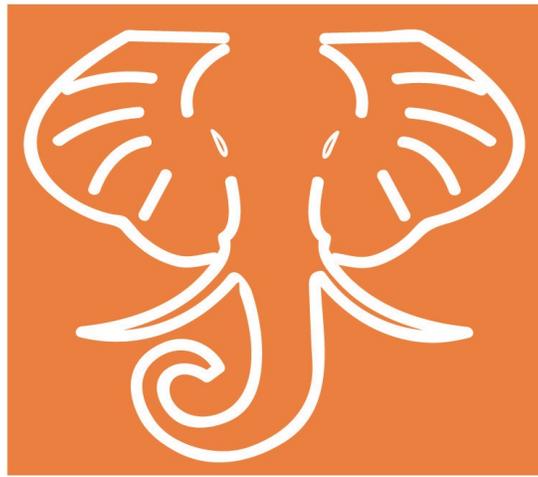


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University of Texas Bulletin

No. 1713: March 1, 1917

Mental Aspects of Delinquency

BY

TRUMAN LEE KELLEY



Published by the University six times a month and entered as
second-class mail matter at the postoffice at

AUSTIN, TEXAS

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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

Mirabeau B. Lamar

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The Mental Aspects of Delinquency

**DEDICATED TO
THE DELINQUENT BOYS
OF TEXAS**

PREFACE

This work is intended for two classes of readers; the psychologist who is interested in the mental examination of delinquents, and the man or woman who is concerned with the moral and ethical problem involved but who is not versed in mental tests and statistics. The latter need make little attempt to follow the explanation of certain of the tests and of the norms used in making comparisons. He would do well to merely glance at the paragraph headings of Chapter II, skip Chapter III entire and read the balance of the work, not failing to note the annotated bibliography, skipping over a few pages dealing with technical matters. There will be little loss in coherence by this method of reading.

Thruout the work authorities cited have been designated by a number, which refers to the annotated bibliography where exact references are given.

The writer is greatly indebted to A. W. Eddins, Superintendent of the Texas State Juvenile Training School at the time of the investigation, and to his co-workers, for their assistance and hearty co-operation; to L. W. Sackett for his general supervision of the Binet testing; and to C. T. Gray, J. H. Stoutemeyer, D. L. Hoopingarner, N. L. Hoopingarner, W. P. Webb, and W. H. Butler, for their invaluable assistance in making the examinations and giving the tests.

T. L. K.

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CHAPTER I. THE PROBLEM

There is a growing realization that the social agencies represented by the policeman, the judge of the criminal court, and the reformatory have not satisfactorily handled the problem of juvenile delinquency. The apprehension, trial, and punishment of the individual has seldom been effective in making him a useful and law-abiding citizen, or in protecting society from his future depredations. There are too many "backsliders," if such they can be called; for it is an open question if they ever were reformed. "Gatesville Graduate" may some day come to mean a boy of Texas whose past history is forgotten because of his present manly and sterling qualities; but the term is not so used at present. Much has already been accomplished in the creation of the position of probation officer, in the establishment of juvenile courts, state training schools—not penal institutions, but schools—, and, occasionally, in systems for the careful and appropriate placing of delinquent boys and girls. But the improved procedure, at best, is only in its infancy. The problem of the delinquent youth has not been solved. His appropriate education, reformation, and subsequent location is still a moot question in the minds of the wisest educators. His apprehension and probation puzzle the most humane and enlightened judge. He is completely a problem to his family, to his teacher and generally to himself.

Whether the problem be approached from the point of view of the educator, the judge, the probation officer, the parent or the vocational adviser, the more accurate and complete the understanding of the physical being, social outlook, and the intellectual capacities of the delinquent youth, the more just and efficient will be his handling.

Such understanding is desirable in any case, but there are certain phases peculiar to the different points of view. From the standpoint of the large social unit, the State, the question of self-protection is of major importance. Hence the State is especially concerned with subjecting the apprehended miscreant to an educative process which will result in his coming forth a

man and taking his place as a worthy citizen. It is also the peculiar duty of the State to consider the broader aspects of the question and endeavor to protect future generations from the curse of the progeny of those boys and girls who are delinquent because of hereditary taint. These three concerns of the State may be designated as those of protection, restoration, and insurance.

The smaller unit, the town or city, is interested in the same phases of delinquency, but more particularly in the immediate endeavor to prevent misdemeanors; in the apprehension of petty offenders; the reformation of milder cases; co-operation of all the local organizations and individuals dealing with children, such as the juvenile court, the school and public playground supervisor; and, finally, in co-operation with the State in its handling of the more serious problems.

The interests, duties, and responsibilities that rest upon parents in the proper rearing of their children are coextensive with the youthful activities of the boy and girl. To list them would be to enumerate the virtues of parenthood. It is easier to tabulate the obligations of the family than to conceive of a procedure which will insure their performance, but if there is lacking a certain modicum of parental interest and sense of responsibility in the education of the wayward child and in co-operation with the local authorities, the negligence becomes an infringement on legal requirement.

More intimate than any of these problems are those that confront the offender himself. He neither understands himself, the social demands, nor how to adjust himself to them; and he is entirely incalpable of wisely choosing an environment and vocation for himself.

These problems of delinquency are more numerous and extended than the present study attempts to answer.

It is herein attempted to obtain a picture of the physical and mental life of the typical delinquent in so far as it may be discovered that there is a typical delinquent.

The knowledge of the present nature of the youth is not sufficient for the most reliable diagnosis of his fortes and weaknesses and determination of educational or vocational environ-

ment in which he should be placed. Such information, although of major importance, should be supplemented by etiological information. This last very important phase of the question is but inadequately touched upon in this study. The problems proposed are attacked, first, by means of a detailed original study of the boys in the State Juvenile Training School at Gatesville, and second, by a recital of the findings of other investigators.

The Gatesville boy differs essentially from other boys, in that he has been legally adjudged guilty of repeated petty misdemeanors. He is not one of a gang who stole watermelons and was caught only because he could not run as fast as the rest, as many misinformed, sympathetic men and women would have us believe. Very decidedly he is not "just like other boys, except that they got away and he didn't." The one-time offender at Gatesville is found only in case the offense has been very serious—manslaughter, rape and the like—or in case the home environment of the boy was found to be so utterly vicious that a wise and sympathetic judge sent the boy to Gatesville for a first offense, in order to give him a chance. Generally first-offense cases are the local problems of the judge of the juvenile court, the probation officer, and the school principal. The "repeater" who has betrayed the trust of the judge time and again reaches Gatesville.

We have, then, a select group, and the problem is to determine in what respect, other than the one upon which selected, they show signs of exceptionality. To know that certain physical or mental conditions are highly correlated with delinquency would be of value in leading to an understanding of the causes of waywardness, and the means of cure. The following chapters are devoted to this problem. What is the purely physical being of the delinquent boy, what is his psychomotor mechanism, his sensory equipment, his intellectual capacity, his environmental history, and what is required for his appropriate education?

CHAPTER II. TESTS AND MEASUREMENTS

Physical Tests and Measurements.

(The measure used in the group summaries is indicated after each item.)

Height: In millimeters, with shoes on. Heels of shoes about 15 mm. The mean height is the group measure used.

Weight: In Pounds, with clothes on. Weight of clothes about 6 pounds. Mean weight used.

Vital Capacity: In cubic inches. Median instead of mean used, because the mentally low grade cases who could not be taught to blow correctly would otherwise too greatly influence the record.

Vital Index: In cubic inches, divided by pounds weight, with clothes on. Median used, for same reason as above.

Circumference of head in millimeters: Difference in amount of hair makes this a less reliable measure than the breadth and length of head measures. Mean used.

Breadth of Head: In millimeters. Mean used.

Length of Head: In millimeters. Mean used.

Cephalic Index:

Number of scars on cranium: Small cicatrices were at times undoubtedly undiscovered due to the mass of hair; but considerable care was taken in the examination. Median used instead of mean, for distribution is very skew, with pronounced mode at zero.

Pubertal Development: Crampton's criteria of pubescence (22) adopted. A full covering of pigmented hair in the pubic region indicating post-pubescence, is designated in the tables by the numeral 3. A partial covering of pigmented hair, indicating pubescence, is designated by 2; while nothing more than a lanuginous unpigmented growth, indicating pre-pubescence, is designated by 1. Notations 1+, 2—, 2+, and 3— are also used to give a finer developmental scale—1+ meaning a heavy lanuginous unpigmented growth, etc. The entire distribution is given in the summaries, as there are at most but seven degrees of physiological development designated. Median and also the

mean pubertal development is given for each age. The mean is a quite unsatisfactory measure, as the increase in mean values from year to year does not at all represent the rate of pubertal development in the individual; but it seems to be about the only way to compare the group with the normal group. Comparisons for ages $13\frac{1}{2}$ and $14\frac{1}{2}$ may be considered the most reliable.

Strength of Vision: Right and left eyes tested separately by means of a Snellen Chart. The denominators only of the strength of vision fractions are recorded, the numerators being 20 in every case. Children who are unable to read were tested by asking them to point to letters similar to those indicated by the experimenter standing by the chart. If the record is, for example, 28, it means that the individual missed about 2 letters in the row normally read at 30 feet and got all in the row normally read at 25 feet, it being the examiner's estimate that if there were a row for 28 feet, it would be just at the limit of the boy's visual capacity to read it entire, or lacking one letter (as recommended by Whipple.) The per cents having vision of 20/30 and below, 20/40 and below, 20/50 and below, 20/70 and below, and of 20/200 and below are given in the group summaries. It should be noted that each entry includes all cases falling in the lower entries plus, generally, a few others.

Astigmatism: Both eyes tested at once by means of the same chart. A (0) in the record represents the presence of astigmatism, and a (1) indicates lack of such evidence. A (?) indicates its probable presence. The chart was held in three positions and evidence of astigmatism was considered conclusive if all three trials showed astigmatism in the same, or practically the same, plane. If two of these trials agreed but the third differed, a (?) has been placed in the record. These question marks are given the value of $\frac{1}{2}$ in calculating the percentages having astigmatism.

Vision: In the column headed "Vision" there is an attempt to sum up all the facts discovered about the eyes. A (0) in this column is used in instances where it was probable that a more careful examination would show the need of glasses. The judgment was based upon the presence and degree of astigma-

tism, the strength of vision, the difference in strength between the two eyes and incidental facts that were elicited in response to questions. As this recommendation was turned over to the Superintendent of the Institution for his use, and as the amount of eye defect was so great that it was feared it would appall, rather than stimulate, the authorities, the writer made a very conservative estimate. Percentage needing further examination recorded in the summaries.

Hearing: A whisper test, followed in case of failure by a watch test, was made, and a score of (0) or (1) recorded for each individual, the former indicating the need of further examination. This test was conducted under unfavorable circumstances, and only those who were quite defective were discovered. The percentages needing further examination is recorded.

Nose and Throat: The teeth, palate and throat were examined hastily, the chief effort being to discover whether the child had difficulty in breathing through his nose. One nostril at a time was closed and the boy was told to breathe through the other. If the labor of breathing was marked, a (0) was entered, indicating that further examination was needed, and the percentage of such is recorded in the summaries.

Psycho-motor Tests.

Strength of Grip: Right hand and left hand tested separately by means of a Smedley adjustable dynamometer. After testing about one-half of the white and Mexican boys, it was discovered that the dynamometer was registering too low. It is unknown how long this condition had held, but at the time of the discovery, there was an error of a little over a kilogram. It was estimated that one kilogram should be added to the recorded records of the white and Mexican boys to obtain the most reliable estimate of the strength of grip of the boys. This has accordingly been done before comparisons have been made. The mean is used as the measure of central tendency.

Handedness: Record is made as to whether the boys were right-handed or left-handed. The per cent. of left-handedness for each group is recorded.

Tapping: A tapping board, with electric counter, was the

means of determining the speed of tapping for thirty seconds. With taps in which the movement is rapid at the point of contact with the board and slow at the other end of the stroke, some of the taps may be unrecorded. Such cases were remedied by suggesting a different type of tapping. The mean is used as a measure of central tendency.

Mental Functions

School Grade: A school, graded according to the ordinary plan is conducted in the institution, except that but half of the day is devoted to school work, the other half, for all ages, being spent in manual labor. Before admission to the institution, the boys may have been in a higher, the same, or a lower grade, but the Training School classification is based upon his efficiency there, and is little influenced by his past record. It is probably more accurate than the ordinary public school classification, as advancement is little affected by age—eight, sixteen, and twenty year old boys all being found in the same grade. The mean grade is given for each age group.

Binet Age: Goddard's 1911 Revision used, the tests for age 15 and adults being omitted on account of their admitted unreliability. Since there is an arbitrary upper limit of 12 years, mental groups in the neighborhood of 12 will show skew distributions. The mean is not a satisfactory measure in such case, so that the median has been used. In the giving of this test, it was aimed to follow Goddard's instructions upon all doubtful points.

