

THURSDAY, FEBRUARY 20, 1913.

IMMIGRATION AND ANTHROPOMETRY.

Changes in Bodily Form of Descendants of Immigrants. By Prof. Franz Boas. Pp. xii+573. (New York: Columbia University Press; London: H. Frowde, 1912.) Price 7s. 6d. net.

IN the year 1908 Prof. Boas, at the request of the United States Immigration Commission, began an investigation into the physical characteristics of immigrants. The volume under review contains an elaborate tabulation of the anthropometric data obtained, together with an analysis of the conclusions drawn from them. One of the most remarkable of the facts brought to light is the changes undergone in head form by the descendants of Hebrews and Sicilians. The cranial index of the former when born in Europe appears to be about 83; it sinks to 81 among those born in America. Among the latter, on the other hand, the index rises with the change of birthplace from 78 to more than 80.

It has been suggested, as a mechanical explanation of the relative lengthening of the Hebrew skull in America, that in Europe the babies of this race when very young are wrapped up in swaddling clothes so tightly that they cannot move themselves, and kept lying on their backs; that thus there is constant pressure on the back of the skull when it is in its most plastic condition, with the result that it decreases in length but increases in breadth. In America much greater freedom is allowed to the child, and it can lie as it likes, sometimes on its back, sometimes on its side; consequently, with the removal of the conditions which produce an artificial shortening a longer skull is developed. Prof. Boas examines and dismisses this hypothesis. One of the principal objections to it is that if it applies to the Hebrews it should apply to the Sicilians and Bohemians, who also keep their babies tightly swathed, but the relative length of the skull among the children of Sicilian and Bohemian immigrants decreases instead of increasing.

It has also been argued that the results obtained are due to the fact that the types of immigrants of each nationality have been changing gradually, but an examination of the cranial indices of Hebrews who immigrated at different periods from 1880 to 1910 show that the index is constant throughout this period, and in addition to this the difference between those who arrived in any particular year and their descendants is the same as that shown by a similar comparison involving the whole series.

The reality of the results is confirmed by the fact that the changes noted are more marked among those children who were born more than ten years after their mothers had arrived in the United States than among those whose mothers had arrived more recently.

Although the numbers dealt with are not very large, it is difficult to suppose that the results are due merely to chance, nor can they be attributed to what might be called a statistical accident. There does not appear to be any ground for deciding whether they are due to the influence of a changed environment or to the selective elimination of certain types. Prof. Boas inclines to the former view and urges that the onus of proof rests on those who hold the latter. They will probably be inclined to disagree with him on this point.

E. H. J. S.

PROBLEMS OF THE COTTON PLANT.

The Cotton Plant in Egypt. Studies in Physiology and Genetics. By W. Lawrence Balls. Pp. xvi+202. (London: Macmillan and Co., Ltd, 1912.) Price 5s. net. (Macmillan's Science Monographs.)

THERE can be no doubt of the freshness and originality of mind with which Mr. Balls has attacked a great diversity of problems in their application to the cotton plant. Some of these questions are genetic, some pathological, some physiological in the stricter sense, and most of them involve considerations of direct economic importance.

Starting with the intention of improving the Egyptian cotton crop, the author found himself led on from one problem to another, and to the solution of each he makes a real contribution, often approaching to the dignity of discovery. His analysis of growth-rate and of the many influences which affect it is an illuminating piece of work, full of novel suggestions, and a botanical physiologist, looking for a line of work, might with profit follow up any of the various threads which Mr. Balls lets drop in his course.

The same is true of that part of the book especially relating to genetics. The F_2 generation was often of a most complex type, and by the application of a graphic method of analysis apparatus is introduced which may probably assist in the unravelling of other similar cases. In his study of the heredity of seed-weight, new and interesting ground is broken. It is shown that a form with seed actually light is genetically endowed with the capacity to form heavy seed, but, owing to the smallness of the boll, the seed does not become heavy. The problem of interference between