

Though the books have only recently been placed upon the British market, they have attained a wide popularity in America, and we shall be much surprised if their attractiveness does not lead to their becoming favourites in this country.

It is always interesting to compare dictionaries, and some of the results of a comparison of those before us with one largely used in English schools will not be out of place. The first word, the meanings of which were placed side by side, was *steelyard*. In the school volume under notice was found "a simple device for weighing, consisting of a scale beam, counterpoise, and hooks," while the book with which it was compared gave "a balance for weighing bodies, consisting of a single weight shifted backwards and forwards on a graduated beam." But it is only fair to add that a small cut, of a not very intelligible kind, illustrates the American definition. The second word looked up in both volumes, this time using the student's edition of the Standard Dictionary, was *nebula*. In the dictionary under review is to be found:—(1) "Any luminous cloud-like object in the sky, as a distant star cluster; (2) A supposed gaseous body of unorganised stellar substance"; that in the familiar dictionary on our table:—(1) "An appearance as of light gauzy cloud amongst the stars, usually only seen through a telescope, often resolvable by a powerful instrument into clusters of stars; (2) A white spot or opacity in the cornea." Neither of the definitions is altogether satisfactory, for a nebula is not a star cluster any more than an amœba is a star-fish.

The new volumes have, however, several commendable characteristics, and will doubtless find a place in schools.

*Outlines of Bacteriology.* By Dr. L. H. Thoinot and E. J. Masselin. Translated by W. St. Clair Symmers, M.B. Pp. 318. (London: C. Griffin and Co., Ltd., 1899.)

THIS little volume, bound in leather, is evidently calculated to stand hard wear, and is put together in the hopes of becoming a bacteriologist's *vade mecum*. It differs from many such compressed manuals by the introduction of numerous quotations from the original memoirs; these extracts would have gained in value had the source been acknowledged in all cases instead of in certain instances only, one of the principal advantages of such references being to encourage the intelligent student to consult such memoirs for himself, and so extend his knowledge of the subject beyond the necessarily confined limits of a small text-book.

The authors are medical men, and it is for the medical student that the book has been written, and for this purpose it appears to be admirably suited; industrial bacteriology is not touched upon, and we think, therefore, the title is somewhat misleading, inasmuch as the authors deal with but one branch of bacteriology. It is clearly printed and copiously illustrated.

*Lehrbuch der Experimental Physik.* By Adolph Wüllner. Fifth edition, vol. iv., part 2. Pp. xii + 530. (Leipzig: Teubner, 1899.)

A TREATISE on physics which, by the issue of the above part, has now completed its fifth edition must evidently have been found useful; and it may safely be said that this edition will be found still more useful than its predecessors. The book has been fully revised and considerably enlarged; the additional matter representing the more recent advances in physics. The section which now lies before us treats of the propagation and perception of light, interference, diffraction, and polarisation phenomena and theories.

The thirty additional photographs in this edition are mainly owing to the advances in the electromagnetic theory of light, and to the increase of our knowledge with regard to the relations between light and magnetism (Zeeman effect, &c.) These and indeed all the parts of

the book are treated with great lucidity, thoroughness, and accuracy. We may call particular attention to the chapters dealing with polarisation; they specially please us. Those diagrams which represent three-dimensional phenomena in the plane of the paper do so in such a manner that the intention of each is evident at a glance; and the mode of dealing with the optical properties of the crystals selected for illustration of the general theory is such as to give a very complete view of the cited cases, and strikes us when contrasted with the treatment in certain other text-books which might be mentioned. Altogether, although the volume shares the fault of so many German books—viz., that it is not always free from dryness—we recommend it heartily as a thoroughly sound and modern text-book suitable for the use of the senior students in our university colleges. A. W. P.

*Proceedings of the Eleventh Annual Meeting of the Association of Economic Entomologists.* (Bulletin No. 20, New Series, U.S. Department of Agriculture: Division of Entomology.) Pp. 111. (Washington, 1899.)

THIS publication includes a series of useful and interesting articles on injurious insects, by Profs. Howard, Marlatt, Felt and other well-known entomologists. Fortunately, injurious insects seem to have their day of destructiveness, and then cease to do much mischief; at least, for a time, owing to natural or artificial checks. Thus, respecting the much-dreaded San José Scale, Prof. Marlatt writes: "It is not especially feared to-day in California, and, in fact, it is looked upon by some of the largest fruit-growers (as I am informed by Prof. Washburn) as having been of positive advantage, the yearly treatment of trees having necessitated a system of regular short pruning, which has greatly improved the quality of the fruit, and much lessened the expense of gathering." He, therefore, argues against undue alarm and excessive preventive measures respecting sudden and perhaps temporary insect attacks. Prof. Howard prints a translation from the Russian, by Dr. Fireman, of a paper by Porchinski, respecting the destruction of Tabanidæ by pouring kerosene into the pools to which they resort to drink. Other articles deal with caprification in California; the destruction of hairy caterpillars by birds; the progress of the never-ending campaign against the Gipsy Moth in Massachusetts, &c. W. F. K.

*Elementary Dynamics.* By W. M. Baker. Ch. xix. Pp. 251. (London: George Bell and Sons, 1899.)

ALTHOUGH necessarily similar in subject matter to the many existing treatises on this subject, the above little work will recommend itself by many convenient minor originalities. The descriptions are exceedingly minute and clear, and are in most cases followed by more worked-out typical examples than usual.

In addition to a set of examples at the end of each chapter, there is a useful compilation of more difficult problems at the end, selected from past examination papers. The scope of subject included has been chosen chiefly for the benefit of students preparing for Woolwich and Sandhurst, or reading for scholarships at the Universities.

*Handbook of Physics and Chemistry.* By H. E. Corbin and A. M. Stewart. Pp. vi + 424. (London: J. and A. Churchill, 1899.)

WITHOUT attempting any originality of style or subject matter the authors of this work have culled from the many authoritative sources the requisite information necessary for students preparing for the First Examination in physics and chemistry of the Conjoint Board of the Royal Colleges of Physicians and Surgeons. The book will also be useful to those working for the Pharmaceutical Society and the Royal Veterinary College, the syllabuses prescribed by these institutes being fully covered.