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THE BINET SCALE AND THE DIAGNOSIS OF FEEBLE-MINDEDNESS

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Perhaps all will admit that some of the discussions which have recently found their way into print regarding mental examination methods have tended to exaggerate the differences of opinion which obtain among the leading workers in this field. Disputes which become imbued with a personal tinge are always to be deplored, and particularly in a branch of scientific work where methods are still tentative and insecure. Such disputes are not edifying and are of doubtful service to the cause they represent. Especially does it seem pertinent to urge that the misuse of a particular method by irresponsible amateurs should not be charged either against the method itself or against the competent and cautious persons who, for want of something better, employ it.

It has seemed to the writer that some of the published criticisms of the Binet method have lacked something in spirit of fairness in that they have shown a tendency to make capital out of certain defects and inadequacies of the method which are as fully recognized by its qualified champions as by anyone else. In certain instances these criticisms have taken on a tone which is unnecessarily destructive and which occasionally suggests imputations and implications not overtly asserted. Contentious articles of this sort are misleading to the lay reader, and by magnifying the differences of opinion supposed to exist among the leaders they inevitably tend to create an unwarranted attitude of suspicion toward clinical psychology generally. From some of these articles the lay reader might very well make the following inferences: (1) that most of the psychologists who use the Binet scale believe it to be a perfect instrument of measurement; (2) that they believe its use in the diagnosis of feeble-mindedness renders unnecessary any consideration of medical, neurological, or sociological data concerning the subject; (3) that they regard the degree of intelligence, as determined by the scale, as the sole measure of the subject's fitness to be at large; (4) that they deliberately encourage persons without psychological training to undertake research with mental tests; (5) that the infallible criterion of feeble-mindedness, in the adult subject, is failure to pass the 12-year tests.

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It may well be that no one has deliberately intended so to misrepresent his fellow-workers; but whether intended or not, this is the opinion which the physician, the lawyer, and social worker are encouraged to entertain regarding psychologists who use the Binet tests.

Let us consider the above points in order:

(1) *Does the system of tests left us by Binet measure the intelligence with perfect accuracy?* It is safe to say that no psychologist in the United States or Europe believes that it does. Binet himself did not, nor do those who have had most to say in advocacy of the Binet method, including Meumann, Stern, Bobertag, Huey, Kuhlmann, Goddard, and the writer. All of the above persons, the late Dr. Huey excepted, have made investigations for the purpose of correcting some of the imperfections of the scale, but we have no reason to believe that a single one of these considers even his own revision as perfectly satisfactory.

Dr. Goddard has had most to say in praise of the scale, but it is reasonable to suppose that his frequent characterizations of it as "astonishingly accurate" have reference to the advance it makes over earlier methods of diagnosis. In this sense it is literally true that even the crude scale left us by Binet is a wonderfully effective instrument. Goddard's experience with the methods of diagnosis in vogue before the publication of the Binet scale doubtless laid a better basis for the appreciation of an improved method than anyone could possibly have without such experience.

The writer, too, has experiential reasons for appreciating the inventive genius of Binet. In 1904-1905 he spent from four to six hours per day for a good part of a year giving intelligence tests to a selected group of fourteen boys, and although he made a doctor's dissertation of his results he is frankly willing to admit that at the end of the year he knew less about the intellectual status and educational possibilities of these fourteen boys than he (or for that matter one of his senior students in clinical psychology) could now ascertain in fourteen hours by means of an improved Binet scale.

It is no reflection upon other workers to say that until very recently the Binet system of tests was the only ready means of making even an approximate estimate of the mental level of a subject. Many other good tests were floating around, but because they had not been standardized they were of very limited value. Those who have made most claim to the use of "other tests" doubtless find this practice a convenient means of inspiring in others a special confidence as to the completeness and correctness of their diagnoses, but to any one who

has given serious attention to the psychological interpretation of mental tests it is evident that many of the current "supplementary tests" have, in their present state of unstandardization, little value beyond this. Those who in the absence of comparative norms make serious claims for such supplementary tests simply exhibit a naive willingness to rely on subjective impressions.

