

the accuracy of Ptolemy's latitude and longitude; therefore it must be the declination that was in error; this, he thinks, was extrapolated from the declinations observed by Timocharis and Hipparchus, and he concludes that Ptolemy observed no declinations at all, but merely deduced them from Timocharis and Hipparchus. This probably suggested to Tycho Brahe the more sweeping charge, adumbrated in his "Progymnasmata" ("Opera," ii., 151), and stated clearly in the introduction to his Catalogue ("Opera," iii., 335), that the whole of Ptolemy's Catalogue was merely a reproduction of the Catalogue of Hipparchus, reduced to Ptolemy's epoch by means of a constant correction to the star places. This charge has had a wide currency, but has been refuted by Laplace and Ideler, and finally by Dr. Dreyer in his paper, "On the Origin of Ptolemy's Catalogue of Stars," *Monthly Notices of the Royal Astronomical Society*, lxxviii. (1918), pp. 343-49. The absurdity of Rothmann's original charge may be shown by a computation of the position of Regulus for the epoch of Ptolemy's tables. Ptolemy's declination, as it happens, is correct, but his latitude is in error, and his longitude is greatly in error, doubtless because his tables gave a false longitude to the sun, with which Regulus was compared.

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### Psychological Tests in Industry.

*Employment Psychology: The Application of Scientific Methods to the Selection, Training, and Grading of Employees.* By Dr. Henry C. Link. Pp. xii+440. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1919.) Price 10s. 6d. net.

EXPERIMENTAL psychologists in this country have always been keenly interested in research into individual mental differences, but to America we must turn for the first attempts to apply psychological tests to vocational selection and guidance. As might have been expected, an alternative method has arisen which claims to judge special abilities, aptitudes, and characters by the methods of phrenology, the colour of the hair and eyes, the texture of the skin, the slope of the handwriting, the squareness or roundness of the face, the shape of the chin, etc. As Dr. Link points out, attempts have been made to transform this method into "a reliable and scientific method of character analysis. . . . This so-called science has received wide publicity and has been accepted [both in America and in this country] by many prominent and hard-headed business men. It attempts to place observation

on a scientific basis by assuming that certain observable physical characteristics are identified with certain definite mental qualities, and by asserting as a corollary that a visual observation and measurement of the physical characteristics enable the observer to gauge a person's mental, moral, and emotional qualities. The smattering of scientific phraseology in the presentation of this method is just sufficient to impress those who have only a superficial knowledge of the scientific facts involved. . . . The fundamental assumption on which the so-called science of observation rests is an assumption entirely unwarranted by the facts" (pp. 240, 241).

Contrast with this the methods of industrial psychology. The psychologist first "finds, by means of an experimental process, what the relevant activities in an occupation or an operation are." This he does by means of tests which are tried out on workers whose ability is known and with whose work success in the tests can be compared and correlated. In this process he also discovers the standard which ought to be reached in the significant tests by those who wish to succeed at the kind of work in question. He then standardises the manner in which these tests should be used, so that every applicant for a particular kind of work will be examined in exactly the same way, and his ability determined according to the same formula (p. 249).

As Prof. Thorndike indicates in his introduction, "Dr. Link's book is important because it gives an honest impartial account of the use of psychological tests under working conditions in a representative industry. He has the great merit of writing as a man of science assessing his own work, not as an enthusiast eager to make a market for psychology with business men. Indeed the story of his experiments is distinctly conservative. . . ." (p. x). They included the testing of girls and men, of clerks, stenographers, typists, and "comptometrists," of machine operators, apprentice tool-makers, etc. They show what a wealth of valuable information for vocational guidance they can afford, and how excellent a corrective they are to the vague, inaccurate knowledge too often possessed by the foreman of the relative abilities of those who work under him. The tests used are fully given in an appendix to the book. The volume clearly indicates the importance of employment psychology, alike to the employer who "wishes to obtain the best possible kind of human material," and to Labour if it "wishes to carry out collective bargaining, if it wishes to base its claims for individuals on the sound basis of ability and training" (p. 389).