Constructive Ability Tests: Kelley's Constructive Ability Test (71), was given to as many of the white and Mexican boys as time permitted. The record for the test includes, (a) a statement of purpose; (b) a grade for dominance of purpose; (c) a grade for symmetry (the latter two grades are on a scale of 5, 5 meaning "excellent," 4 "fair," 3 "average," 2 "poor," 1 "very poor," and 0 "no purpose" (or symmetry) whatever; (d) a grade of B or P, indicating whether the interest of the child was in constructive building or in mere playing with the blocks; and (e) a grade for merit of the structure built. The grades for dominance of purpose and symmetry are matters

based on the opinion of the examiner only, and have value only in showing the relative distribution of the boys examined. The grade for merit was obtained as indicated in the article referred to, except that the structures built were photographed and the grade given later by an examination of the photographs instead of being given at the immediate time of building. Due to lack of complete understanding between the writer, the one who gave the test, and the one who took the photographs, a number of structures of very low merit were not photographed, and are therefore, not graded. Where this is known to be the case, a (‡) has been placed in the record, and in the calculation of medians and quartiles, it is considered to be a score in the lower quartile. In case the individual record, where the photograph was lacking, did not make it absolutely certain that the structure was of practically zero merit, the record is omitted altogether in the calculation of medians and quartiles, thus probably making the scores slightly too high, as not all the structures of very low merit are recorded. The merit score only, it being the only one standardized, is used in the calculation of medians.

Completion Test: The Completion Test used was a modification of one of the earliest tests devised by Trabue. It is herewith given in full:

Name..... Time started.....
Age Grade..... Time finished.....

Write words in the empty spaces to make the whole sentence sound sensible and right.

1. See.....man and the little boy.
2. We like good boys.....girls.
3. She.....if she will.
4. Here is a man who.....do it.
5. The bird.....a song every morning.
6. The stars and the.....will shine tonight.
7. Good boys.....kind.....their sisters.
8. The wind.....the dust into our eyes.

9. The best.....to sleep is at night.
10. It is good to hear.....voice.....friend.
11. During the.....weather the boys play in the shade.
12. The kind lady.....the poor man a dollar.
13. The little.....and his dog.....running a race.
14. The girl fell.....her head.
15. A baby has very.....toes.
16. The rude child does not.....many friends.
17. The boy will.....his hand if.....plays with fire.
18. Boys must.....be rude to.....mothers.
19. The stars.....brightly at.....
20. The child.....the river.....was drowned.
21. Boys who play.....mud get their hands.....
22. The poor baby.....as if it were.....sick.
23. When the.....grows older he.....be a man.
24. The.....plays.....her dolls all day.
25. The.....rises.....the morning and.....at night.
26. The boy who.....hard.....do well.
27. The poor little.....has.....nothing to.....; he is hungry.
28.weather usually.....a good effect.....one's spirits.
29. To.....friends is always.....the.....it takes.
30. *There*.....are times in the *life*...of almost *all*.....
of us when we *wish*.....for a long life.
31. Men are *much* more able to do *hard* work *than* women.
32. It is very.....to become.....acquainted.....
persons who.....timid.
33. A shelter.....the weather is.....appreciated on a
.....day.
34. The best advice.....usually.....obtained.....one's parents.
35. A home is.....merely a place.....one.....live comfortably.
36. It is a.....task to be kind to every beggar.....
.....for money.
37. One's real.....usually appears.....often in his....
than in his speech.

38.things are.....satisfying to an ordinary
.....than congenial friends.
39. The sun is so.....that one can not.....
directlycausing great discomfort to the eyes.
40. Brothers and sisters.....always.....to help....
other and should.....quarrel.
41. Sometimes.....friends would really.....us more
by doing.....than by.....to assist us.
42. One can.....much better.....when he is.....
worried.....other matters.
43. Many persons.....before they think, and.....do
not.....at all; they only talk.
44. When two persons.....about.....which neither
understands, they.....almost..... to disagree.
45. If a person injures one by.....without having intended
any....., one should.....insulted.
46. It is very annoying to.....tooth-ache,often
comes at the most.....time imaginable.
47. Doesn't it.....strange that.....people should show
so much.....and soexcitement, when
a sudden loud.....is heard?
48. When one feels drowsy and....., it.....happens that
he is.....to fix his attention very successfully
.....anything.
49. Good company.....it a great deal.....for an ordi-
nary man to enjoy a.....from work.
50. Children should.....that after all nobody is.....to
care much more.....their success than.....
parents.
51. If people.....spend their..... andmore
carefully, they could probably save.....than.....
usually do.
52. To.....many things.....ever finishing any of
them ahabit.
53. The knowledge of..... use fire is.....of.....
important things known by...but unknown....animals.
54. One.....be very careful in.....advice to unknown
persons, for one can.....tell how.....a stranger
may.....one's advice.

- 55 One ought to.....great care to.....the right.....
of..... for one who.....bad habits.....
it.....to get away from them.
56.that are.....to one by an.....friend
should be pardoned.....readily than injuries done
by one.....is not angry.

Each exercise was marked either right or wrong, and the sum of the rights for each individual was obtained. This was then expressed as a completion test mental age based upon the median accomplishments of some 700 public school children of different ages. The standards are derived from the records of an approximately equal number of boys and girls. As the girls did slightly better than the boys, a little less than one-fifth of a year should be deducted from the norms when comparison is made with the records of boys only. The scoring of all the papers was under the supervision of the writer, and the same standards of correctness used throughout, making comparisons possible. The procedure of standardization is not here given, as the more complete work of Trabue (130), now in print, makes the test per se unimportant. As a number of the scores were above the median adult score and therefore cannot be expressed as mental ages, the median is used as the group measure.

The Binet test, Constructive Ability Test, and Completion Test scores have each been expressed in terms of a mental age and averaged for each individual to give a single developmental age, designated D. A.

Occasionally more or less arbitrary assignments of mental ages had to be resorted to in averaging some of the very poor and very good records that were made upon these three tests. These are explained in detail in the succeeding section dealing with norms for the various tests.

CHAPTER III. NORMS USED

The norms for height, weight, vital capacity, grip of right and left hands, and tapping, are from Smedley; per cent of left-handedness from Ernst, circumference of head from MacDonald, and the other head measurements from West, all as given by Whipple (138). The vital index has been calculated by dividing Smedley's vital capacity norms by his weight norms, after expressing them in cubic inches and pounds respectively. The values of the vital index given by Kotelmann, as quoted by Whipple, supposedly the quotents of cubic centimeters divided by kilograms, are so different from the median values obtained from normal American children as to suggest an error in the statement of the units used. At any rate, it is quite out of the question to use them for standards of comparison with the American youth. The norms for pubertal development are calculated from the chart given by Baldwin (95). It contains the distribution of pre-pubescents, pubescents, and post-pubescents for each age from 9 to 18, as found by Baldwin and Pennington in the examination of 1317 country boys, and as found by Burdick in the examination of 3600 city boys, using Crampton's criteria of pubertal development. The percentages in these three groups indicated in the graphs representing Baldwin and Pennington's findings for ages 10, 11, 13.5, and 15, are evidently in error, as they do not add up to 100. What seem to be reasonable changes were made in the percentages for these ages, and the average pubertal development for each age calculated, calling pre-pubescence 1, pubescence 2, and post-pubescence 3, resulting as follows:

Age	Baldwin & Pennington, 1317 Country Boys	Burdick, 3600 City Boys	Average	Median
9.5			1.00	1
10.5	1.03	1.01	1.02	1
11.5	1.18	1.02	1.10	1
12.5	1.47	1.20	1.34	1
13.5	1.75	1.47	1.61	1
14.5	2.56	2.14	2.35	2.5
15.5	2.88	2.52	2.70	3
16.5	3.00	2.67	2.84	3
17.5	3.00	2.93	2.96	3
18.5	3.00	3.00	3.00	3

The average for the city and country boys has been used as the standard for comparison. It should be borne in mind that whatever retardation is found for ages 13-15 would be in the neighborhood of 5 months more if measured by the country boy standard, and 5 months less if measured by that of the city boy than as measured from the average. The Gatesville boys come from both city and country communities, though most of them are city urchins. The fact that they are Southern boys may influence the age of pubertal development, but it has generally been that that fact operates to hasten rather than retard such development.

Strength of Vision: The method of scoring used permits of a finer grading than that simply into groups, 20/20, 20/25, 20/30, etc., but the writer is unaware of any norms established upon the same basis, nor of norms for the comparison of the amounts of astigmatism.

Hearing: It is impossible to accurately compare the findings with the percentages of defect as found by Smedley (115), but probably all cases discovered were as defective as those whom he designates as 4 or more points below normal in both ears. Smedley finds when testing with the Seashore audiometer that the percentages of those four or more points below normal in both ears, are as follow:

Age	Per cent below normal
10	7
11	7
12	6
13	7
14	6
15	6
16	8
17	8
18	4

Nose and Throat: No norms are available.

School Grade: As all the boys at the institution attended school one-half of each day, and as the classification into grades was the same as that of the ordinary public school, it is possible to compare the school position of these boys with that of normal boys of the same age. For the normal group, the age-grade dis-

tribution of Salt Lake City children (140) is taken as a standard. E. D. Jennings, in a survey as yet unpublished, found that the average retardation of the Salt Lake City school children, as given by Cubberley, was a little greater than that of Dallas, a little less than that of San Antonio and about equal to that of Austin. It is accordingly a fairer standard to use than one drawn from the far North or East. Considering grade 2a to run from grade 1.5 to 2.0, grade 2b from grade 2.0 to 2.5, etc., it is found from the Salt Lake City age-grade distribution that the median 8½-year-old is in attendance upon grade 2.23, etc., as shown herewith.

Age	Median Grade
7.5	1.31
8.5	2.23
9.5	3.12
10.5	3.97
11.5	4.70
12.5	5.57
13.5	6.49
14.5	7.27
15.5	8.19
16.5	9.23
17.5	10.21
18.5	11.21

It will be noticed that the "normal," i. e., the average, child accomplishes the six grades from grade 2 to grade 8 in seven years. Retardation of the Juvenile Training School boy is calculated in terms of years as in the case of all the other measures and not in terms of grades; e. g., a 11.5 year old child who is in grade 3.97 (i. e., not quite to the middle of grade 4) is retarded .73 of a grade but 1.00 year. The norms show that from age 15 on, a grade seems to be made each year. This, however, is probably not the case, but only appears so, due to the elimination of the duller (older) pupils. The grade averages, of course, are averages only for those who attend school, and these undoubtedly constitute for ages from 15 on, a select group. It should, therefore, be kept in mind that the Juvenile Training School boy is being compared to children of his own age who are attending school, and not to children of his own

age in general. The same observation should be made in interpreting retardation, when judged by the other mental tests, since the norms established have in general been norms for school children. Also, all of Smedley's norms are those for school children, and it may be that there are differences in the physical development of the school and general population groups.

Binet Test: Binet ages, contrary to the usual procedure, have not been used as true mental ages. As shown by Thorndike (129), they are not equal to true mental age; and, secondly, the test as given (questions above age group 12 not included) introduces a factor which further tends to result in too low a Binet age for mentality in the neighborhood of 12 and above. Thorndike's corrections to Binet ages are in the second column. These adjustments, based upon published results appearing before 1914, are practically equally applicable to the 1908 and 1911 revisions of the Binet scale as shown by Rogers and McIntire (108).

Binet Age	Thorndike Correction	Further Correction Due to Omission of Test Questions Above Age 12	Resulting Equivalent Developmental Age for Each Binet Age
7.0	-.2		6.8
7.2	-.2		7.0
7.4	-.15		7.25
7.6	-.1		7.5
7.8	-.05		7.75
8.0	.0		8.0
8.2	.0		8.2
8.4	.0		8.4
8.6	.0		8.6
8.8	.1		8.9
9.0	.1		9.1
9.2	.1		9.3
9.4	.1		9.5
9.6	.15		9.75
9.8	.2		10.0
10.0	.25		10.25
10.2	.3		10.5
10.4	.35		10.75
10.6	.4		11.0
10.8	.8		11.6
11.0	1.2	.2	12.4

Binet Age	Thorndike Correction	Further Correction Due to Omission of Test Questions Above Age 12	Resulting Equivalent Developmental Age for Each Binet Age
11.2	1.4	.4	13.0
11.4	1.6	.8	13.8
11.6	1.8	1.2	14.6
11.8	2.0	2.0	15.8
12.0			Developmental Age =Chronological Age if over 16; otherwise it equals 16.