By all means let us have more tests and more systems of tests. Let us standardize these so thoroughly that they will give accurate results, within the limits of possibilities. Let us especially have new scales worked out on the statistical basis suggested by Mr. Otis. After securing several systems of tests let us measure the accuracy of each against all the others and frankly accept the consequences. So much remains to do that it is questionable taste to wrangle over the little that has been done. Let us replace argument and accusation by a body of established fact. Meanwhile let us not disdain to use the best methods which may be available, even though they fall far short of the ideal.

(2) *Do psychologists who use the Binet tests countenance the failure to utilize medical, neurological, sociological, and other supplementary data?* Only one answer can be given to this question by any one who is acquainted with the psychological research which is being done with defectives in this country. The psychologist who has most championed the Binet method (Goddard) has, as every one knows, fostered important research in these allied fields. It is safe to say that no responsible person engaged in the study of the feeble-minded doubts the absolute necessity of co-ordinating these various lines of approach.

It is not to be denied, of course, that there are some differences of opinion as regards the relative amount of stress which should be placed upon the evidence from these different sources in the diagnosis of individual cases. The divergent practices here are natural results of the different purposes for which a diagnosis may be made. When the end in view is chiefly that of clearing up the etiology of a case the medical and neurological data inevitably come in for important consideration. When the diagnosis is made primarily for the sake of educational guidance the psychological aspects of the problem must be taken more seriously into account. The same is true when guidance is sought as to the social treatment the subject should receive.

It so happens that the thing most desired in the large majority of diagnoses is correct guidance as to educational or social treatment. The mental capacities are to be evaluated with the end in view of determin-

ing the subject's educational, social, and vocational possibilities. Although even here all the obtainable medical and neurological data should be utilized as a matter of course, it can hardly be denied that this aspect of the problem is in most cases essentially a psychological one. It is only in a minority of cases that the medical and neurological diagnosis would qualify considerably the pronouncement of the mental examination. It must further be admitted that in the large majority of cases of high grade feeble-mindedness the medical diagnosis is not even able to bring to light the physical basis of the defect. As regards the diagnosis of the intellectual level the following statement of Binet, made in 1905, is still valid:

"To sum up, we can utilize three methods for the diagnosis of the intellectual level among subnormals.

"1. The *psychological method*, which is almost always applicable and which is almost *certain* to reveal the signs of defect.

"2. The *pedagogical method*, which is very frequently applicable and which reveals *probable* signs of defect.

"3. The *medical method*, which is applicable only in a restricted number of cases and which reveals *possible* signs of defect."

As for the supplementary information called for in the usual clinical examination blanks, much of this is worthless. For some time the writer has been making a collection of such blanks. Not a few are so elaborate that many hours would be required to fill them, though in the average case not a fourth of the information called for could have any bearing on either the diagnosis or the prognosis. They are a survival from the pre-scientific period when individual psychology had not advanced beyond the crudely descriptive stage.

(3) *Do psychologists who defend the Binet method disregard the non-intellectual mental traits as co-determinants of a subject's social fitness or educational possibilities?* They do not. Critics of the Binet tests have no special or prior claim to credit for insisting on the importance of emotional, volitional, or moral traits as factors in determining social fitness. Over and over again, by Binet himself and by Meumann, Stern, Huey, Kuhlmann, and the writer, the necessity of taking account of the non-intellectual factors has been urged. Unfortunately, it is more difficult to show how this may be done than it is to see the need of doing it. Thus far little substantial progress has been made in the elaboration of methods for the quantitative evaluation of emotional and volitional traits in mental diagnosis. The problem indeed is beset with many difficulties, and it is these, no doubt, which account for the fact that no investigation of the feeble-minded, whether

by champion or critic of the Binet method, has more than incidentally touched upon such factors.

