

The presentation of the statistical methods has been considerably revised and improved. The treatment is very sound and comprehensive, though perhaps, for a beginner, some parts are too condensed, and scarcely enough stress is laid on criteria of significance.

Dr. Coward might well consider amplifying some of these useful statistical chapters; she could gain space for it by cutting out unnecessary repetition in the description of biological technique. To quote only one example of redundancy, the formula of one salt mixture is given in full no less than three times, on pp. 32, 135 and 155.

Most misprints of the first edition have been corrected; but by a strange fluke 'ingestion' has again escaped unscathed, to appear repeatedly on pp. 17-19.

In too many branches of science the standard monograph is a dry-as-dust compilation by scissors and paste. Vitamin workers in the field of biological standardization are fortunate to have in Dr. Coward a mentor who knows and loves the land through which she guides them. We wish her well in the task of charting for her third edition the discoveries of the next ten years.

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VEGETATION OF THE ARGENTINE

La vegetación de la Argentina

By Profs. L. Hauman, A. Burkart, L. R. Parodi, and A. L. Cabrera. (Geografía de la República Argentina. Vol. 8.) Pp. 350. (Buenos Aires: Gaea, Sociedad Argentina de Estudios Geográficos, 1947.)

UP to the present, the botanist or agriculturist desiring information on the plant cover of the Argentine has been obliged to seek it among a large number of scattered publications, some in rather obscure periodicals, many out of print. Assistance has been given in recent years by Castellanos and Perez-Moreau's valuable classified bibliography of South American botany, published in *Lilloa*, volumes 6 and 7, 1941, and by the reprinting of some of the older works, such as, for example, Hieronymus' "Observations on the Vegetation of the Province of Tucumán", 1874, republished in 1945 by the University of Tucumán; but no compact account of the plant resources of this extremely varied country has yet been available. The appearance of the volume now published by the Argentine Society of Geographical Studies and written by botanists of authoritative position is, therefore, much to be welcomed. It is concise and so far as possible complete, although as Cabrera, writing of the Patagonian shrub steppe, notes, there is still much room for botanical and sociological investigation. The material was ready for publication in 1939; but printing had to be deferred until 1947.

The work has a geographical bias, and the subject-matter is arranged in accordance with the natural regions into which the Argentine is divisible. These are mapped by Parodi. Hauman, the senior author, has written the introduction and the sections which deal with the forests of Misiones and those of the 700-km. long narrow strip running from north to south through the provinces of Salta, Jujuy and Tucumán; with the Gran Chaco; with the enormous scrub or thorn woodland area known as the *Monte*; and with the sub-Antarctic forests and the Andean regions. Burkart describes the Mesopotamian region

lying between the Rivers Paraná and Uruguay, in which forest alternates with savannah, the latter predominating. L. R. Parodi contributes the account of the great grass steppe of the pampas, and A. L. Cabrera that of the Patagonian shrub steppe.

The reader is impressed by the wealth of plant resources of the Argentine and by the great diversity of the material described. The influence of cultivation and stock-raising is perceptible principally in the pampas, not always to the detriment of the plant cover. Where, however, the exploitation of light lands in dry, wind-swept areas is excessive or even is practised at all, there is grave risk of wind erosion. This is so in a very large part of the middle west, where shifting sand dunes 30-40 m. in height, practically denuded of all vegetation, are to be seen.

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GUSTAV FECHNER

Religion of a Scientist

Selections from Gustav Th. Fechner. Edited and translated by Walter Lowrie. Pp. 281. (London: Kegan Paul and Co., Ltd.; New York: Pantheon Books, Inc., 1946.) 17s. 6d. net.

DR. LOWRIE'S biography of Fechner and selections from his writings make an interesting book. Fechner was a remarkable and most unusual kind of man, as unlike the standard nineteenth-century German professor as can be imagined; a poet, humorist and above all a Romantic. He is remembered chiefly in connexion with the Weber-Fechner law. His work was certainly a landmark in the study of sensory response. But the range of validity of the Fechner law is restricted; it states the value of a ratio between two physical quantities (total stimulus and least discernible increment), and what it signifies psychologically is doubtful. The assertion on the dust cover of this book, that through Fechner "psychology developed into an 'exact' science susceptible of mathematical treatment", is, to put it mildly, misleading. Dr. Lowrie himself says nothing of the sort.

There is a legend that Fechner was a physicist who was afflicted in middle life by an illness which affected his sight and probably his reason, and he thereafter gave up science and took to religious mysticism. Dr. Lowrie's narrative explodes the legend. Fechner's best-known religious work, "Life after Death", was published four years before his illness, and the work on Fechner's law was done several years after. All his life he found the mechanistic view of physical science intellectually stifling, and fought against it; first with parodies and jokes, afterwards more seriously and constructively. He took a pan-psyche or pan-theistic view of the natural world rather characteristic of the Romantics of his period. Unlike most of them, however, he did not turn his back on science; instead he tried to enlarge the scientific insight.

Fechner was rash in speculation and perhaps entirely mistaken in thinking that scientific thought could transcend its traditional limits. The mistake was not that of a man who is just stupid or ill-informed. The illness he had still remains mysterious, but does seem to have originated in mental conflict of some kind. Physiologists should note the strange diet of raw lean ham soaked in wine and lemon juice which initiated Fechner's recovery from his digestive troubles (p. 38).

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