Since in the present testing there was no opportunity to compensate for failures in Binet group 11 or 12 by successes in group 15 or adult, the Thorndike corrections are not sufficient, being based upon results where, in general, tests for the advanced years were given. The amount of this additional correction could be determined experimentally by examining a large number of normal children, but it has here been estimated by the writer, as shown in column 3. A perfect score, i. e., the passing of all the tests and scoring a Binet age 12, cannot be evidence of retardation, no matter what the age of the individual; so that the chronological age is assigned to individuals making that score, even tho their age lies up to 20 or 21. The use of the Stanford revision of the Binet Scale, which is standardized for these higher ages, would be a more accurate means of procedure, but it was not available at the time the testing was done.

Constructive Ability Test: This test (71) consists of a certain definite amount of building block material which is given to the subject with the instruction to "build the best thing he can, and whatever he wants to." The individual is graded for the persistence with which he adheres to his self-imposed task, for the symmetry of his product, for the nature of his interest, and for the general merit of the structure built. This last grade is secured by comparing the structure with carefully graded stereoscopic photographs of a large number of structures of different types. The merit score is the only one in this test worked up into averages, as it is the only one upon an objective basis. Merit scores are equivalent to mental ages as follows:

Merit in Constructive Ability Test Complete failure, designated by a ‡ in the Record*.....	Developmental Age 6 years less than Chronological Age, but not less than a mini- mum of 6 years**
Up to 33	6.0
34	6.2
35	6.4
36	6.5
37	6.7
38	6.9
39	7.0
40	7.2
41	7.4
42	7.6
43	7.8
44	7.9
45	8.1
46	8.3
47	8.5
48	8.7
49	9.0
50	9.2
51	9.5
52	9.7
53	10.0
54	10.4
55	10.7
56	11.1
57	11.5
58	12.0
59	12.7
60	13.5
61	14.6
62	16.0
63	17.8
Above 63	6 years above Chrono- logical Age, but not exceeding a maximum of 20 years

*Generally due to the child's early discovery that he could not do much with the blocks, followed by indisposition to try. Almost without exception, the original approach to the material was one of interest and confidence.

**This estimate was used in the cases of 25 boys.

The large number of omissions in the record for this test are due to a number of causes, entirely chance so far as their relation to the capacity of subjects is concerned. Photographs of the structures were taken, and the grading was done from the photographs. In keeping track of the structures, a small slate with a designating number was placed so as to be included in the photograph. Due to poor light conditions, reflections from the slate, and improper development, many of these numbers could not be deciphered, thus accounting for the omission of a number of merit gradings.

Completion Test: Developmental age equivalents for completion tests scores are given, except when it is better than the median adult score, in which case, of course, mental age cannot be given. It is then only possible to say that the individual lies in a certain percentile of the adult group. This, accordingly, has been done, so that a score in the record below 18 indicates mental age, while one above 50 indicates the percentile of adult standing. No scores between 18 and 50 will be found. In order to average these percentile scores, it has been necessary to give some mental age to them. The age 20 has been assigned.

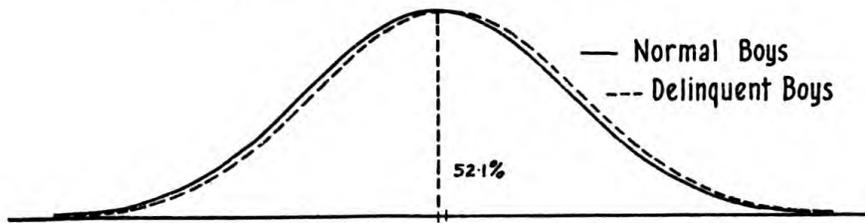
Developmental Age: The developmental age grade for each individual is an average estimate of mentality based upon the three mental tests, Binet, constructive ability and completion, after each has been expressed in terms of mental age. It is thus entirely a derived measure, but is considered more reliable than any one alone of the three measures upon which it is based. These three tests tap the capacity of the individual in many ways and this final score, designated D. A., developmental age, is the one upon which the final conclusions as to retardation are based.

CHAPTER IV. TEST RESULTS.

A reference to the original data and summaries for each age and summaries for ages 10 to 18 combined, given in Appendix A, enables as detailed a study of the traits measured as one may care to undertake. The more general tendencies will be pointed out here. The norms in all cases are those given in the preceding chapter.

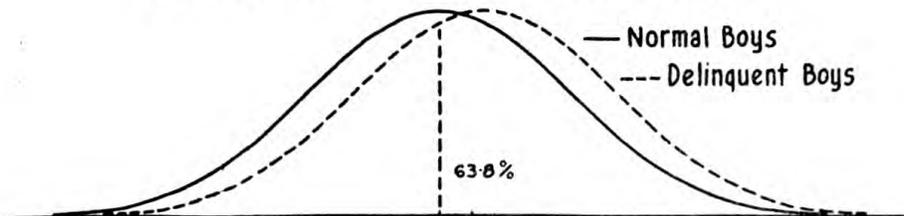
In height, the delinquent boy is, on the average, .11 years in advance of the normal boy. This makes the height of the median delinquent equal to that of the boy lying at the 52 percentile of the normal group; and if the variability of the two groups is the same, the distribution of delinquent and normal boys is as represented by Chart I. The difference here is slight,

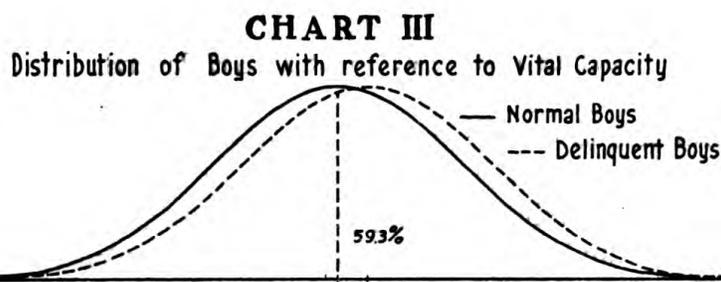
CHART I
Distribution of Boys with reference to Height



but, in the face of an anticipatory result in the other direction, is significant. There is a still greater difference, .42 years, in the case of weight, which is equivalent to a percentile standing of 64, represented by Chart II. Vital capacity, Chart III, shows

CHART II
Distribution of Boys with reference to Weight.



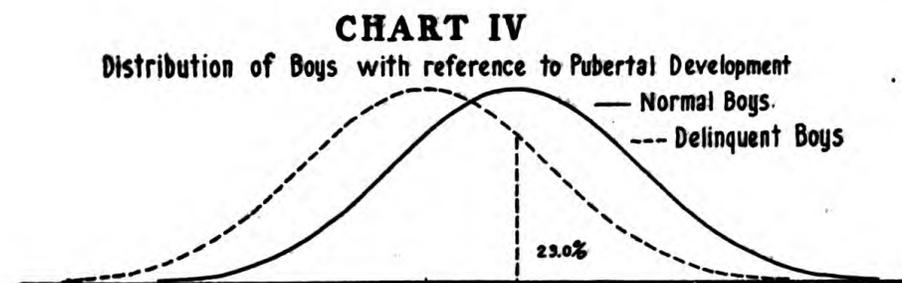


quite the same trend. The healthy, regular life and abundant food in the institution may be largely responsible for this excellent physical condition.

An examination of the age summaries shows that the 10 and 11 year old boys are relatively superior to the older boys in their physical measurements. Smedley (115) found the same relative superiority in the case of John Worthy School boys, tho the group entire that he studied averaged a little below normal. It is probable that judges are more likely to commit to the institution large 10-year-old delinquents than undersized ones. "Ten years old" does not mean nearly as much to a judge as "He is a pretty big boy." The commitment is thru human agency, and it is not surprising that sheer size of body should be a factor, particularly since the measurement of delinquency itself is so indefinite. This is just one of the evidences indicating the need of a more accurate analysis of the mental, moral and physical tendencies of the child before commitment.

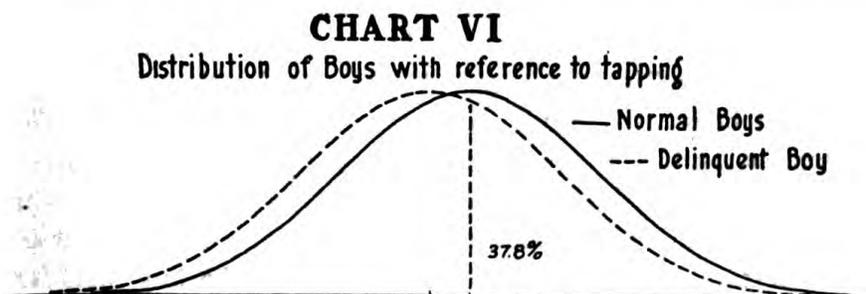
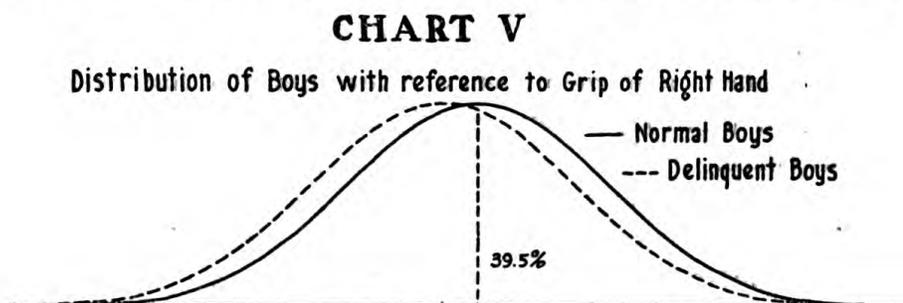
The head measurements of the boys average about 1 millimeter less than normal boys, which is not a significant difference. The situation is practically that of Chart I, reversing the two curves.

Measures of physiological retardation based upon pubertal development for ages considerably before or after the mean pubertal age, tho as shown in the summaries in agreement with the findings for the pubertal period, are less significant than the latter. Accordingly the conclusions given have been based upon 53 boys of ages from 14.0 to 14.9. These boys show, on an average, .6 of a year retardation; and the median lies at the 23rd percentile of normal Maryland boys. This is represented by Chart IV, and shows the late maturity of these boys. The



findings are in harmony with Baldwin's contention (3) that the stage of pubertal development is a very excellent criterion of mental capacity. Since a large personal equation enters into this measure, it is not as objective as the other physical measures, and more extended examinations are needed to definitely settle the very important issues here involved.

Following these anthropometric measures, three psycho-motor tests were given, strength of grip, with right hand, with left hand; and speed of tapping with right hand. Retardation in years for these three tests is respectively .45, .42, and 1.39 years. Charts V, I (full and dotted lines reversed) and VI



represent the distribution based upon these traits. It is immediately noticed that there is more retardation in this set of

psycho-motor tests than was found in the physical measurements, excepting pubertal development. Also, that the left hand is more nearly up to standard than the right hand, a fact also found by Smedley (115) and, finally, that the boys are not as deficient in strength as they are in tapping. All of these boys, young and old alike, work in the field or shop one-half of each day; and it is quite surprising, tho in harmony with the findings of Smedley (115) and Dawson (quoted by Whipple, 138), that they do not on that account surpass Chicago school boys in strength of grip. Tho the low tapping record is not as surprising, the greater retardation shown by it makes it more diagnostic. An examination of each boy for strength upon his entrance into the institution might have revealed a much larger amount of deficiency.

It is impossible to give comparative data in regard to the findings with the sensory tests. The amount of serious eye defect is large, 37 per cent, and as practically all of it was both uncorrected and undetected, it represents a condition which could not have failed to seriously influence the early life of these children. There was only one boy in the institution who had glasses, and he was not wearing them. Eye strain, school failure, truancy, and delinquency represents the history of nearly all of this 37 per cent, and it may be in large part a causal sequence.

Smedley (quoted by Whipple, 138) found that the eye defect in backward and troublesome children amounts to some 70 per cent more than for normal children. He suggests that the defectiveness may be a cause of the delinquency. Eye defect can be compensated for by glasses, and, to a measure, by an extra amount of concentration or muscular and nervous tension in controlling the eyes. As revealed by the motor tests, delinquent boys, as a group, are deficient in muscular and nervous control and, not possessing glasses, it follows as a direct consequence that school assignments involving reading are particularly difficult and dissatisfying to them; whereas a child with a better organized nervous system might be but little annoyed by an equal demand for persistent eye control. Medical examination and glasses at public expense for children having

defective sight offers promise of being a preventive of much delinquency.

Much the same may be said in regard to defective hearing. It is much less prevalent, 10 per cent being ascertained to be more or less defective, but the tax upon the child's concentration in order to "catch" what is being said and to fill in lost words, by constructive imagination or reasoning, is even greater than in the case of impaired vision.

The Binet results revealed an average retardation of 2.2 years; the constructive ability test of 5.2 years; and the completion test of 4.4 years; a mean mental retardation based upon a combination of these three tests of 3.7 years.

In terms of percentiles, these four scores—corrected Binet age, constructive ability test age, completion test age, and developmental age—show that the median delinquent boy reaches, in terms of normal accomplishment, the following percentile positions: 21.2—Binet, 18.0—constructive ability, 6.7—completion, and 10.3—developmental age.