Here, again, the call is for research, not accusation. It is to be hoped that in the reasonably near future the ramifying and pervading influences of mill and emotion will be traced out and subjected to exact measurement: including the relation to intelligence of such traits as fear, anxiety, docility, suggestibility, stubbornness, pugnacity, pre-occupation with sex, persistence, ambition, love of approbation, interest-attitudes, cheerfulness, physical euphoria, emotional instability, and hysterical or psychasthenic complexes. In the problems of character-ology and temperament as related to intelligence and social fitness there is material for centuries of fascinating research. The writings of McDougall, Shand, Webb, Freud, Jung, Janet and Adolf Meyer are rich with suggestions for such a program, while recent developments in statistical methods as applied to mental processes have paved the way for a more scientific approach than was possible in the days of the French character-analysts.

It may not be amiss to point out that throughout his productive career Binet from time to time occupied himself with one or another of these problems, and that just before his untimely death he was turning to them with more serious intent. The reader is referred to several articles appearing in *L'Annee psychologique* in 1909, 1910, and 1911. There is reason to believe that had Binet lived, his services in this field might have equaled in importance that which he rendered to the study of feeble-mindedness and mental growth. Surely, progress will be more rapid if all of us will but emulate his example and devote our attention more diligently to the search for new problems and new modes of attack.

(4) *Do adherents of the Binet method hold that amateur Binet testers should be encouraged to attempt psychological diagnosis of the feeble-minded?* So many psychologists (chiefly those not in the clinical field) have taken their fling at amateur testers that one would suppose the followers of Binet had sinned most grievously in this respect. Their record, however, from Binet on down, is absolutely clear on this point. Even those who have gone farthest in encouraging the wider use of the Binet tests have asserted explicitly that only the trained psychologist should be permitted to make a real diagnosis.

To go further, however, and to demand that no one shall make use of intelligence tests who has not had several years of undergraduate and post-graduate training in the usual lines of academic psychology would be a serious and absurd mistake. As a matter of

fact, there is no argument in favor of limiting the use of intelligence tests to trained psychologists which does not apply equally well in the case of pedagogical tests like those of Courtis, Ayres, Thorndike, etc. These tests, fortunately for education, teachers are specifically urged to make use of. No one has sought to envelop them in tabus for the "protection of science" or for the personal advantage of the élite who have been initiated into their mysteries. When we take this common-sense attitude toward the Binet tests we shall find that they have a much wider field of usefulness than anyone has yet dared to suggest. The writer, for one, confidently looks forward to the time when all students in the better normal schools of the country will be taught how to use one or more systems of standardized intelligence tests; not for purposes of research or for accurate diagnosis, but in order to secure more accurate information regarding the mental capacities of their pupils than they could possibly obtain in any other way.

When we have in mind the use of the tests for research or actual diagnosis the case is vastly different, as all will agree. Psychological training practically equivalent to that required for the Ph. D. degree, including at least a year of instruction and laboratory practice in mental examination methods should be the minimum. A majority of those who are now at work in this field have of necessity acquired their specific equipment by practical experience after taking their advanced degree in other lines of psychological research. With the development of clinical technique, however, special instruction is certain to become more generally recognized as a *sine qua non* of fitness.

There are two factors in this connection which can not be too strongly emphasized: (1) That even extensive training and substantial accomplishment in fields of experimental psychology remote from clinical lines does not of itself constitute one an infallible critic of intelligence tests or of the results gained by their use; and (2) That still less does the possession of a medical degree imply any special fitness for psychological diagnosis and research. Both of these misapprehensions are widespread, and of the two the latter appears likely to have the more serious consequences. That positions in clinical psychology in public schools and in juvenile courts, reform schools, prisons, and homes for the feeble-minded should so often be entrusted to physicians who have no psychological training to speak of is most unfortunate. They are of course incomparably less fitted for such a position than is the college graduate who has had two years of laboratory work in psychology and who has taken his masters degree in some phase of mental testing. The solution is for psychologists and phy-

sicians to work side by side, each contributing what he can and each respecting the expertness of the other in his own field.

