

volume, edited by Dr. J. Massart, opens with a contribution by him on the subject of irritability in the higher plants. It also contains the instructive essay by Prof. Errera on the primrose, an account by Miss J. Wéry on the attraction of bees by flowers, and an investigation carried out by Dr. A. Jacquemin on the localisation of alkaloids in the Leguminosæ.

OUR BOOK SHELF.

Les Observatoires astronomiques et les Astronomes.

By P. Stroobant, J. Delvosal, J. Philippot, E. Delporte, and E. Merlin. Pp. vi+317; with one chart. (Brussels: M. Hayez, 1 rue de Louvain, 1907.)

IN collecting and publishing the information contained in this volume, Prof. Stroobant and his collaborators have rendered a service of inestimable value to all interested in astronomy. The purpose of the publication is to permit astronomers of every class to learn readily what is being done in their own line of work, and by whom and where it is being done, and the arrangement of the matter makes this a very simple task.

In the main list all the known observatories are arranged in alphabetical order, and for each one is given the country wherein it is situated, its latitude, longitude, and altitude, the nature and titles of any publication it issues, the names of the director and staff, and, finally, a brief *résumé* of the observatory's history, instruments, and work.

This is followed by a list of astronomical societies arranged in the order of their foundation, a brief statement of particulars concerning each society, such as its meeting place, subscription, number of members, titles of its publications, &c., being given. The chief astronomical reviews are then similarly treated.

An alphabetical list of some 1500 names of individual astronomers gives page references to the list of observatories, which enables one to refer immediately to any person named, and find at once his specialities and resources. Then follow a geographical list of all the places referred to, and a list of the astronomical societies and publications of each country.

The work concludes with a chart of the world, on which the distribution of observatories is shown, and which should be consulted by those who are desirous of founding new observatories. Whilst western Europe and the eastern States of the U.S.A. are thickly dotted with observatories, only seven are shown in the whole of Africa. The southern hemisphere and the torrid zone are remarkably deficient in this respect.

The whole of the work of compilation and publication has been done by the Comité de bibliographie et d'études astronomiques of the Royal Observatory of Belgium. Their names appear on the title page, and they are to be heartily congratulated upon the efficiency and expedition with which they have performed their self-imposed task.

Lese- und Lehrbuch für ländlich-geübliche Fortbildungsschulen. By H. Gehrig, Dr. A. Helm-kampf, Dr. Th. Krausnauer, and Fr. Stillcke. Pp. vii+343. (Berlin: B. G. Teubner.) Price 2 marks.

IN Germany as in England and other industrial countries, there is a growing difficulty in keeping country lads in the country, and attempts are being made to stimulate interest in rural matters by giving definite agricultural instruction in certain of the schools.

The present volume is intended for the Fortbildungs-
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schulen, continuation schools at which attendance is compulsory for two or three years after leaving the elementary school. Like other readers in use at these schools, it contains literary and patriotic sections in addition to the purely technical matter. The book opens with a few poems and short prose pieces in praise of a country life, and exalting the husbandman's calling; towards the end comes the section headed "Deutschland über alles," describing some of the glories of the Fatherland.

The technical part covers a very wide range. Some of the readings deal with economic questions, cooperative societies and banks, liquidation of mortgages, the legal position of the workman with regard to holidays, taxes, &c. Others are hygienic, and give rules for bathing, advice about fresh air and tuberculosis, and first aid to the injured. The purely agricultural part occupies about a quarter of the volume, and is distinctly practical. Useful hints on the management of farm stock are given, together with general accounts of soils, crops and manures. There is also a collection of proverbs dealing with husbandry that will help the pupil fix in his mind the instruction he has received. So far the book is very good, both in conception and in execution. But we are not quite clear why the authors should have attempted accounts of apparently extraneous matters like the metallurgy of copper and steel, the theory of the microscope and of the dynamo. The treatment is necessarily vague and general, and the space might well have been utilised for a fuller development of things falling clearly within the scope of the book.

However, a good deal will depend on the teacher. If he is an enthusiastic countryman he will find the book very useful; if not, it may prove rather dull. Whether a reader of this sort will really attract boys to agriculture remains to be seen; the result of the experiment will be watched with great interest by those in this country who are trying to solve the same problem.
E. J. R.

La Houille verte. By Henri Bresson. Pp. xxii+278. (Paris: H. Dunod et E. Pinard, 1906.)

THE title of this work, if literally translated, signifies "green coal," and a word of explanation is necessary as to what this combination of words implies. The word "houille" in this sense is intended to convey the idea of energy, more particularly that due to waterfalls and rivers, and the qualifying adjective "verte," as opposed to "blanche," indicates that the sources of the energy are the rivers and watercourses to the exclusion of snow- and glacial-fed torrents.

A book with such a title might be an engineering work or a statistical record; in the present case the latter is the more correct description. Throughout the volume the scientific information is scanty and very elementary. A large part is taken up with a chronicle of the utilisation of water power in the various departments of France; this part comprises 127 pages out of a total of 278. The first half is devoted to "Généralités et Theories," but it must be confessed that the theories are not very serious, and that the generalities are the more prominent.

A large quantity of statistical information is contained in the last fifteen or twenty pages, in which several tables are given showing the volumes of the various rivers and the numbers of hydro-electric installations. These tables will probably be of more interest to the serious student of the subject than all the rest of the book.

The illustrations are fairly numerous, and consist chiefly of landscape scenes; they help to make the book appear lighter, but hardly serve any other purpose.