In reducing to a commensurable series a number of test methods independent of language, the authors have done service that their colleagues in mental measurement will not estimate lightly. Grow-
ing out of work with deaf children, it readily extends itself to lan-

guage difficulties of all kinds. The tests in the scale are fifteen in

number, as follows:

1. Mare and foal (Healy, omitting geometrical forms).
2. Seguin Form Board (after Goddard and Twitmeyer).
3. Five-Figure Board (Paterson).
4. Two-Figure Board (Pintner).
5. Casuist Form Board (Knox).
6. Triangle Test (Gwyn).
7. Diagonal Test (Kempf).
9. Manikin Test (Pintner).
10. Feature Profile Test (Knox, Kempf).
11. Ship Test (Glueck).
12. Picture Completion Test (Healy).
13. Substitution Test (Woodworth and Wells).
15. Cube Test (Knox, Pintner).

Governing factors in this series were (1) selection of tests seem-
ing to call for "different types" of response, (2) presentation of
relatively new situations, (3) elimination of verbal instructions for
the tests. If verbal instructions are used with the normal child, it is
simply because it would be unnatural not to do so; their omission
does not change the essential character of the test. Detailed ac-
count of each test is given, and another printing might well com-
plete its intelligibility to the beginner by illustrating the Goddard
Adaptation and the Seguin Boards. It is noticeable that the tests
are largely of the form-board type. A time limit of 5 minutes per
test is generally assigned; perhaps D. N. C. would be advantageously
replaced by some simpler convention for "did not complete."

There follow discussions of the factor of social status, and of the
numbers necessary for norms. Graphs are presented showing rela-
tively slight changes induced by adding further cases after certain
limits are reached. Three types of standardization are distin-
guished; the simple determination of norms, their classification in
an age scale, and their distribution by the percentile method.

The standardizing work of the authors is first presented in
tables giving the complete distribution of scores, and by graphs
which indicate the median and the 25 and 75 percentiles. Later
tables give the ten percentile distributions at each age for all the
tests. A suggestion is thrown out for using as the criterion of mental
age the simply obtained median of mental ages in the various tests.
Determining it shows the "scattering" of the subject.
Critical attention is given to scoring policies, and the work nowhere appears to better advantage than in the chapters on the Year Scale, the Point Scale, and the Percentile Method. The authors have in mind a similar goal to that set by Yerkes, a series of tests based upon the concept of developing functions having commensurable values through more or less of the whole developmental period. That performance in a test is regarded as distinctive for a certain age, which is reached by 75 per cent. of the individuals at that age. As tests of the present type show many degrees in quality of performance, it is possible to use most of the tests at many different ages. As is illustrated, suppose that the 25 percentile in a test at age seven is 31 and at the age eight it is 18. This means that at age seven the upper 75 per cent. make scores better than 31; therefore, 30 is taken as one limit and this limit extends down to the limit of age eight. All those with scores between 30 and 18 have seven-year credit, since 75 per cent. of seven-year olds make scores better than 31; but if they score better than 18 they receive eight-year credit.

In adapting the standardization to a point scale, three principles of allotting points are discussed. One may observe the number of breaks in the age curve of a test, and assign as many points as there are such breaks. The objection is raised that this does not apportion the amount of credit to the difficulty of the test. One may allot an equal number of points to each test; for example, if 20 points are allotted to each test, and a test shows five progressive types of performance, 4 points for each type is credited. The poorest type of performance scores 4 points, the next 8, etc. The most approved suggestion is giving to each type of performance a credit proportional to the chronological age for which the performance is distinctive. Thus, "since average five-year-olds can do two moves on the adaptation board, we must give a score of 5 to two moves on this board; for four moves on the board we must give a score of 6, since four moves is the average performance of six-year-olds."

The work is calculated to bring out great advantages in the relative position method of scoring, of which the authors are fully aware. In dealing with children these advantages have been obscured by the convenience and immediate significance of age norms, though the method is patently indispensable where development with age has ceased to be a governing factor. The comparative steps here used are ten-percentiles, which give a practically sufficient picture of the distributions. The child's ability can be expressed as that of a 10, 20, 60, or 80 percentile child of his own age. "Constant use of the percentile method would soon lead us to attach very definite meanings to such terms."
A point of detail, but a good one, is the correction of a time score for errors by adding to it a percentage of itself based on the number of items in the test. In a fifty-item test, for example, "each error is counted 1/50 of the total time for the test." So small a proportion, indeed, barely penalizes the errors at all. The weight to be given errors must vary with different kinds of experiments, but three times the requirement for an item of correct response would seem a minimum.

The value of the work is independent of any particular concept of intelligence, but some comment on this will not be out of place if the authors are correct in quoting as "generally accepted" Stern's definition of intelligence as "the general capacity of an individual consciously to adjust his thinking to new requirements; general mental adaptability to new problems and conditions of life." The first half of this definition is unexceptionable, but the second is hardly consistent therewith. The intelligence scales fit the first part but too well to fit the second, it being notorious that complete failure of social adaptation is possible in the presence of normal or even supernormal IQ. It is Mr. Facing both ways who formulates a definition of intelligence in terms of what can be measured experimentally, and then interprets that intelligence as equivalent to the whole personality. Intelligence being conceived as that factor in human adaptations which is governed by cognitive and conscious elements, we have in the scales a measurement of intelligence in its purest form. They tell us not what the subject is, but they do tell us what he knows. And through analyzing this intelligence as it is not analyzed by actual life, they perform what is, indeed, the primary function of scientific experiment. They analyze one factor in the personality which in ordinary life is combined inextricably with emotional, volitional, unconscious factors. Says the IQ to the imbecile, "You are old enough to know better;" and to the psychopath, "You know better than to act the ten-year-old."

F. L. Wells.

McLean Hospital,
Waverley, Mass.