(5) *Do the responsible psychologists who use the Binet scale mechanically apply an automatic criterion in the diagnosis of feeble-mindedness?* This question has already been answered in what we have said regarding the general agreement as to the desirability of taking into account medical and other data. If any psychologist ever hoped to find such a simple standard as 12-year intelligence (or 75 I. Q., etc.), an infallible criterion of fitness to be at large, surely he has long since been disillusioned. The writer does not for a moment suppose that those who proposed this standard ever meant that it should be rigidly and mechanically applied.

The misunderstanding comes largely from the fact that the term feeble-mindedness is currently used in two very different senses. In one sense it refers to the possession of no more than a certain degree of mental (chiefly intellectual) capacity as measured by some objective scale. This is the psychological definition. As more commonly employed, the term feeble-minded has reference primarily to those who, because of inherent or early acquired mental weakness, can not get on in the world, who "can not compete on equal terms with their fellows," or "can not manage themselves or their affairs with ordinary prudence." This is the social criterion, which received definite formulation by the Royal College of Physicians, London.

These two criteria, the psychological and the social, can not be used interchangeably for the reason that ability to get on in the world depends upon many things besides absolute mental capacity, such as health, looks, bearing, muscular strength, inherited wealth sympathetic friends, economic and industrial conditions, the prevailing level of intelligence in those with whom the subject must compete, etc. The social criterion is attractive and plausible only so long as it remains unanalyzed. It is far too shifting and indefinite to serve as a working concept in science. Such an expression as "ability to compete on equal terms with one's fellows" is too vague to satisfy a person who thinks at all in quantitative terms. It means anything or nothing. Those of average mental endowment do not compete on equal terms with the superior, the superior do not compete on equal terms with the very superior, the slightly inferior are at a disadvantage in competition with the average, the very inferior with the inferior, and so on. Perhaps most of the borderline cases are able to get along after a fashion, but one could hardly claim that they can compete with a majority of their neighbors on anything like equal terms.

The expression "manage themselves or their affairs with ordinary prudence" is doubly vague; neither "ordinary" nor "affairs" having any definite or constant meaning. The "affairs" of a youth who inherits large properties and social position are hardly comparable in difficulty of management with the "affairs" of many another youth in a simpler social environment. "Ordinary prudence" varies according to the social group and may have a dozen different meanings within a radius of as many miles. The difficulty in "managing one's affairs" not only varies in the different strata of society at a given time; it also changes enormously from period to period in the economic and social evolution of a country. There have doubtless been social environments in which the imbecile could "manage" better than the moron of today. The social standard is ever becoming more exacting. A majority of morons are still tolerated at large and often not recognized for what they are. Tomorrow additional thousands of these will be under social restraint. Who would be so rash as to hazard a guess as to what the standard will be a hundred or a thousand years hence? By the social criterion the number of feeble-minded in a nation would vary with the price of food, the condition of the labor market, with the prospects of war or peace in a neighboring country, even with the psychological moods of Wall Street; for all of these conditions are capable of influencing enormously the number of those who become social incompetents, nuisances, or pests because the severity of competition in life is out of proportion to their mental capacities.

It is not necessary that the term feeble-mindedness, in the sense of social incompetence due to mental defect, should be abandoned. As a roughly descriptive term it has its value for practical purposes, provided we only bear in mind its shifting significance. For psychological purposes, however, it is necessary to employ a less variable concept. This is to be sought for in terms of mental status as determined by objective measuring scales giving units of unchanging or at least relatively constant values. A perfect scale, or system of scales, for this purpose would have to evaluate all kinds of mental traits, emotional and volitional as well as intellectual. Such a system of scales will not soon be available. The best we can do at present is to evaluate with moderate accuracy the degree of "general intelligence"; though we derive further aid in the fact that emotional and volitional defects are more or less correlated with the degree of intellectual defect. For the present, accordingly, we could agree to designate all of those as feeble-minded who test below a certain definite point on the intelligence scale. Perhaps a better term for these would be, *intellectually feeble*. We should then have *intellectually feeble* and