For those who prefer results expressed in terms of intelligence quotients, or better, development quotients, the following figures are given: A mean I. Q. of .96 from the Binet test, of .82 from the constructive ability test, of .70 from the completion test, and of .77 from development age measures. These quotients are of gross scores in the case of Binet age and the constructive ability test, and are of the scores after expression as mental ages in the case of the completion test and of the developmental age. The Binet quotient is entirely unreliable, because it was impossible to receive a Binet age higher than 12. Completion test and developmental age quotients are comparable to quotients with such a test as Terman's revision of the Binet scale, but their significance is not constant, for a year's mental growth represents a greater development in the earlier years than later.

A reference to these latter quotients for each age reveals a marked tho irregular decrease in size with increase in age. This is to be expected from the nature of the quotients, and probably is not at all indicative of greater proportionate mental retardation in the case of the older boys. The quotients for the

constructive ability test are of scale values, units in one part of the scale equaling units in any other part, and an examination of the data does not reveal a decrease in the quotients with increase in age. The tendency, in fact, is very slightly the other way. Constructive ability test quotients indicate that the proportionate mental defect of the younger delinquent boys equals that of the older boys. Mental immaturity alone, of course, is not a cause of delinquency, for in that case babies would be the worst offenders. Mental immaturity coupled with maturity in other lines, physiological, emotional—i. e., development of likes and dislikes, sensitivity to ridicule, success, failure, etc.—gives the ground-work for misconduct, as these data indicate that a given per cent of immaturity is equally operative in tending toward delinquency, no matter the age. The overlapping of the delinquent and normal groups, as shown by these four measures, is pictured in Charts VII, VIII, IX, and X.

CHART VII

Distribution of Boys with reference to Binet Age (corrected)

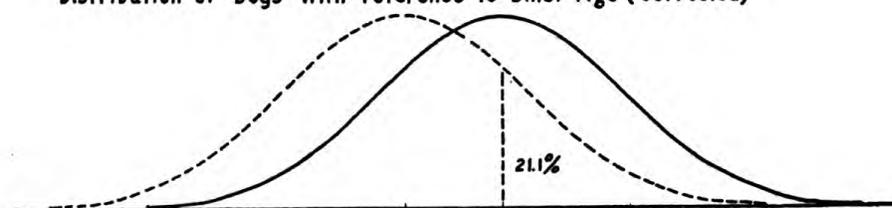


CHART VIII

Distribution of Boys with reference to Constructive Ability Test

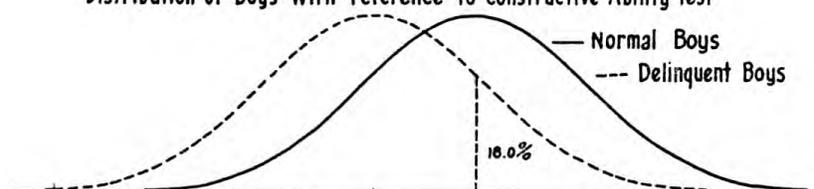
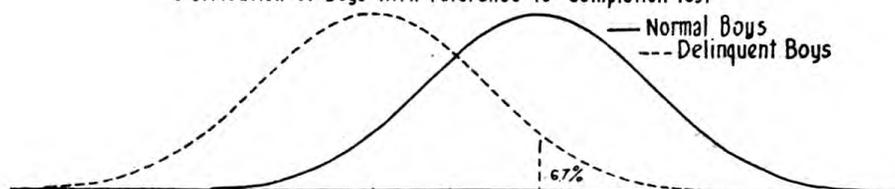
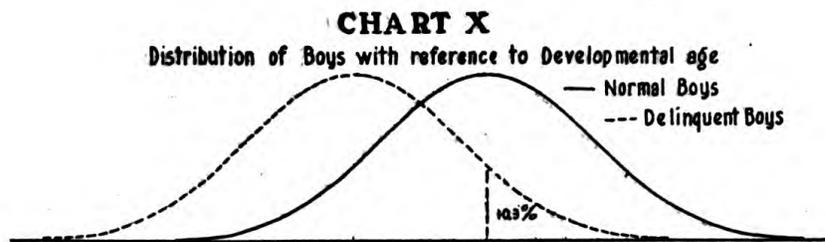


CHART IX

Distribution of Boys with reference to Completion Test





The order of extent to which the three tests differentiate the delinquent from the normal group is as follows: completion, constructive ability, and Binet.

The record in the constructive ability test is, however, the most surprising, as the material in this test is not at all the subject matter of the school, and the lack of school training cannot be considered as the cause of poor accomplishment in it. The conditions under which the test was given were very favorable from the standpoint of interest and co-operation of the subjects. The boys were glad to have the routine of school and field work broken into by the novelty of the tests, and their initial attack of all problems was excellent. So the cause for the deficiency must be looked for in the original nature of the delinquent—in his inherited assets. The devising and erection of a structure so as to utilize to good advantage the available building material is the solving of a problem situation. There is, first, an awareness that a problem exists; second, that it is to build something of merit from the blocks at hand; third, the idea that the problem can be met by building, let us say, a wind-mill; fourth (and this is especially characteristic of the higher type of constructive ability), a survey of the material to see if it permits of being made into a wind-mill, according to the idea that has just taken shape in the mind, and in case it is not, the idea is altered and a re-examination is made; but in case it does, fifth, an execution of the task, making, in case step four was not adequately carried out, such modification in the purpose as the material imposes.

This is exactly the process Dewey describes as that of a complete act of thought; so the constructive ability test shows itself to be essentially a test of reasoning ability, and still more specifically of inductive reasoning, for the purpose has to be evolved

by the subject in steps three and four. The record indicates that the boys are natively deficient in this capacity.

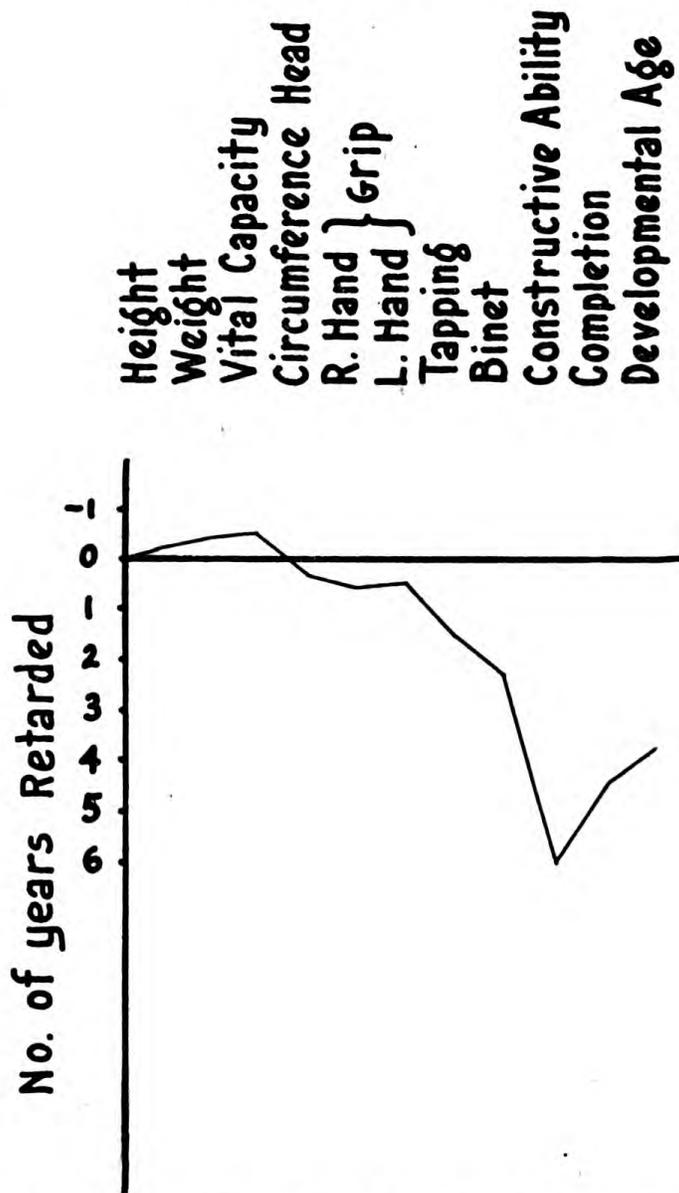
The completion test involves the same elements, except that the purpose is more definitely set and the experimental verification of the tentative solution is lacking. The very low standing in it may be attributed to the fact that it requires two things in which the delinquent boys are deficient: first, reasoning ability and, second, fluency with written English. As the constructive ability test is essentially a reasoning test with structural material, so is the completion test primarily one with verbal material. The pronounced school backwardness of these boys is sufficient evidence of their poor command of written English. Material is at hand, but not here presented, showing extensive truancy and absence from school for whole years at a stretch—it is to be remembered that Texas did not possess a compulsory education law before 1916. It may accordingly be considered that the extreme backwardness shown is due to the sum of two causes: native and acquired, reasoning and command of English, the latter of which at least can be greatly influenced by proper education.

The Binet test, involving as it does, little of the true reasoning demand, and having much more of memory and perceptual requirement, and also being less directly dependent in its subject matter upon the school than the completion test, gives results which, with those noted, warrant the belief that these boys are more defective in reasoning ability than they are in memory and perceptual capacity.

The comparative standing of the boys in the different tests is presented in Chart XII, where retardation is expressed in terms of years, and again in Chart XIII, where it is shown by giving the position of the average Gatesville boy in terms of the percentile of the normal group reached.

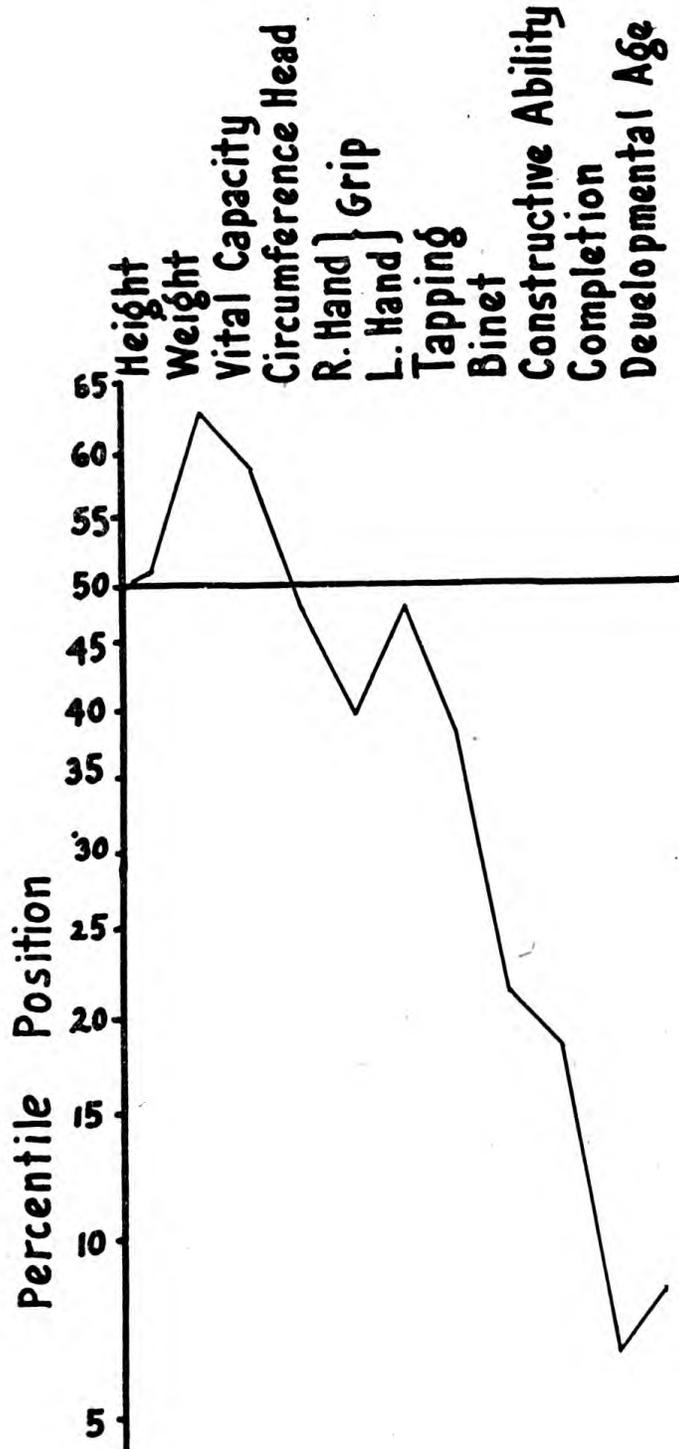
In general, all these data suggest that the delinquent boy in the Texas State Juvenile Training School lies near the 55 percentile in his physical being, exclusive of physiological development, the 40 percentile in his sensory and psycho-motor, the 30 percentile in his perceptual and memory, and the 15 percentile in his powers of analysis, inference and deduction.

