicians, who have applied their knowledge to the investigation of some of the peculiar problems of the aeroplane. They have evidently treated their subject *multum in parvo*, and have rigidly resisted the temptation to stray from the application of mathematics to the problems before them, into the more philosophical outlook, which is so often the case with books of this description. The reader's taste will decide whether or not this is an advantage. This narrow outlook is not an ideal training for the student, but on the other hand it must be admitted that the authors do 'deliver the goods' and in a volume of reasonable size. Judged from the point of view of the English educational system, it is recommended for reading to a student who, having already studied the fundamentals of aeronautics, will benefit by approaching the subject from a somewhat different point of view, before taking up the deeper detailed investigations, as published in monographs such as the Aeronautical Research Committee Reports and Memoranda.

The text is divided into three parts. Part 1, "Simple Dynamics of Airplanes", deals with mathematical principles, and uses the aeroplane for the provision of illustrative examples. Part 2, "Advanced Dynamics of Airplanes", treats the various aspects of the machine in flight, including a useful study of stability. Part 3, "Special Problems", deals with special problems such as dynamic loading, periodic oscillations, vibration, flutter, etc., all of which are handled according to the most modern accepted theories.

The book has a useful decimal system of reference, both in paragraphing and numbering of formulæ, which makes cross-reference particularly easy. The index refers to page numbers.

Mendelism and Evolution. By E. B. Ford. Pp. xii + 116. (London: Methuen and Co., Ltd., 1931.) 3s. 6d. net.

THIS little book presents with great clearness and precision the actual position of modern genetics in its relation to the problem of evolution. It represents a review of the whole field of the subject and of the most important theories developed around it in recent years. Each aspect of the problem is considered with reference to a wealth of data, which should prove invaluable to students who have not