socially feeble as companion but not synonymous terms. It would be recognized that while the two groups are in large part identical they are not wholly so, the degree of identity being a variable depending upon economic and industrial conditions, local standards of social fitness, and many other factors. The diagnosis of *intellectual feebleness* would be absolute, that of *social feebleness* relative. Thus a high grade *intellectually feeble* individual living in a difficult social environment might very well receive the two-fold diagnosis: "*socially feeble* if he remains in his present environment, *socially normal* if he should enter the environment of the lower grade unskilled workers of a stated section of the country." The starting point of the diagnosis would always be the degree of *intellectual feebleness* as ascertained by scientific measurement. The remainder of the diagnosis, the question of *social feebleness*, would involve a rough and ready appraisal of the total effect of innumerable complex social, economic, physical, and psychological factors, no one of whose influences can be accurately weighed or measured.

The situation is in one respect analogous to that facing the physician who would arrive at a diagnosis and prognosis in a case of suspected tuberculosis. The physician begins by making a bacteriological examination of the sputum, taking the blood pressure, X-raying the lungs, making a urinalysis, recording the heart action, making a blood count, etc. By the use of scientific methods in these lines of inquiry he is able to piece together a reasonably exact picture of the patient's present condition. Thus far his task resembles the psychological diagnosis of intellectual feebleness.² His next task, that of arriving at a prognosis, is radically different, for, like the diagnosis of social feebleness, it involves the rough evaluation of many variables, no one of which is capable of exact measurement. Whether the tubercular patient is likely to recover or not will depend on the climate, weather conditions, and soil formation of his locality, on his economic status, on the habits of living which he has formed in early life, on his attitude of cheerfulness or despondency, on the prevalence of malaria in his community, etc. It is evident that the diagnosis of *social feebleness* is really a question of prognosis of just this type, particularly so when the subject is a young borderline case.

What degree of intellectual inferiority should be taken as constituting intellectual feebleness? This is, of course, purely a matter for arbitrary agreement. Among unselected individuals of a given race the distribution of intelligence seems to be characterized by uni-modality

2. With the exception, of course, that intellectual feebleness is a question of degree. Tuberculosis is a question of *presence or absence*.

and continuous variability, and to follow closely the normal probability curve. The standard arbitrarily fixed upon could be, for example, median 10-year, 11-year, or 12-year intelligence for adults of the race in question, or it could be a stated number of points on an absolute point scale. The suggestion of Pintner and Paterson is to designate as feeble-minded (intellectually feeble) those who test among the lowest one or two or three per cent. of the population. In dealing with adult subjects the per-cent.-of-population standard is not especially different from the year standard or point standard. It might be found, for example, that the two per cent. standard is identical with the 11 year standard (Binet) or with the 75 point standard (Yerkes-Bridges). In the case of immature subjects, also, it might be found that the two per cent. standard for unselected children by the chronological age of 8 years is identical with the 6-year mental-level standard (.75 I. Q.) for these same children. It is merely a question of statistical convenience, and in this respect the standard proposed by Pintner and Paterson offers certain advantages.

It has also one serious statistical difficulty; viz., that of locating the line which separates the lowest one or two or three per cent. of adults from those above. The scale would first have to be standardized by testing a reasonably large number of *unselected* adults. This would be a very difficult, if not impossible, task. In the first place, not all of the adults whom we wished to test would consent to serve as subjects. In the second place, we could not be sure that a given community was composed of an unselected adult population. In most parts of America we could be sure that the adult population was very much selected. That of San Francisco, for example, is made up largely of laborers, skilled and unskilled, the business and professional classes living chiefly across the Bay in Oakland and Berkeley. Los Angeles has drawn heavily of the middle and upper intellectual classes from all over the country. Rural districts and small towns the country over would give a doubtful basis for standardization, because of selection which could be demonstrated to have occurred but which could not be measured. This difficulty would of course hold to a certain extent in trying to find the lowest one or two or three per cent. of the children of a given age; for although nearly all the children up to fourteen or fifteen years of age in a given community could be tested, the quality of their intellectual performances in the tests would be largely determined by the selection which had occurred among their parents. The intelligence of children is known to be highly correlated with the intelligence of parents. As to whether the line should be drawn so as to include one or two or three per cent. of the population in the class *intellectually feeble* is a matter