CHART XII

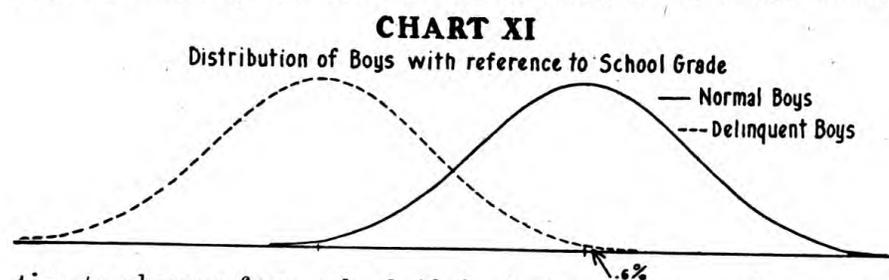


The standing of the boys, in terms of school classification, shows a greater backwardness than that found in any of the tests. The average retardation is no less than 4.6 years, equiv-

CHART XIII



alent to a standing, as represented in Chart XI, in the lower 1 percentile. In view of the fact that poor mental capacity, eye defect, hardness of hearing, general lack of parental control or concern, and indifference on the part of school authori-



ties to absence from school, if, in fact, not an actual encouragement that the "bad" boy stay away, all conspire to keep the child out of school, it is not surprising that 50 per cent of the delinquent boys do not reach a school standing equal to that reached by the slowest 1 per cent of those who attend school. This would, indeed, be an appalling situation were it not for the fact that it is very largely subject to social control.

The remedy lies, first, in an enforced compulsory education law; second, and as a consequence to the first, in the creation of special classes for the mentally defective, the unruly, and other special groups; third, in the physical and psychological examination of school children, leading to the correction at public expense of such defects as may be corrected, and the adjustment of school requirements to individual capacities; fourth, a vocational enrichment of the curriculum, so that the child and parent of low social and economic standing may see an economic value in an "education;" and, fifth, an interested and sympathetic guidance in vocational and educational matters by a school officer or a bureau in touch with the capacity and training of the child and the needs and opportunities of the community.

These proposals mean a saving when measured in terms of the reduction in cost to the state on account of lessened delinquency and crime, and in terms of the greater productivity of the trained youth over the illiterate or poorly trained one. In addition to the direct economic warrant for the establishment of these recommendations is the contribution toward a more

enlightened and happier citizenship, a warrant which must appeal to a progressive and democratic people.

Delinquency is not a sporadic consequence of one hundred and one causes. It does not select one child because he lives in a hovel, another because he has poor eyes, a third because he is epileptic, and a fourth on account of feeble wit, and pass by, for no reason at all, hundreds equally unfortunately situated or endowed. It must be noted that "delinquency" does not describe a single mental, moral or physical condition. The laws the infringement of which lead to Gatesville are almost innumerable, altho it is a fact that something like 90 per cent. of the boys there are guilty of stealing. A few boys get to Gatesville almost as a matter of accident, as, for example, one boy who joined in a "scrap" that was taking place between his father and mother, hitting the father with an axe and killing him. A period of time at the training school to impress the value of deliberation before action may be of value to this boy, but in terms of mental make-up he is not a delinquent in the same sense as is the truant, who becomes a lying, swearing, thieving member of the railroad yards' gang. Other exceptional cases could be cited; but, nevertheless, there are certain characteristics so general that it is reasonable and serviceable to think of the 80 or 90 per cent. of delinquent boys possessing them as forming a group that is homogeneous as concerns their frailties, and but slightly less so in the matter of their environments.

With reference to this large group it can be said that delinquency has been a growth. This implies that there is both a seed and a favorable soil, a germ of delinquency and an environment that nurtures it. Is this germ to be found in their physical beings or is it a matter of the emotions or of the intellect? The obvious answer would be that it is a matter of their "moral" nature, but that scarcely throws light upon the situation. If we seek for its beginnings, we may find that the boy in his early life "happened to get in with a bunch of bad boys," or that he "started by stealing another boy's top," or he showed his evil nature by "dragging the cat around by the tail." These things, however, are the common lot of youth. Every

active city boy has found himself at times with a gang of "toughs," and probably every child has appropriated something that was his play-mate's, and even the gentlest has pulled the cat around by the tail at least once. The difference is not in the first occurrence, but in the lesson that is taken away from it. Contact with "toughs" builds up an antipathy to further contact, anti-bodies, so to speak, or it does not, dependent upon the analysis of the situation made at the time of, or immediately succeeding, the first contact. The healthy intellect imagines or reasons out the situation, sees what it leads to, and concludes that its consequences are undesirable—this conclusion is the anti-body—; whereas the child with less power of discernment, analysis, inference, deduction, will establish no anti-body, and will find himself a full-fledged member of the gang before he is aware of the consequences of such association. The thoroly normal boy goes wrong, but in his case the consequence of it is correction—not in the act but in the fruit is to be found the difference. ✓ The lack of foresight and of analytical capacity is at the root of delinquency, but this alone is not sufficient, for it is equally characteristic of feeble-mindedness, a condition having much in common with delinquency but by no means identical with it. ✓ The feeble-minded and delinquent do not differ simply in degree. Bright, average, dull, delinquent, feeble-minded is not a true progression. Further cause may be found in the emotional tendencies.

Sweet little, gentle Julie Johnson has probably pulled her kittie's tail. She may even have giggled at its antics, but a plaintive "meow" or a word from mother has left a deeper impression than that of amusement. An "anti-body" is created, and Julie will thereafter exercise her tail-pulling proclivity on her hobby horse. A child who cannot first see and then sympathetically feel the pain he is inflicting not only builds no counter tendencies but becomes addicted to cruel practices. The finer feeling and the subtler thinking is foreign to his mental life. Inability to appreciate and sympathize with the body-pains and heart-wrenchings of others is characteristic of the individual with subnormal emotional development of the criminal imbecile and their ilk. Chronic indisposition,

but not inability, to sympathize with these things is characteristic of the bully who is leader of a gang, one whose early training has resulted in his tendency to react brutally—a tendency which is a common heritage—being aroused, strengthened and connected with situations which a healthier environment would have connected with kindlier impulses. He is an unfortunate child of circumstances. The Gatesville boy seems to be a cross between the two types just mentioned. He is one who is not particularly endowed with capacity to appreciate, and one who has lived where few demands have been made upon this stunted virtue. As a result, he is a brutal boy, fearful when not vainglorious, a coward when not a bully. Some may doubt that the trait described is an hereditary one, but no one who knows the boys will question its reality. Obvious it is that the boy is living emotionally upon a low plane. Coarse jokes, hate, fear, jealousy, extreme selfishness make up his emotional life. Games that are lacking in team work, individual starrng in baseball, success at crapps in the corner of the yard, success the main pleasure of which is some one else's discomfiture, bullying and bragging in the daytime, and, if not healthily tired and surveillance slackens, not infrequently masturbation and sodomy at night; such is his emotional life. A few of the boys most of the time, and most of the boys some of the time live on a higher plane, and in that is the promise of their redemption, and along that line is the need of instruction and sympathetic guidance. The delinquent boy is not weak and vapid in his emotional life, and in this he is differentiated from the typical defective, who is in his whole being but a part of a man. A genuine, full-grown imbecilic man will, not by an effort of the will but because of poverty of passion, keep his hands off a woman whom he discovers in scant attire—if she be ready of wit, she can send him away with a “Don't bother me, I am taking my bath.” The imbecile, with intellect weak and emotions dull, will act on the suggestion given, because it is stronger within him than anything else. The post-pubescent delinquent would be a dangerous man in such a situation. He is not without emotions. He is without the subtler ones only. He is not without comprehension. He is without ability to

analyze and control that which he comprehends. That is a delinquent nature which is lacking in the proper balance between intellectual and emotional capacity—a hypertrophied development of the strong emotions and the desire to live in them, coupled with a lack of intellectual foresight and domination, which means a lack of control and responsibility, and he is on the road to Gatesville who possesses such a nature and is permitted by laxity of parents and teachers to gravitate to a congenial resort with his pals in the out-of-the-way places of the city. These general considerations are meant to be descriptive of the typical delinquent, but of course, many individual variations are found. A general formula is sure to do violence in some instances, and the following chapter is presented with a view to giving a procedure which will lead to an understanding of individual cases.

CHAPTER V. CASE STUDIES

With the system of handling delinquents as it now exists in Texas, there is no one from the time the child starts to play truant to the time of his dismissal from Gatesville who knows his entire history and understands his mental and physical capacities. The three social institutions, the school, the court, and the juvenile training school, each obtains inadequate records, and the records of each are unknown to the others. This is peculiarly unfortunate in view of the delinquent's well nigh universal proclivity to prevaricate, and it makes it very difficult to determine what constitutes their proper education.

The procedure which is characteristic throughout the entire process of their handling is that of shifting responsibility. The home passes on the problem of the unruly boy to the school, the school does not keep him, and thus passes it on to the court, which directs his migration to Gatesville. That institution retains the boy for a while, and turns him back to society, which may suffer him for a time and then send him to the penitentiary, where the process is repeated. This arraignment is rather severe, because the intentions all the way along have been of the best. The boy, misunderstood by one authority, has been passed on to another, with the vain hope that he would there be handled properly. With the advent of Superintendent Eddins at the State Juvenile Training School a real attempt was made to educate rather than to punish the boy, and it was very evident to all of us who studied these children that he was successful in actually changing for the better the reactions of these boys to their environment. Each boy was given a grade by the writer, and the other examiners, for "social attitude"—a grade determined by the extent to which he was sullen or co-operative, secretive or frank at the time of the examinations. Differences in the grades for social attitude might be considered to be due to the differences in individual natures of the boys and quite independent of factors under the control of the Training School, but this is not entirely so; for there is an actual improvement in social attitude with length

of stay in the institution up to six months. The average attitude grades given are approximately as follows:

Boys in the school less than 1 month.....	2.4
Boys in the school between 1 and 2 months.....	2.6
Boys in the school between 2 and 3 months.....	2.9
Boys in the school between 3 and 4 months.....	3.2
Boys in the school between 4 and 5 months.....	3.4
Boys in the school between 5 and 6 months.....	3.5
Boys in the school between 6 and 7 months.....	3.5
Boys in the school 12 months.....	3.5
Boys in the school 24 months.....	3.5
Boys in the school 36 months.....	3.2
Boys in the school 48 months.....	2.8

The falling off of those who have been there three and four years is obviously to be attributed to the fact that only the worst cases stay in the institution that length of time. The change in attitude of the earlier months, however, cannot be due to selection but to actual improvement in the individual. In the old days when the guards toted guns and every one who willed wielded a whip, improvement at all could hardly be found. The correlation between social attitude and length of stay in the institution for the first six months is .31 (probable error .06), and if a correlation coefficient can be a compliment, this one certainly is a tribute to the elevating influence of the institution during Superintendent Eddin's administration. But in spite of the new purpose of the School, a large proportion of the boys are undoubtedly still simply turned back upon society to ply their nefarious pursuits. The Training School is the only social agency that has seriously attempted the education of the delinquent, and because of lack of understanding and lack of co-operation on the part of the other social agencies, it is but very partially effective.

There is needed an analytical study of each delinquent boy by authorities that have access to, or can gather, information as to the child's history; that can ascertain the important facts of his mental and physical capacities, and that are cognizant of the opportunities for education and placement that are open. It is also imperative that there should be more extensively diversified types of education than are now open, types that fit special individual capacities, and, finally, that there should be a much closer touch with the post-institutional life of the boy.

The analysis of individual character outlined does not need to be performed as many times as there are individuals who handle the case. If it is well done once, and the record is made available for succeeding administrative officers, it is quite sufficient, for, tho the manifestation of human nature changes with age, and tho these changes should be carefully recorded for future advisors, nevertheless the constancies of human nature are so marked as to permit of a single careful evaluation having general value. The earlier this examination is made in the life of the child who has a delinquent nature, the better for the sake of his future guidance. But at present it is not feasible to think of an adequate examination being made of even so small a group, relatively speaking, as that of "boys who play truant." Even the group of "boys who are arrested" is too large, except in the larger cities, but it surely should not be impracticable to carefully examine all the "boys who are convicted." Conviction and sentence may well be entirely separate functions and performed by separate authorities. Let it devolve upon the judge to ascertain the facts in the case and certify to the innocence or guilt of the boy, and then let the case be turned over to an expert state board, with headquarters in the centers of population, to determine the physical and mental make-up of the miscreant, the institution to which he should be committed, and the kind of education he should there receive, and, finally, let this same board pass upon the release and placement of all cases, to insure, in so far as it is humanly possible, that justice is done the individual and society is safeguarded. As conditions now exist, it is certain that there are individuals at Gatesville who would better be at the State Orphans' Home, others in the School for the Epileptic, others in the School for the Deaf, and many others in the colony for the feeble-minded. There are probably individuals in all of these places who would better be in the State Juvenile Training School.

