Short Notes and Clinical Cases.

A NOTE ON INTELLIGENCE TESTS.

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THE study of the child mind is occupying more and more attention in modern times. Considerable advances have been made comparatively recently, chief amongst which has been the establishing, on a scientific basis, of a standard by means of which the individual child's intelligence can be judged. Binet's tests, while being admittedly scientific, were framed from the practical standpoint, and their introduction marked a definite era in the investigation of child psychology. The publication of his conclusions has been followed by the appearance of several modifications of the Binet tests. The literature in English on the subject is somewhat meagre, and the recent publication of *The Measurement of Intelligence*¹ will be of considerable service to English workers. The author bases his work on the Binet tests, giving certain modifications and additions which he has proved of value in practice (these constitute his Stanford revision of the Binet method).

Everyone has recognized more or less definitely for himself the existence of those finer grades of intelligence by which particular children are marked off the one from the other; but we are accustomed to think of such differences in the abstract—for want of a definite system by which intelligence may be investigated. Roughly speaking, children have been grouped into (1) normal, and (2) backward or feeble-minded. When considering the latter, the medical mind has been occupied too much by the physical accompaniments of mental deficiency—the so-called stigmata of degeneration (shape of skull, anomalies of ear, eye, palate, hands, etc.), while the analysis of the mental state has tended to be neglected. It is indeed true that Binet's tests are of considerable value in estimating degrees of feeble-mindedness, yet it is now obvious that a much wider field of utility is provided for them by the group of children whom in a vague sense we term 'normal'. Many weeks, or even months, may be painfully traversed before a given child's limitations may be established. Such time is not only wasted, but is harmful to the young scholar from the point of view of his being held up as a 'failure'. With the Binet

tests a very complete examination of the intelligence can be made in the course of a single hour. Further, the advantage of such a scale is that a comparative test can be carried out six-monthly, yearly, etc., and the rate of advancement estimated with due regularity.

The Tests.—The special books on the subject must be consulted for the details representing the actual scale of the Binet tests.² Suffice it to say here that it is a system of definite standards of intelligence compiled for almost each year of child life. There are six tests in each of the yearly intelligence standards from the age of three years to ten years. The eleventh year and thirteenth year are omitted, and thus standard tests for the twelfth and fourteenth year only are supplied. In order to give a sense of completion to the method, the series terminates with a standard test for adult life (sixteenth year). Much care is necessary in the application of each series of tests. The subject must not be allowed to become tired during the examination, the duration of the test being varied according to age. The examiner must be able to hold the child's attention by maintaining interest. Outside distractions must be carefully guarded against. Mental anxiety on the part of the child as the result of being in the presence of a stranger must not be ignored. The presence of a third person paves the way for the entrance of additional complications. Tact and knowledge and understanding of children, are the essentials to success, i.e., the personality of the examiner is of very considerable importance.

The Application of the Method.—Judged by these standards, the large promiscuous group of so-called 'normal' children becomes an interesting series of fairly well-defined grades. Instead of, as before, possessing a vague ill-defined idea concerning a particular child's ability, the examiner can now carry out an investigation and measure his intelligence against a series of well-defined standards. Such an estimation is of value to the child as well as to his fellow scholars, who, as the case may be, are either retarded by him or vice versa. It must be understood that the tests are not tests of learning but of the standard of intelligence with which the individual is endowed. It is the ability to learn which is being weighed in the balance, and not the amount learnt. Practical experience of the Binet tests has established the wide variability of such capabilities in the mass of normal children to a degree which is indeed surprising. The result of the investigation gives the mental age of the child. This may correspond with the actual age, or be either well behind or in advance of it. The tests now in use do no more than estimate native intelligence up to the standard reached by a normal individual of sixteen years (the so-called adult standard). When it is required to express the result of the examination of intelligence numerically, this may be

done by means of the intelligence quotient (I.Q.). This is obtained by dividing the mental age by the real age. Thus, if a child of twelve years gives, as the result of testing, a mental age of nine years, I.Q. is $\frac{9}{12}$, or .75.