of indifference as far as theoretical considerations are concerned. It could be drawn anywhere. Practically, however, it will be found advantageous to set the standard of intellectual feebleness not too far removed from the popular and prevailing standard of social feebleness. On this basis the three per cent. standard would seem to be a little too high; perhaps two per cent. would be preferable. Even this is doubtless higher than the popular standard for social feebleness, but a discrepancy in this direction might prove an effective means of raising the popular standard for judging social fitness.

However, because of the above-mentioned difficulty in finding unselected adults to test, it will long be necessary to employ some other standard for adults than that proposed by Pintner and Paterson. There is no reason why we should not continue to use for adults a mental age standard of intellectual feebleness, bearing in mind that this term is not synonymous with social feebleness.

The writer would propose, as a criterion of intellectual feebleness in adults, intelligence below 11 years as determined by the Stanford revision of the Binet scale. This would probably include in the class of intellectually feeble, as defined, practically all who are generally recognized as socially feeble by the popular standards. It would also include a fairly large number who, because of easy environment or because of the possession of favorable endowment along non-intellectual lines, could hardly be classed as socially incompetent. It is the writer's conviction that the standard can not be placed higher without including among the intellectually feeble too many who could hardly be classed, by any reasonable standard, as socially feeble. Practically it would be a still more serious mistake to go too far in the opposite direction, for one of the desirable ends of psychological work with abnormals is to raise the popular standard as to what constitutes feeble-mindedness. This standard at present is lamentably low. To adopt Witmer's criterion and to classify as feeble-minded only those who are "industrially incapable of earning even a modest livelihood" would tend to keep it too low. The writer knows feeble-minded persons of the imbecile grade who are nevertheless earning a livelihood. One of these attended school until he was 18 years of age and never passed beyond the second reader, yet he is constantly employed at some form of low-grade unskilled labor. His intelligence level is approximately 8-years. He is recognized by everyone as feeble-minded, but thanks to his muscular strength and willingness to do what he is told he is able to earn a livelihood. Such cases are by no means rare.

If we agree to designate as intellectually feeble those adults who

test below 11 by the Stanford revision, it is interesting to see what showing is made by different social and industrial classes. Tests which the writer made of 32 high school pupils gave only one mental age below 14 years ("inferior adult" level). Of 30 business men of little schooling, who were tested by Mr. Knollin, only 4 tested below 14 years. One of these fell almost to 12 years, one at 13, the other two but slightly below 14. Of 154 "migrating unemployed" men tested by Mr. Knollin, 13 tested below 11 years, 29 below 12 years, 46 below 13 years, and 73 (or nearly half) below 14 years. Of 82 street car conductors tested by Mr. Waugh, one fell below 11 years, 4 below 12 years, 19 below 13 years, and 38 below 14 years. Mr. Waugh's 61 sales girls in a large department store made about the same showing as the street car motormen and conductors. On the other hand, not one of 7 railroad engineers (engine drivers) fell below 14 years (inferior adult), while 4 department store "buyers" all test between "average adult" and "superior adult."

It is evident from the above data that adult subjects who test much below the 11-year level by this scale are not likely to be very competent in the social or industrial sense. The data of Knollin and Waugh, which will be published in full elsewhere, indicates that those who test just below 11 sometimes succeeded moderately well at strictly unskilled labor, but rarely at labor which could be classed as semi-skilled.⁴ The data of Williams also show that adults of this grade of intelligence are many times more likely to come into conflict with the law than is the case with those who test in the neighborhood of "average adult."