Such a board as is recommended has need of information concerning the family, the environment, the school record, and the present physical and mental status of the child. The following forms cover the first four of these points. Forms 1 and 2 may, in lieu of a regularly trained field worker, be filled out by the judge or probation officer. As many relatives and ac-

acquaintances should be consulted as can give important information. Form 3 should be filled out by the local superintendent of schools. Forms 4 and 5 should be filled out by members of the State Board. In addition to the information here called for, there should be an analytical mental examination. Form 4 and the mental tests should be handled by a trained psychologist, and Form 5 by a physician. The physical examination might well be more extensive than outlined; in particular where defects are revealed, they should be followed up and studied more intensively.

University of Texas—Psychological Clinic

DEPOSITION OF RELATIVE OR ACQUAINTANCE

Subject..... Date.....
 Deposition of..... Relation to subject.....

Concerning subject:

Date of birth..... Full period of gestation.....
 Health of mother during pregnancy..... Extraordinary
 circumstances attendant upon delivery.....
 Past general health and bodily condition of subject.....
 Present general health.....
 Age at which subject began to walk.....; talk.....
 Age at which peculiarity, if one exists, was first noticed.....
 Is subject now, or has he been in the past, subject to convulsions
 or fits of any kind?..... Subject active and vigorous,
 or indolent?..... Untidy?..... Fond of
 highly seasoned food, or does he "eat anything"?.....
 Fond of music?..... Personal habits neat?.....
 Does he break, steal, or hide things?..... Obedient?.....
 Is his acquaintance sought or avoided?.....
 Quick tempered?..... Bad habits: smoking?..... chewing?.....
 drinking?..... self abuse?..... biting finger nails?.....etc.
 Vision?..... Hearing?..... Nose?..... Throat?..... Teeth?.....
 Age on entering school..... Last grade attended.....
 Date..... Cause of withdrawal.....
 Present grade..... Years retarded.....
 Cause of retardation (or advancement).....
 School work:
 Special difficulties..... Special aptitudes.....
 Probable vocation..... Reasons for choice.....

If deposer is related by blood to subject, note:

Stigmata: nervousness..... degeneracy..... other
 abnormality..... Apparent standard of living..... Candor.....
 Social or anti-social attitude..... Dullness.....

Notes.....
 Examiner.....

University of Texas—Psychological Clinic

DEPOSITION OF RELATIVE OR ACQUAINTANCE

Subject..... Date.....
 Deposition of..... Relation to subject.....
 Concerning:

Name (Sex)	Living or dead	Health (Senses perfect, nervousness, fits; if dead, cause)	Avocation: (Reading, sports, temperateness, home loving, church)	Age	Vocation (Standard of living)
Father.....					
Mother.....					
Sibling.....					
“					
“					
“					
Father's line..					
“ . “ ..					
Mother's line..					
“ . “ ..					

Institutional or penal history in connection with any of the above.....

Examiner.....

University of Texas—Psychological Clinic

DEPOSITION OF SUBJECT

Name..... Date.....
 Sex..... Address.....
 Nationality (color).....

Name	Living or dead	Age	Health (Senses perfect, nervousness, fits; if dead, cause)	Avocation (Reading, sports, temperateness)	Vocation
Father.....					
Mother.....					
Sibling.....					
“.....					
“.....					
“.....					
Subject.....					

Age on entering school..... Last grade attended.....
 Date..... Cause of withdrawal.....
 Present grade..... Years retarded.....
 Cause of retardation (or advancement).....
 School work:
 Special difficulties..... Special aptitudes.....
 Probable Vocation..... Reasons for choice.....
 Subject's own desire and recommendation with reference to his future.....
 Points to be noted: Speech defects..... Candor.....
 Attitudes..... Understanding of questions.....
 Facility of response..... Mental dulness.....
 Stigmata; nervousness..... Degeneracy.....
 Other abnormality.....
 Notes.....
 Examiner.....

University of Texas—Psychological Clinic

PHYSICAL EXAMINATION

Name..... Sex..... Age..... Date.....
 Height (cm)..... Weight, with clothes (kg).....
 Grip, right hand..... left hand..... right or left handed.....
 Speed of tapping (number in 30 seconds).....
 Vital capacity (cc)..... Vital index.....
 Circumference of cranium..... Breadth..... Length..... Cephalic index.....
 Inspection of cranium (asymetry, hair)..... Face.....
 Eyes..... Ears..... Nose..... Throat.....
 Teeth..... Tongue..... Palate..... Hands.....
 Skin and appendages (cicatrices, eruptions).....
 Respiratory organs..... Circulatory organs..... Heart beat.....
 Genito-urinary organs (phimosis).....
 Physiological age (pre-pubescent, pubescent, post-pubescent).....
 Nutrition..... Arm girth..... Chest girth.....
 Signs of nervousness.....
 Vision: Strength, right eye..... left eye.....
 Astigmatism..... Other indication of eye complaint
 (headaches, muscular spasms).....
 Hearing..... right ear..... left ear..... Speech.....
 Is an exhaustive examination needed of hearing?.....
 Of speech?..... vision?..... nose and throat?.....
 Notes.....

Examiner.....

The highest judgment, training and experience is requisite to the interpretation of the data gathered. There are three well recognized ways of interpreting qualitative physical and mental data: the development quotient, the number of years retardation, and the percentile position method. The quotient of what a child's standing is, divided by what it should be for one of his age, sex, and nationality gives the development quotient; or if the test is one of intelligence, the intelligence quotient, as it is usually called. Such quotients have been given in the age summaries, but a quotient of a certain magnitude in one test and at one age does not have the same significance as different age. The same may be said of the measure "number of years retarded." Percentile position measures do have comparable significance regardless of the test or age. If a 16 year old boy stands at the 10th percentile in weight, and a 10 year

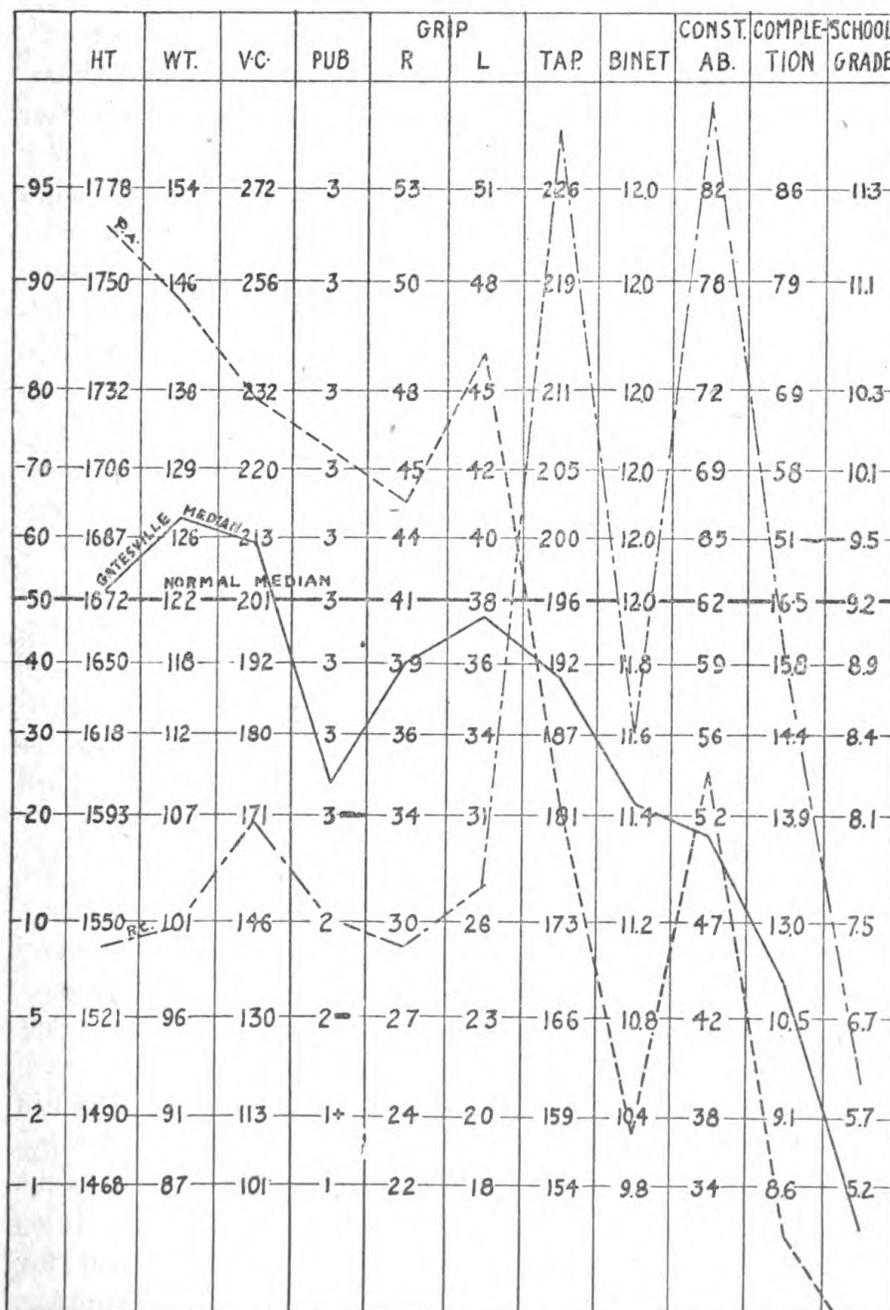
old girl at the 10th percentile in Binet age, it means, in the one case, that 90 out of 100 boys of his own age exceed him in weight, and in the other case that 90 out of 100 girls of her own age exceed her in Binet age. In this sense the measures are comparable, whatever the age or the test considered. The main draw-back to this method of interpreting results lies in the fact that relatively few physical and mental tests have been worked up in a manner to yield standard percentile scores. By a search of the literature and by making certain assumptions (a normal distribution assumed to enable calculation of percentile scores not given in the literature; the standard deviation of tapping found for delinquent boys assumed to equal that for normal boys; and certain assumptions in the case of Binet age to allow for the omission of the higher Binet test questions) it has been found possible to draw approximately true percentile scores for all of the following measures: Height, weight, vital capacity, pubertal development, strength of grip of right hand, strength of grip of left hand, speed of tapping, Binet age, constructive ability score, completion test age, and school grade. Chart XIV gives these data for boys aged 16.5. The scores 1672 (mm.), 122 (pounds), 201 (cubic inches), 3 pubertal development scale, explained on p. 18), 41 (kg.), 38 (kg), 196 (number of taps in 30 seconds), 12.0 (Binet age), 62 (score on constructive ability test scale), 16.5 (completion test, mental age), and 9.2 (school grade, as explained on page 20), are the median scores for normal children. A 16.5 year old child who should make exactly these scores would be an average child in every respect. The other entries in the table are in the same units, except the percentile values for the completion test at 60 and above. These are scores in terms of the percentile position of adult standing.

The heaviest lined graph is the same as that shown in Chart XIII, omitting circumference of head and developmental age and adding school grade. It represents the average Gatesville delinquent, just as the horizontal line, corresponding to the 50 percentile scores, represents the average normal child.

The graph labeled "P. A." is of a boy who differs from the typical delinquent, first, in his size of body, and, second, in his

CHART XIV

UNIVERSITY OF TEXAS-PSYCHOLOGICAL CLINIC AGE 16-5 - PERCENTILE CHART



markedly weak mentality. From information recorded on Forms 4 and 5 (the information suggested on Forms 1, 2, and 3 has not been gathered for these boys), it is found that P. A. is pretty well endowed physically. A slight stoppage of the right nostril and slightly weak eyes being the only defects. His reading interests are represented by "Alice in Wonderland" and "Fairy Tales," and his sport by "base ball" and "marbles." P. A. reports that he stopped school because his father was sick; that he finds arithmetic hard, but is exceptionally good at all other school subjects; that he had to go to work for a man who lived several miles from town, and that in order to get back to town he stole a horse, leading to his arrest. He is graded rather low in social attitude and candor. He is a full-grown post-pubescent boy of poor family, childish understanding and interests, and possessed of such powers of discrimination and judgment that he will steal a horse for the sole purpose of saving a few miles walk. This inability to foresee the consequences of an act, though a little more obvious in this particular case than usual, is characteristic of all delinquents. In two or three or at the most in four years, will this boy be returned to society cured of his "wickedness?" Not unless some miracle cures him of his feeble wit. The turning of this boy loose where his life will not be supervised is democratic short-sightedness, not to call it by a harsher term. With a body such as his and a comfortable State home to live in, where he won't have to walk too far, and a farm to work upon, he would probably be a self-supporting, happy individual, but who can say what the consequences of his release may be?

