

great importance of the experiments which are carried out by the munificence and public spirit of the Duke of Bedford. Each year their value and importance will be enhanced. If we might make one suggestion it would be that a corresponding series of experiments, though not necessarily on so large a scale, might be made on barren sand or some soil less naturally fertile than that at Ridgmont.

MAXWELL T. MASTERS.

OUR BOOK SHELF.

Design in Nature's Story. By Walter Kidd, M.D., F.Z.S. Pp. ix+165. (London: James Nisbet and Co., Ltd., 1900).

HUXLEY pointed out that the Darwinian theory of adaptations was incompatible with "the commoner and coarser forms of teleology," but admitted that "there is a wider teleology, which is not touched by the doctrine of Evolution." But Dr. Kidd is not satisfied with this, and has written a little book to protest against the attempt of modern science to ignore what is called "Design in Nature." He does not trouble himself to define with any precision what he means by this phrase, but he seems to mean what is called "the directive intelligence of a personal God," and we can only repeat what has been said so often, that with this the scientific mood, as such, has nothing whatever to do, though it supplies some of the data with respect to which the philosophic mood may decide as to the validity and fittest formulation of the conception. When Weismann says, to the author's disgust, that the introduction of teleological principles is the ruin of science, he simply expresses the general conviction that their introduction is incongruous with the scientific method. Dr. Kidd does not seem to see that to oppose scientific and teleological interpretations is to oppose incommensurables.

The author gives examples of adaptations in plants, in animals, and in man, but Darwin's illustrations are far more convincing. He emphasises also "the adaptedness of environments for coming organisms," though it seems plain enough that only those organisms could come to stay who were relatively fit to survive in the given conditions. If the author will reconsider, for instance, the position expressed by W. K. Brooks in his "Foundations of Zoology," he may discover that he is tilting against a windmill, that Darwin did at least as much for teleology as Paley, and that our provisional theories of the rise and progress of adaptations suggest no reason whatever why the philosophers should not adhere to the teleological position. But these discoveries should have been made before publication.

J. A. T.

Penrose's Pictorial Annual. Vol. vi., *The Process Year-book for 1900.* Edited by William Gamble. Pp. xvi+112. (London: Penrose and Co., 1900).

THIS handsome volume will give the reader an excellent idea of the way in which photographs can be reproduced for illustration purposes. It is too often the case that either copies of photographs have to be made quickly or the paper on which they are printed is not of the most appropriate kind, so that the "reproduction" is by no means of a very high order. In this annual, however, the editor has taken great care that the art of reproduction should be given its full scope, and any reader cannot but admire the results as here displayed. From the beginning to the end of the volume we find innumerable illustrations, dealing with all kinds of subjects and reproduced by nearly as many processes. The illustrations are as nearly perfect as reproductions can be, and show that a sound practical knowledge has been utilised

throughout. The editor states that "We have tried to show what photomechanical processes can do at the present time, and to present the specimens of the numerous British and foreign firms in a style which will bring out every quality in the plates." That this has been carried out in a highly satisfactory manner cannot be denied.

Many hints may be gathered from the numerous articles scattered throughout the volume, especially from that written by the editor on catalogue illustrations.

In conclusion it may be stated that every one interested in the subject of process work, and who wishes to know its position to-day, cannot do better than examine closely the examples displayed throughout the pages of this volume, which is a model of good printing and get-up.

Knowledge Diary and Scientific Handbook for 1901. (London: Knowledge Office, 1900.)

THIS publication is one which appeals more particularly to those interested in astronomy, and will doubtless prove a great convenience to actual observers for recording their observations, and to others for use as a private diary. There is a generous allowance of space for each day, and provision is made for recording correspondence. In addition, there are 120 pages of printed matter, consisting of the principal astronomical data for the year, a calendar of notable events, a variety of useful tables, and reprints of a few articles of more than passing interest which have appeared in *Knowledge*. Star maps, showing the aspect of the heavens for each month, are also given. As the recognition of the planets is apt to be a source of difficulty to beginners, it would be well in future issues to state the times of their rising and setting as well as of their southing, and to indicate their places month by month in connection with the star maps.

A Short Course of Elementary Plane Trigonometry. By Charles Pendlebury. Pp. xi+160. (London: George Bell and Sons, 1900.)

THIS short course is intended for those who do not require more than a very elementary knowledge of the subject. The treatment adopted is therefore very simple and the language plain. The book is divided into four parts. The first includes definitions, trigonometrical ratios, and multiple and sub-multiple angles, &c.; the second contains a short account of the use of logarithms and mathematical tables. In the third part the solution of triangles, determination of areas of triangles, and the treatment of circles and other figures associated with a triangle are dealt with. Part iv. contains the solutions of some of the more simple trigonometrical equations and also numerous questions on bookwork and answers to the many examples given in the book. As a first course for beginners the book should prove useful.

Lehrbuch der anorganischen Chemie. Von Prof. Dr. H. Erdmann. Zweite Auflage. Pp. xxvi+757. (Brunswick: Viewig und Sohn, 1900.)

THE first edition of this book, published two years ago, was noticed in these columns at some length. The present edition does not materially differ from it, but numerous additions of detail have been made in order to bring the book up to date. Conspicuous among these additions is information about the new gases—here called Edalgase, presumably from their relegation to Mendeleef's seventh group. A fine chromo-lithograph of the spectra of the gases has been added. If there is a want of connectedness and philosophy in Prof. Erdmann's book, there is certainly an abundance of interesting detail collected from a wide field, and on this must lie its chief claim to recommendation.