

by the planets and the force of gravity at their surfaces, is therefore most useful. Mercury and the outer planets are easily disposed of, and Mr. Maunder even considers what would be the condition of Jupiter and Saturn if cooled sufficiently to become solid at the surface. The results are not encouraging.

Special interest attaches to Mars, which is therefore discussed in considerable detail. The atmosphere is thinner than that at the top of the Himalayas, and though the maximum temperature is well above the freezing point, water must be normally in the state of ice and cannot be liquid to a depth of more than one or two inches, and that only in the torrid zone and during a few hours each day. Mars is therefore essentially a frozen planet, and the extremes of cold experienced there, not only every year, but every day, far transcend those of our polar regions. If there is any vegetation it must be confined to some hardy forms of a low type, stretches of which may account for the so-called "seas." The polar spots cannot be caused by snow, but only by hoar frost.

In a chapter on the illusions of Mars it is shown that recent observations tend to resolve the canals into disconnected knots of diffused shadings. They are therefore caused by an immense number of minute markings which, when fairly near each other and separately below the limit of distinct vision, appear like lines. Several other illusions of Mars not alluded to by the author were exposed by Johnstone Stoney in his papers on telescopic vision in the *Philosophical Magazine* in 1908.

Venus is thus the only planet left which may be inhabited; but the question hinges altogether on whether the rotation-period is something like that of the earth, or equal to the period of revolution round the sun, which is still uncertain. In the latter case one half of the planet will be scorched and the other half frozen.

OUR BOOKSHELF.

Life in Ancient India in the Age of the Mantras.

By P. T. Srinivas Iyengar. Pp. x+140.
(Madras: Srinivasa Varadachari and Co., 1912.)

THIS little book is a good example of the kind of work which native Indian scholars are competent to undertake. The author wisely leaves to European scholars the comparative study of ancient Hindu beliefs and custom. He has undertaken the more useful, if less ambitious, task of analysing the Vedic Mantras, that is to say, the older collection of hymns, as contrasted with the Brahmanas or ritualistic treatises which supplement them. He brings together in a systematic, readable form the scattered references illustrating

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belief and custom. On the religious side he quotes the original texts describing the priest and his duties, magic, sacrifice, the fire cult, and the state of the soul after death. In the social department he deals with the king and his nobles, agriculture and other occupations, medicine and surgery, household life, war, sea voyages, amusements, the status of women, and so on. In each case he gives literal translations of the original texts, either made by himself or collected from authoritative versions, with detailed references to the originals. The value of such a collection is obvious, and the work, so far as it goes, has been carefully and judiciously carried out. In a new edition he would do well to replace the extracts in Sanskrit, which is unintelligible to most European anthropologists, by a Latin version in those cases where it is impossible to give an English rendering.

Mr. Srinivas Iyengar proposes, with the help of other scholars, to extend this series through the later periods of Indian history. If these monographs are prepared as carefully as that now before us the series will be welcomed by European students of Hindu beliefs and sociology.

Probleme der physiologischen und pathologischen Chemie. By Dr. Otto von Fürth. 2 Band. Stoffwechsellhre. Pp. xiv+717. (Leipzig: F. C. W. Vogel, 1913.) Price 23 marks.

THE appearance of the second volume of Prof. v. Fürth's important book will be welcomed by all who have profited by reading the first volume. The total work is divided into fifty lectures, twenty-five in each volume. They might just as well have been called chapters, for no teacher could ever give lectures of such portentous length. Those before us treat of the large subject of metabolism, both in health and disease. We therefore not only find a description of the chemistry of nutrition, secretion, gaseous exchanges, and so forth, but large sections are devoted to the consideration of such subjects as diabetes and fever.

The book is fully worthy of its author's eminence in this branch of knowledge, and abundant references to literature occur on every page. The information is admirably up-to-date, and the book can be confidently recommended to advanced students as authoritative and interesting. The interest might have been increased by the insertion of illustrations; even the advanced student will find it difficult, for instance, to grasp the meaning of dissociation curves of hæmoglobin unless these are graphically represented.

Prof. v. Fürth is to be congratulated on the completion of his ambitious task, and his readers will wish it every success. W. D. H.

Practical Management of Pure Yeast. The Application and Examination of Brewery, Distillery, and Wine Yeasts. By Alfred Jörgensen. Translated by R. Grey. Second edition. Pp. 128. (London: *The Brewing Trade Review*, 1913.) Price 5s. net.

THE first edition of this book was reviewed in NATURE of November 5, 1903 (vol. lxiv., p. 4). The present issue has been revised and greatly