

in harvesting the pods, and of typical scenes on plantations.

It should be a source of satisfaction to Mr. Hart's friends that he was able to embody in this satisfactory form his unique experience in the cultivation of cacao.

T. A. H.

A YEAR-BOOK OF SCIENCE.

Jahrbuch der Naturwissenschaften, 1910-1911. Sechszwanzigster Jahrgang. Unter Mitwirkung von Fachmannern herausgegeben von Dr. J. Plassmann. Pp. xv+458. (Freiburg im Breisgau: Herdersche Verlagshandlung; London: B. Herder, 1911.) Price 7s. 6d.

A GENERAL survey of scientific progress becomes increasingly difficult, and more valuable when accomplished, as the number of original contributions becomes more unmanageable. The excellent publication of which we have here the twenty-sixth annual volume represents a serious attempt to cope with an equally serious situation. To compress the 6000 or so papers by which physical science is annually enriched into some forty pages seems a hopeless task, and the manner of its accomplishment necessarily depends upon the individual outlook of the enterprising reviewer. He will almost inevitably emphasise some things which are of little value and neglect some which future developments may show to be of fundamental importance. If, however, he limits himself to such matters as have reached a certain degree of conclusiveness, if not a conclusion, he will do good work, and can safely leave the unfinished and inconclusive things to his successor.

Dr. Konen's summary of physics deals with some seventy papers under sixteen different headings, and includes such diverse matters as Lebedef's measurement of the pressure of light on gases, the controversy concerning the possibility of electric charges smaller than that of an electron, and the quantitative study of Brownian motions by Perrin, Chaudesaigues, Seddig, and Siedentopf.

The chemistry section, edited by Dr. Dammann, is mainly practical, and describes such things as Harries's synthesis of rubber from isoprane heated in glacial acetic acid; the chemistry of "Ehrlich-Hata 606," the new specific against syphilis; and the synthesis of racemic adrenaline. The astronomical section, compiled by Dr. Plassmann himself, deals with spectroscopic binaries, variable stars, Mars, comets, and the determination of time and geographical situation, picking out a few papers only, and omitting a large number of contributions of at least equal interest.

Dr. Kleinschmidt, of Friedrichshafen, deals very appropriately with aeronautics and meteorology. Other sections are presented on anthropology and ethnology (Birkner), mineralogy and geology (Wegner), zoology (Recker), botany (Weiss, a very full section), forestry and agriculture (Schuster), geography (Schotte), medicine (Moeser), and technology (Ruegg). An astronomical calendar for 1911 and an obituary for 1910 complete the volume, which, in spite of the German type used, is bound to be of great utility as a first line of reference for the year's scientific progress.

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OUR BOOK SHELF.

Engines and Boilers Practically Considered: a Handbook for Young Engineers on the Construction and Working of Steam, Gas, Oil, and Petrol Engines and Steam Boilers. By W. McQuade. Pp. xv+87. (London: G. Bell and Sons, Ltd., 1911.) Price 3s. 6d. net.

THE author of this little book states that his object has been to treat in a simple, straightforward, and practical manner the various types of engines and boilers met with in general engineering with the view of providing a practical handbook for young engineers in general. Matters connected with the theory of the subject are not touched upon, or to the slightest extent only. The book contains sixty-two illustrations dealing with steam engines, steam boilers, and internal-combustion engines. The text comprises descriptions of these illustrations.

Remembering the class of student for whom the book is intended, one expects that the text and illustrations should be easily followed. In many cases index letters are not used in the drawings, an omission which is not calculated to help the young beginner. The drawings are clear as regards draughtsmanship, but in some cases are out of proportion, and a few contain minor errors. For example, a marine connecting-rod given on p. 9 has the set screws used for locking the nuts shown with the heads home against the face of the rod, thus rendering the screws useless for the purpose of locking. In some cases additional views of the part under consideration would have been useful.

Some important details are briefly described in the text without any descriptive sketches being given. An idea of the unevenness of treatment may be gathered from the fact that the action of the slide valve occupies eight pages, while a description of a set of triple-expansion surface-condensing engines shown in the frontispiece occupies one page. There is doubtless a place for a well-got-up book on the lines suggested by the author, and the present book, with considerable revision and additions, might be rendered capable of taking this place.

A Text-book of Physiological Chemistry. By Prof. O. Hammarsten. Authorised translation from the author's enlarged and revised seventh German edition, by Prof. J. A. Mandel. Sixth edition. Pp. viii+964. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd., 1911.) Price 17s. net.

PROF. OLAF HAMMARSTEN has resigned the chair he held for so many years at Upsala, but one is rejoiced to learn he has not relinquished work in the field where he has done such important service. Original papers from his pen still appear in the journals, and his well-known text-book continues to flourish, and has now reached a seventh German edition. The translation of this has, as in the past, been carried out by Prof. J. A. Mandel, of New York, who has performed what in his preface he terms a labour of love with his usual efficiency.

The book has considerably grown in size since its last edition; every chapter has been rewritten to bring it up to date, but the principal new feature is a chapter on physical chemistry in biology, which has been contributed by Prof. Hedin, Hammarsten's successor at Upsala. This adds considerably to the usefulness of the text-book. A book which has seen seven editions carries its own recommendation; one can merely congratulate its author, and express the hope that he may live to see many more editions through the press.

W. D. H.