

limits the variation of function of a cell to increase or decrease confirms the observation that the differences between various feelings are quantitative.

Whatever the view taken of this fascinating explanation, there is one plea in this book which must be whole-heartedly endorsed. It is that psychiatric research should receive much more consideration in the effort to determine the nature of normal mental processes. The services rendered to physiology by pathology are well known; in the sphere of the nervous system and neurology they have been of first moment. Yet, apart from the very dubious conclusions drawn from the study of the hysteric and neurasthenic, psychology has learnt little from observation of the mentally abnormal. Perhaps this reproach applies more to psychology in England than elsewhere; in no other country is better provision made for the care of the insane; the field for research is correspondingly greater. If the hint from the Danish psychiatrist is taken, psychology may make even more progress during the next decade than it has in the last.

*The 'Eötvös' Torsion Balance.* Pp. 90. (London: L. Oertling, Ltd., n.d.) 21s.

WHEN a scientific instrument assumes a commercial value beyond its intended scientific use, trustworthy and detailed descriptions of its construction and of the method of its operation become scant if not altogether inaccessible. This class of instrument includes the Eötvös torsion balance, designed in 1888 by the Hungarian physicist, Roland Eötvös, for analysing the local anomalies produced in the normal gravity conditions by tectonic and geological abnormalities. Of this period, extensive literature is available both as regards construction of the balance and the results of measurements. But since the torsion balance proved to be one of the most useful instruments available for the location of mineral ore deposits, and a considerable refinement has been achieved in its design, trustworthy sources of information and details, from which an independent judgment could be drawn, have been deplorably lacking. The commercial necessity of secrecy by users of the torsion balance renders valuable observational data inaccessible for an indefinite period. The present book is the first comprehensive treatise on the balance published in any language, and it presents a host of informative details.

The subject is treated in two parts. Part 1 presents the theory of the balance, the derivation of working formulæ, the method of making observations, the relationship of the quantities derived, the classification of gravitational effects and computation and elimination of normal, terrain, and topographical effects. The second part embodies notes on the practical employment of the balance and recommends itself particularly to the physicist operating the instrument. These two parts, which comprise three-fourths of the book, constitute a concise and broad treatment of the balance and apply to any model of the instrument. The third part gives a description of the Oertling model, in which instrumental details are described and illustrated with commendable candour.

This book is no touchstone whereby, with the aid of the instrument, valuable mineral deposits or oil domes can be located in a trice. The collection of

observational data is routine after a preliminary training, but the rational elimination of effects extraneous to those of the deposit sought and the correct interpretation of the results thus obtained are problems of considerable difficulty calling for skill and extensive geological experience. Yet even in these difficult matters, this book offers a safe and instructive preliminary guide. Messrs. Oertling and the authors are to be congratulated on producing this well-bound, well-printed and arranged pioneer text-book on the Eötvös torsion balance, a subject the treatment of which on the lines here adopted has been long overdue.

E. R. F.

*A Psychological Study of Immigrant Children at Ellis Island.* By Dr. Bertha M. Boody. (Mental Measurement Monographs, Serial No. 3.) Pp. vi+163. (Baltimore, Md.: Williams and Wilkins Co.; London: Baillière, Tindall and Cox, 1926.) 18s. net.

EXAMINATION of immigrants at Ellis Island has been stimulated by fervid political propaganda maintaining that north-western Europe is better than south-eastern, and by sob-stuff propaganda dilating the hardships of those rejected by the apostles of eugenics. Mental measurements now permit exact inquiry.

Those more than sixteen years of age are expected to read. The Army 'Alpha' test seems to show the superiority of the north European, but in terms of Army 'Beta' the Latins are less inferior. The problem has been to invent new forms of performance tests which can be set in dumb show to a mixed group "of an Arab, a Greek, an Italian, a Welsh boy, an Armenian and a Russian. The members of such a group do not talk together; but they laugh together and spur each other on" (p. 103). The invention of such tests running smoothly and in silence without pencil or interpreter has been the great achievement (p. 132). Picture completion, form board, button holes, drawing stars, Binet weights, card sorting, bow knot are among the tests used.

The conditions of the examination are not ideal. Imagine a crowd of children of all ages, unequally seasick, exhausted, frightened, excited. What "recognition of the general emotional upset" would they demand? Attendance at the Island school is optional, and there is much interruption.

The tentative conclusion is that there are great differences, but that these differences are individual and not traceable to ancestral race or state nationality. But the numbers tested—27 Germans, 22 Armenians, 27 Hebrews, 15 Poles, 19 Italians, etc., of divers ages—seem too small to admit of any conclusion.

Chinese, Japanese, and Indians do not appear on the eastern seaboard. If the immigrant Irish are a mixed sample, it must not be assumed that they are a fair sample of those left behind in Ireland or that the sampling will not change as they segregate and settle industrially.

The direction of progress seems to be in examination at the home port of departure, maintaining exclusion of lunatics and deficient, and reliance on mental measurements rather than national quotas.

The book may be commended to schoolmasters, missionaries, and employers of native labour.

HUGH RICHARDSON.