But instead of indulging in arguments and speculation based upon scanty evidence at hand the writer would urge the desirability of gathering further data of this kind upon thousands of individuals in each of many different vocations. When this has been done we shall be in position to define the lowest limits of intelligence which are compatible with success in the different walks of life. Furthermore, by re-testing the same children each year up to the age of 16 or 18 years we can secure the data which will make it possible to forecast, with a reasonable degree of accuracy, whether a given child of any age will ultimately surpass the standard which we have arbitrarily set as delimiting intellectual feebleness in adults.

Merely to classify an individual as intellectually feeble or normal, is, however, not sufficient. Several classificatory groups are necessary to designate various levels more definitely. The writer would suggest

³In this Journal, Vol. VII, No. 1.

⁴The street car motorman who tested near the 10-year level had a long record of inefficiency and had recently been laid off because of a serious accident in which he had run over a man.

the following seven-fold classification: *intellectually feeble, borderline, inferior, average, superior, very superior, select*. These groups could be delimited in terms of intelligence quotient or in terms of scores equalled or exceeded by stated per cents of unselected children. If the intelligence quotient is used the following limits are suggested:

Int. feeble	Borderline	Interior, Average	Superior	Very Sup'r	"Select"	
70 or below	71-80	81-90	91-110	111-120	121-130	Above 130

Going further we could divide the "select" group into "select," "very select," and "genius" just as we have already named and defined the three grades of mental deficiency. We might agree, for example, to define these three grades as follows:

"Select"	"Very Select"	"Genius"
131-140	141-150	Over 150

Of course the question as to the constancy of the intelligence quotient is here involved, and before this question can be answered with assurance a vast amount of research will be necessary. The writer has elsewhere presented some data which suggest that the I. Q., as determined by the Stanford-Binet scale, remains approximately constant for the ages between 5 and 13 or 14.⁵ Additional results from 125 re-tests, soon to be published, point in the same direction. Stern's data argue for the constancy of the I. Q. for at least the ages 7 to 12.⁶ However, such constancy presupposes an accurate scale. It is known that with unselected American children the Binet 1908 series yields a mental age which is not far from one year too high at the 5 or 6 years level, and one which is not far from 1½ to 2 years too low at the 13 year level.⁷ The Stanford revision, which attempts to correct these faults, has given but slight variation of I. Q. in re-tests at varying intervals of one to five years, as far as the age of 14. The writer is convinced that the inaccuracy of the original scale and its earlier revisions has led Stern, Kuhlmann, and Pinter and Paterson to overestimate the fall of the I. Q. with increase in age.

Even should the I. Q. later be shown not to remain absolutely constant, it is at least evident that to define feeble-mindedness in terms of a given number of years of retardation, using the same standard at all ages, is unwarranted and grossly misleading. To require a year or two more of retardation with older than with younger children, as a

⁵Journal of Psycho-Asthenics, December, 1916.

⁶W. Stern: Der Intelligenzquotient als Mass der kindlichen Intelligenz, insbesondere der internormalen. Zeitschr. f. Angewandte Psychologie, Jan. 1916, 1-18.

⁷Wallin's apparently normal farmers who tested at from 10 to 11 by the Goddard revision would undoubtedly have shown a mental level of 12 to 14 by a corrected scale.

criterion of feeble-mindedness, mends matters a little but is still unnecessarily crude.

Perhaps enough has been said to show that the difficulties encountered in the diagnosis of feeble-mindedness, and particularly those which are involved in the classification of borderline cases, are due largely to the nature of the phenomena with which we deal. They are not artificial products of the Binet age-grade method of measuring intelligence. They reappear in the same form whatever scale is employed. They have not been disposed of by the Yerkes-Bridges point scale, nor will they be by any other scale which can be devised. New scales are indeed greatly to be desired, but an even more pressing practical need is for reliable comparative norms based upon the application of the revised Binet tests with thousands of individuals of various social groups.