The graph of R. C. gives a brighter picture. This boy's record is given because he is responsible for the best performance made in the constructive ability test. Physically, R. C. has "bright" eyes, large and protruding ears, deeply furrowed, nervous hands, and is physiologically undeveloped. He did not start to school until ten years of age, has attended irregularly, but now at 16 is in the sixth grade. He likes to make things, and wants to be an electrician or mechanic. He is graded high in candor and social attitude. Committed for stealing. This boy, at the 20 percentile in school standing,

but nevertheless at the 40th in the completion test, is not at Gatesville because of any lack of intellect. The data are insufficient to show the cause of his delinquency, but his nervous hands, brilliant eyes, extreme speed of tapping, immature physiological development and slight body indicate a high-strung temperament. The problems of self-control and deliberation that this boy has had to face have probably been excessive. A thorough medical examination and etiological investigation would probably be very illuminating. To view him in the same light and subject him to the same institutional life as that which is appropriate for P. A., or even for the average delinquent, is a rank injustice.

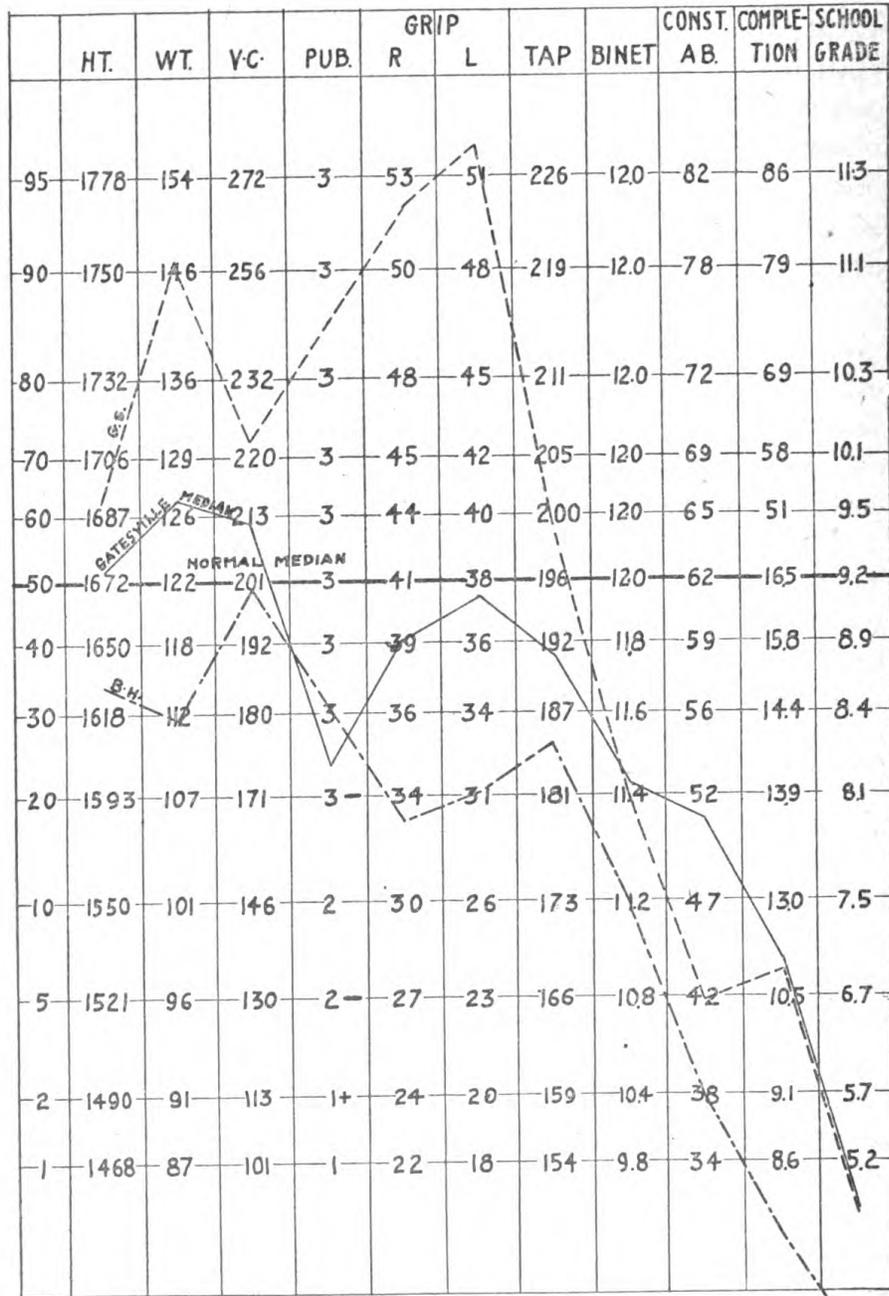
R. C. possesses such powers of analysis and appreciation that, given the opportunity, he can live a mental life with the keenest. If such boys are to be committed to Gatesville, proper provision should be made for their education. The entire circumstances of this case are not available, but certain it is that constructive talent of very high order is going to waste.

The two boys just described both show, relative to other mental capacities, superiority in constructive ability. Education should cater to such special capacity. No one is ever so happy and efficient as when doing that which he can best do.

B. H. is normal in height, weight, vital capacity, and pubertal development, slightly below in strength of grip and tapping, has weak eyes and astigmatism, is hard of hearing, and has a drawn expression around the forehead. He is very poor in all the mental tests, especially in those involving reasoning. In brief, in physique he lies at the 40th percentile, at the 20th percentile in psycho-motor accomplishment, about the 10th percentile and sensory capacity, and at the 2nd percentile in mentality. He does not read, enjoys base ball and marbles, and states that he was committed for stealing—three separate offenses—and riding freight cars. He is graded very low for candor and social attitude. This case differs from that of P. A. in the marked defect in psycho-motor and sensory capacity. His pronounced anti-social attitude is probably due to inability to grasp training school requirements, leading to infraction of rules and punishment, with a resulting antagonism toward

CHART XV

UNIVERSITY OF TEXAS-PSYCHOLOGICAL CLINIC AGE 16.5 - PERCENTILE CHART



authority. Feeble-mindedness rather than delinquency characterizes this case.

Contrasted with B. H. is G. S.; large, strong, and healthy, senses perfect. He has a high, narrow palate and extra spurs on molars. The record has "diseased" with a question mark, after "genito-urinary organs." Above the right eye is a marked scar where he "was hit by a rock eight years ago" and on the back of the head one caused by "falling out of a hammock six years ago." In the mental tests he almost exactly follows the standards of the typical delinquent. He does not read books, but likes the *New Story Magazine* and the *Railroad Magazine*. He plays base ball. His father and mother are separated. He is a repeater, having served a term in the Boys Industrial School in Kansas. Candor and social attitude fair. Committed for numerous thefts. Here is a boy with wit enough and abundance of life more than enough to enable him to become a dangerous criminal. Give him education so that he can utilize his body strength, and watch him. His parole should be long and carefully supervised. It is particularly the province of the training school to save such boys as he. The entire endeavor should be to train him so that he may come back and take a worthy place in society. B. H. belongs in a colony for the feeble-minded, but G. S. is part and parcel of our body politic.

These case studies will serve to illustrate the analysis of individual capacities that should be made before passing sentence and to point the great necessity of fitting the education to the individual needs. Only after such a study has been made is rational treatment possible. The writer's opinion has been asked as to the number at Gatesville who should be in a colony for the feeble-minded. He personally would not make the recommendation that any individual belongs there, except after an analytical study of the case. Such studies have not been made, except for a few of the boys. He would expect, however, that such study would reveal the desirability of placing some 20 per cent of the white boys at Gatesville in such a colony and keeping them there for life. Judged by the Binet test

(scores corrected as shown on p. 21) alone and calling those who are four or more years retarded and possessed of a mental age below 12 feeble-minded, gives 25 per cent feeble-minded. The findings of other investigators on this point will be reviewed in the next chapter.

CHAPTER VI. SUMMARY AND RECOMMENDATIONS

The relative importance of heredity and environment in causing delinquency has been the subject of a multitude of views. The relationship between them has been pictured in Chapter IV as that between seed and soil. This study in particular has considered in detail the nature of the seed, and it would be profitable to consider with equal detail the quality of the soil. It must, however, suffice to quote other authorities upon this point.

A study of the home conditions of 351 delinquent boys at the Whittier, California, School (114) revealed that but 29.6 per cent came from unbroken homes, and that 70.4 per cent came from homes where the father or mother was dead or the parents were separated. Williams found (141) in a study of 150 boys in the same school "that there has been much truancy and absence from school," and also much school retardation.

Fernald (33) found that but 13 per cent of delinquent girls came from homes where parents lived together, and that in only six per cent of these cases was the home in any sense satisfactory. There can be no doubt that broken families are indicative of many evils, including lax parental control, cessation of attendance at school, and employment of children as messenger boys and in factories, where the daily influence has a vicious effect upon the youth.

Gruhle (49) attempts to estimate the per cent of delinquents who could have been saved had they lived under favorable environmental conditions. This is a difficult task, but is there any reason to doubt that if taken in time and placed under the best of conditions, all except the feeble-minded and insane could be saved?

Barnes (4) made a follow-up study of some incorrigible boys, and states that most of them are now living normal, useful lives. As an actual accomplishment, this is certainly unusual, but there is no reason why, with wiser methods of handling, it should not be generally realized.

It was found (27) that 74 per cent of the children at Dobbs

Ferry made good when returned to their old environments, and 90 per cent made good when returned to new environments. These percentages also are high, but the most important point that they show is that the environment into which the child goes has a great deal to do with his redemption. If just a chance for a new start can increase the percentage by 16, how much greater promise must a long continued training under excellent environmental conditions hold?

The transformation of a dull, but not feeble-minded, child who has firmly established habits of delinquency is so difficult a task that, under the best of conditions, it may be impossible of accomplishment if the attempt is long delayed. The present State Juvenile Training School Board recommends (126) that 12 should be the minimum age for admission. It is quite right to desire to separate pubescent from mature delinquents, and to give them a different training—a more natural training—but it would greatly increase the difficulty of accomplishing a reformation to permit the delinquent boy of 8 or 10 to pursue his mode of living until 12 before any attempt at his proper education is made.

Kohs (81) considers that the importance of environment has been generally underestimated, while Pintner (101) concludes that "low mentality, not poverty or neglect, paves the way toward delinquency." The writer would hold that poverty and neglect pave the way and low mentality starts the boy down it and keeps him on it.

There are three social agencies thru which the environment of the delinquent boy may be affected; the school in the days of his early waywardness, the juvenile training school in the days of his attempted reformation, and the furlough officer and local officials who have to do with his placement after his release. None of these agencies is measuring up to its task. The public school is indifferent, the training school is lacking in understanding, and the parole system is generally inadequate and lacking in the exercise of constant and sufficient supervision.

The weight of evidence in this study warrants the belief that heredity is the largest and most important factor, in that it sup-

plies the nature that is potentially delinquent despite the conclusions of Spaulding and Healy (117) that there is no evidence that criminalistic traits as such are inherited. The actual crimes committed are certainly made possible by the environmental opportunities, and in this sense, but only so, does there seem ground for their statement. The Galton Laboratory of Eugenics (35), Thorndike (127), Rosanoff (109), Goddard (42), Davenport (26), and many others have shown the high inheritability of mental traits—an inheritability, in fact, that is as strong as that for physical traits, and unless mental attitude and traits are denied as causes of delinquency, inheritance must be a predominant factor. Williams (141) finds that in 17 per cent of the cases committed to the Whittier School, one or more members of the immediate family have been committed upon similar charges. Guyer (50) and Goddard (39, 42), and Davenport (26) also present excellent evidence upon this point.

The present study is unique in that very excellent height, weight, and vital capacity conditions were found. It has been shown by Baldwin (3), Chamberlain (17), Doll (29), and others, that there is a correlation between body measurements and intellectual standing, but such correlation as found is small. Anthropometric measurements as a means of diagnosing delinquency are entirely unsound, as has been pointed out by Healy (56). Head measurements in particular are quite worthless in diagnosis. Even the small correlation found by Ruedeger (111) does not seem to maintain.

King (77), Crampton (23), and Baldwin (3) all report appreciable correlation between physiological development and intellectual performance. The present study strengthens this view, but it is at present safe to draw tentative conclusions only.

The real diagnostic value of psycho-motor and sensory tests may be considered definitely established by the present study, particularly as it is in harmony with the finding of such investigators as Smedley (115), Pyle (107), and Goring (47). Goring concludes that the criminal man is, to a large extent, a defective man, either physically or mentally, or is unable to acquire the complex character which is essential to the average man, and so is bound to follow the line of least resistance.