Practical Utility and Scope of the Measurement of Intelligence.

—Children whose mental age is well in advance of their real age should be placed under special conditions, where, without any undue forcing, the faster progress of which they are naturally capable is open to them. Those whose mental age is behind the real age can be graded down to their appropriate school class, and in this way much unnecessary punishment and disappointment avoided.

Where the intelligence is sufficiently low (I.Q. about .75) for the child to be graded as feeble-minded, a large field begins to open out for discussion, in which eugenics, charity associations, defective schools, etc., etc., all figure. It must be left to future advances in this work to point the way to definite courses of action. At present all one can say, when confronted with the indisputable evidence that from one mentally unsound partner in marriage between four hundred and seven hundred offspring—a large percentage of whom are feeble-minded, vicious, and criminal—have been traced, is that there is a large scope in this preventive branch of medicine from the national point of view.

At the same time it must be remembered that grading the child intelligence by any stereotyped set of rules is an exceedingly ambitious undertaking. In the wrong hands, it is quite easy to see, the result might be a disastrous interference. The dangers of the application of such a method will no doubt be reduced to a minimum as its use becomes general. The Binet tests, as they stand, act as an indication of the presence of a high-grade intelligence on the one hand or of feeble-mindedness on the other. For the various grades between these, they also supply us with a series of standards by which the so-called normal children can be graded. But it is very necessary that we should realize that intelligence is only one side of child psychology. There are, for example, such powerful factors as the emotions, moral character, etc., which are of supreme importance in the mental make-up of an individual. The question what relation, if any, exists between the degree of intelligence and these other factors in the one individual is of considerable interest; also, what the effect on intelligence may be of the occurrence of a serious illness or some disability in child-life. These and similar problems will no doubt tend to be elucidated by a widespread application of intelligence tests and the careful compilation of results on a large scale. Up to now, certain definite points appear to be established:—

1. There is no sharp demarcation between grades of intelligence.

Amongst a miscellaneous group of children there is a gradual merging through all stages of intelligence, from high intelligence down to feeble-mindedness. The so-called 'normal' child easily forms the largest proportion, and composes the central bulk of the group. High intelligence forms the extreme at one end and feeble-mindedness at the other.

2. The occurrence of high intelligence is as frequent as that of extremely low intelligence.

3. There is no particular year in which individual mental variability is especially marked, a group of children six years old showing as much variation individually as does a similar group, age fourteen years.

4. As regards sex, it is found that below fourteen years girls are slightly more intelligent than boys, but after that age the advantage swings slightly over to boys.

5. Children from the higher social status are slightly above the normal intelligence, and those from the inferior slightly below it.

In the course of time, no doubt, the development of intelligence tests will proceed towards the direction of its application to adults. Their scope will then be considerably widened. They may possibly provide us with the much-needed guide for the selection of particular individuals for particular work or professions, as well as providing a definite indication that a certain individual is entirely unsuited for a certain employment or career. That such important decisions—which in young adults are not infrequently life decisions—are left largely to chance is a misfortune which doubtless has produced, and will continue to produce, dire consequences in many a life. From many aspects, therefore, the advance in the study of comparative intelligence will prove of the greatest practical utility. The progress which has already been made in the subject has established it on a permanent foundation. The superstructure remains to be built.

REFERENCES.

- ¹ TERMAN, LEWIS M., *The Measurement of Intelligence* (Stanford revision of the Binet-Simon Intelligence Scale). (Harrop, London, 1919.)
- ² BINET and SIMON, *A Method of Measuring the Development of Intelligence in Young Children*. (Chicago Medical Book Co., 1915.)
- ³ BINET and SIMON, *Mentally Defective Children*, translated by Dr. W. B. Drummond, with an Appendix containing the Binet-Simon tests of intelligence by Margaret Drummond, M.A. (Arnold, 1914.)