The lectures begin with nutrition—the taking in of food, the treatment of this food within the body, its distribution, storage, and transformation, and so on. The respiratory function in plants and animals is then dealt with. Then follow very interesting lectures on movement and irritability, and the author is particularly successful in his treatment of the various senses in plants and animals. The general facts and laws of response to various kinds of stimulus are admirably discussed, and the lectures end with an inquiry into the regulation and unification of functions. The reproductive function has been left for separate treatment.

Prof. Wagner has given us a very thoughtful book, which makes one reflective, and to our mind there is convincingness in its cumulative argument that biology is autonomous, and that it cannot do its own business with the instruments of chemistry and physics alone. Thus we are led at the end of these lectures to a deliberate, but by no means dogmatic, "Psycho-biology."

(2) Prof. Jordan has tackled an enormous piece of work—a comparative physiology of the invertebrates—and he is to be congratulated on the completion of the first volume, which deals with nutrition. With colossal learning, which must have meant many years of work, he discusses the nutritive function in the various classes. Incidentally, he has a good deal to say in regard to habits. The material is very well arranged; the style is clear; there are numerous good figures; and there is an index of about seventy pages. Prof. Jordan has himself made numerous contributions to comparative physiology, and he is at once critical and fair in the way he deals with the huge mass of facts which the active prosecution of a relatively young inquiry has placed at his disposal. After tracing the nutritive functions from class to class, he takes in the concluding chapter an interesting general survey of the different kinds of diet, the different ferments, the processes of secretion, digestion, and absorption, the *rôle* of phagocytes, and the process of storage. Zoologists and physiologists will be grateful to Prof. Jordan for this valuable book of reference.

OUR BOOKSHELF.

Notes on Sampling and Testing. Second edition: revised and enlarged. Pp. 96+plates. (Manchester: Marsden and Co., Ltd., 1913.) Price 1*s.* 6*d.*

THE testing-house of the Manchester Chamber of Commerce was established some eighteen years ago for the examination of yarn and cloth as regards proportion of moisture, "strength," and other physical properties. To these objects have since been added others, including the analysis of sizing materials used on textile fabrics; the testing of wood pulp, oils, metals, fuels, and water; and also investigations respecting the causes of defects in fabrics—for example, mildew, stains, and "tenderness" or deficiency in strength. The handbook contains notes explaining certain of the processes used, the standards adopted, and the reasons for the choice of methods and standards. Examples of calculations are given, and tables of numerical data, with various diagrams and curves, one showing, for instance, the effect of atmospheric moisture on the strength of different kinds of cloth. Notes on the precautions to be taken in sampling articles for testing are included.

The services of the testing-house are not restricted to the members of the Chamber of Commerce, but are available to the public generally: and during the last ten years the number of samples submitted annually has more than doubled. One notable function of the establishment is to afford help in settling differences between manufacturers or merchants, especially where the experience of the testing-house is of value and analyses are required.

For those interested in textile industries, to whom it is more particularly addressed, the book will no doubt prove useful.

Physik der Gestirne. (Bücher der Naturwissenschaft. Vol. xiii.) By Prof. J. B. Messerschmitt. Pp. 195+13 plates. (Leipzig: Philipp Reclam, jun., n.d.) Price 1 mark.

FOR German readers this small volume affords an interesting and useful summary of the astrophysics of to-day. The introductory chapters deal with spectrum analysis in general, the solar spectrum and the spectroscope; the various conditions, *e.g.*, pressure, radial motion and magnetic fields, which modify the radiation are briefly but sufficiently discussed.

A considerable space is devoted to solar physics; and, for so small a volume, the general principles are stated very clearly and completely. On debatable subjects, such as the spectroscopic proof of water-vapour in the Martian atmosphere, Prof. Messerschmitt is commendably reserved, and states the views of both sides with judicial equanimity. More space might usefully have been devoted to the subject of stellar spectra, but the main points are enumerated, and a short, special chapter is devoted to the consideration of stellar temperatures.

Various tables, such as that showing the brightness of the sun's surface at different distances from the centre, and another giving the relative brightness of the chief nebula line in various nebulæ, afford the student a clear view of many important special problems, while the excellent plates will go far in fixing the general ideas in his mind.

W. E. R.