Hill (62) conducted a survey thru the teachers of New Orleans, and found that 2.9 per cent of the white children were reported as having defective vision, 1.1 per cent defective hearing, 2.3 per cent defective speech, and 1 per cent incorrigible. The amount of defective vision and audition reported is certainly unreliable, as the ordinary teacher does not discover these defects, but the speech defect and incorrigibility data should be fairly accurate. These data show the necessity of medical examination of school children, if elimination from school on account of sensory defect is to be stopped; and they further show that the problem of delinquency is a problem that the public school must face, if it is to be solved, for there are no less than 400 incorrigibles in New Orleans alone, according to Hill's survey.

The diagnosis of delinquency upon the basis of physical make-up is impossible, but the same can hardly be said of moral make-up, because immorality is delinquency in the case of girls, and it is only the double standard of life that makes it less so in the case of boys. Morrow and Bridgeman (92) found that out of 500 delinquent girls 371 had been committed for immorality, 50 for incorrigibility, 46 for dependency, 25 for larceny, 4 for truancy, 3 for drunkenness, and 1 for sending obscene matter through the mails.

There is enough in common between the mental attitudes of delinquent boys and girls to believe that much the same amount of immorality would be attributed to the older delinquent boys were the social evaluations the same for the two sexes. The very concept of morality makes it a function of social standards in regard to things sexual, and hence exceedingly difficult of measurement. Nevertheless, Fernald (34) considers the determining of moral ability to be one of the purposes of his test. In so far as it is a consequence of intellectual capacity, it is capable of measurement, and Goring, as quoted above, has given expression to what may be taken as the correlation between intellect, immorality, and crime.

Strieve (75) is probably right in considering that wide social distinction between upper and lower classes makes it more diffi-

cult to appreciate social standards than would otherwise be the case, and on this account to contribute to moral turpitude.

The intellectual status of criminals and delinquents has been the subject of investigation by many, resulting in wide differences of opinion. That there is a very intimate relation, as forcibly pictured by Goddard (39), seems to be held by all authorities, except Healy (56), who minimizes rather than denies the importance of the relation.

Goddard and his pupils, on the other hand, have maintained that mental defect among delinquents is very great. Hickson (102), trained in mental testing under Goddard at Vineland, bettered the instruction, leading the field, with the claim that 84 per cent of delinquents are feeble-minded.

Goddard's recent estimates are more conservative than his early ones. In 1911 Goddard and Hill (41) found 52 out of 56 delinquent girls to be feeble-minded. In 1913 Goddard (40) made an estimate of about 50 per cent of criminals feeble-minded and 72 per cent of delinquent girls, and in 1914 he (44) estimated some 25 per cent of the inmates of penitentiaries and reformatories as being feeble-minded.

Hickman (60) finds 75 per cent feeble-minded and reaches the conclusion that "of these 229 boys only 63 will be able to go out and take anything like a normal situation in society."

Haines (52), basing his estimate upon the combined results of the Binet test and the Yerkes-Bridges point scale, concludes that 25 per cent, or probably a little less, of 1,000 minor delinquents tested were feeble-minded.

Pintner (101) finds 46 out of 100 of the delinquents in the Ohio Training School to be feeble-minded. The standard presumably used in the studies quoted by Pintner, Hickman, and Goddard is that an individual is feeble-minded if he tests over three years retarded and has a mental age of less than 12.

Renz (139) found that 79 per cent of the delinquent girls in the Ohio State Reformatory fell below this standard, and that 58 per cent of them were four years or more retarded.

Bridgeman (139) found that 66 per cent of the girls at the Geneva, Ill., Training School for Girls were mentally retarded four years or more.

Barnes (139) studied 100 residivists in the Indiana State Prison, and reports 23 per cent feeble-minded, 10 per cent epileptic, and 17 per cent otherwise mentally abnormal.

Fernald (139) tested 100 inmates of the Massachusetts Reformatory, and found at least 25 per cent feeble-minded.

Davis' (139) report on the first 1,000 cases entered at the New York Reform School for Women at Bedford (1912) states "We have no hesitancy in pronouncing 157 of the total number feeble-minded. There is no question but that a proper mental test would show a much higher percentage of mentally sub-normal."

Williams (141) examined 150 boys at the Whittier School, and found 28 per cent "feeble-minded," 25 per cent "border-line," 22 per cent "dull normal," and 25 per cent normal or above. According to race, 6 per cent of the whites, 48 per cent of the negroes, and 60 per cent of those of Mexican and Indian blood were feeble-minded. The percentage of whites considered feeble-minded is lower than that found by any other investigator known to the writer.

A very general finding is that delinquent girls are mentally more backward than delinquent boys. Otis (97) examined 172 girls in the New Jersey State Home, and found 75 per cent feeble-minded. Pyle (107), expressing his results in terms of a development quotient, found that delinquent girls stand 65 per cent as high as normal girls, and that the standing of the girls was only one-half as good as that of the average sixth grade pupil. On the other hand, the New York Probation and Protective Association (96) reaches the conclusion, by processes which are not explained in sufficient detail to duplicate, that but a small proportion of delinquent girls are feeble-minded.

It has also been found that of the children arraigned in the juvenile court those who are sent on to the reformatories and training schools are the more defective. This probably means that, on the whole, the less defective they are, the less serious are their offenses. Gifford and Goddard (38) examined 100 juvenile court cases, and found 66 per cent four or more years backward. This very large proportion is not found by Bronner (75), who considers less than 10 per cent of 505 children in

the Cook County Detention House to be feeble-minded, and in another article (45) Goddard himself concludes that 25 and not 66 per cent of the children arraigned are feeble-minded.

Bluemel (11) examined probationers, first-offenders, state industrial school boys, and state industrial school girls, and has expressed his results in terms of intelligence quotients. He finds the average I. Q.s for the groups in the order named to be 90, 90, 85, and 76. The greater defectiveness of the girls and the less of the probationers is in entire harmony with other findings. Hill (61) reports that but little defectiveness was shown in a group of 63 delinquent boys in New Orleans.

Tho the probationers and first-offenders are nearly up to the standard, the applicants for parole seem to be decidedly sub-normal; for (139) "of 38 applicants for parole at the Kansas State Penitentiary, only 6 tested normal, 4 others were slightly below normal, while the remaining 28, ranging in age from 23 to 58 years, had an intelligence level of from 7 to 12 years." This condition shows the need of having an expert board, which knows the mental status of its cases, to pass upon release.

Goddard has repeatedly given evidence to show that the standing of a feeble-minded child at one time is highly indicative of his standing at a subsequent time. A follow-up study of delinquents made by the Bureau of Analysis and Investigation of the New York State Board of Charities (15) showed the same situation to be true for border-line cases. Hence a careful examination once made is of lasting value.

A few attempts have been made to analyze mental defects, but the present study demonstrates that delinquents are very much more defective in powers of analysis, inference and deduction than in other mental functions. Fernald (33) found delinquent girls to be particularly poor in concentration, to be easily fatigued, and to be emotionally unstable.

The weight of investigation shows that mental defect is very frequent with delinquents. It also may be said that delinquency is very common with defectives. Kohs (80), after a careful study, estimates that 15 per cent of defectives are in penal and kindred institutions, 30.5 per cent in institutions for

feeble-minded and kindred institutions, and 54.5 per cent at large.

One reason for the difference in the findings for the two sexes is inherent in the definition of feeble-mindedness. Legally, feeble-mindedness is mental defect dating from birth or early age, resulting in inability to look after oneself and belongings with ordinary prudence and *under the conditions of life surrounding the individual*. And since, as the citations show, greater mental defect is, on the average, needed before girls are unable to look after themselves than is required for boys, it would appear to follow that the conditions of life surrounding the two sexes cause the difference. These conditions are more trying for the boy than for the girl. It seems, also, reasonable to believe that they are more trying for the city boy than for the country boy. As a consequence of this social definition, it is very possible to find a child who is feeble-minded in one environment and not so in another.

In estimating that 20 per cent of the boys at Gatesville would better be in a school for the feeble-minded, it was the writer's belief that, under the best conditions likely to maintain outside of institutional life, this number would be unable to look after themselves with sufficient prudence to keep out of trouble and from being menaces to the community.

Probably at least 50 per cent of delinquents are totally incapable of being taught to look after themselves in an environment as unfavorable as the one from which they came. The proper placement of these boys is not secondary even to their proper education in the training school. There is needed a method of placing which gives the boy more than a fair chance to make good, and a parole of such duration, and with such intimate supervision, that the authorities know at every step the progress or back-sliding that is taking place. The delinquent should be placed where his talents and training are utilized and his frailties are not overtaxed. His education before placement should be with a view to develop his special talents. The entire problem is one of vocational and educational guidance. If such guidance is given in the elementary schools for all children, many will never become delinquents.

Modern psychologists, together with modern students of law, such as Mosby (94) and Potts (103) conceive of the criminal and the delinquent as a social misfit who needs the assistance of the State in his proper education—a social misfit who is unable through his own cerebrations to bring about a state of harmony between himself and society, and who, therefore, will remain a misfit unless social agencies guide him aright.

Children in general, but the delinquent in particular, need guidance in the public schools. Hoke (66) gives excellent recommendations for the handling of the retardate in the public schools, and he rationally concludes that “by pursuing such a policy, many wards of the State would be trained to become self-supporting in a community where they are not brought in competition with the normal individual. Leavitt and Brown (84), Greany (48), Bloomfield (9), and Ettinger (31) suggest means whereby the public school may help pupils to choose wisely their life activities. Many studies, including those of Kelley (73) and Hoke (65) have shown the effect of mental backwardness upon elimination from school.

Guidance must not be indifferent to individual interests. Thorndike (128) reports a high degree of permanency in interest and a substantial correlation between interest and ability, and Kelley (72) has given a method for utilizing the manifestation of interest in school guidance. Gayler (37) has shown that inconstancy of purpose goes with elimination from school. He has also shown (36) that the possession of a vocational aim acts as a preventive of crime.

If the public school is not yet alive to the need for exercising guidance, all the more reason for the training school to meet the need in full in its handling of those who are consigned to it. The need of guidance is here more pressing, and, due to parental indifference and State control, the possibility of giving it is much greater than in the public school.

An attempt at such guidance will reveal, first of all, individual idiosyncracies and the need of classification. Witmer (142) has pointed out the value of differentiating, in connection with treatment, between those who are generally mentally defective and those who have one or more defects. Such classification

will quickly lead, as it has in Massachusetts (68), to the establishment of schools, colonies, and homes for the education of defective delinquents segregated from other delinquents. Other lines of demarkation should also be recognized.

At present there is partial segregation of the pre-pubescent from the post-pubescent at Gatesville, tho, due to crowded conditions, this segregation is by no means as complete as is desirable. Still greater refinement of classification along this line is needed. Even in the public schools, where the children do not live and sleep together, Crampton (24) considers that segregation upon this basis should be practiced. The problems of classification, however, are complex, for classification upon the basis of mental age does not at all result in the same grouping as would result from classification upon a chronological or physiological age basis.

Doll (60) finds the correlation between mental age and chronological age for normal children to be 80, but for delinquents to be but 41, showing that a group of delinquents of a given age are not at all homogeneous in terms of their mental age. The intricacy of these problems is further reason why mental examination and classification should be in the hands of a highly qualified and well paid expert board.

Stearns (119) proposes, in view of the large number of cases that is necessary to be handled (in Massachusetts) "that the first mental examination should be made by the probation officers, judges and police officers." Without disparaging their talents in the least, such a procedure would be beyond their qualifications, and would be highly inaccurate and, accordingly, unfortunate. Renz (139) found 58 out of 100 delinquent girls to be feeble-minded, every one of whom had been pronounced as being of sound intellect on the commitment papers signed by court officials.

The just and economical arraignment, trial and handling of youthful offenders is a matter of much concern. Kellogg (75) quotes a number of authorities as urging the necessity of a public defender, primarily in order that the indigent accused may have justice. This would be a valuable reform, not only to insure justice to the indigent, but to prevent the miscarriage

of justice in the case of the wealthy. A few such cases known to the boys at Gatesville are the cause of much bitterness and hatred toward organized society, and it will ever be so until even-handed justice is meted out to the rich and poor alike.

Many others advocate, and many cities have installed psychological laboratories in connection with the juvenile courts. The main argument against their universal installation is that of expense; but the larger cities of the State can surely well afford them. In the hands of intelligent psychologists, they would make for a real understanding of the individual problems presented. Such understanding means charity of view and a realization of the need of education, not punishment. Gatesville should be looked upon as a door to opportunity, and not a place of expiation.

Kite (78) considers punishment to be beneficial and not unjust. Only in case it is discriminatively administered for the committal of anti-social acts which are intentional and are recognized as anti-social by the offender is it both just and corrective; but bestowed for the same acts upon a feeble-minded youth, it is altogether brutal and productive only of hatred and distrust. That there has been much of such punishment in the lives of the subnormal boys at Gatesville is evidenced by their unreasoning fear. More than one of them, when asked to lower his trousers in order that an examination of the genitals could be made, started to cry, thinking that he was going to get a "busting," which is the Gatesville term for thrashing. Such a child is living in perpetual fear. Punishments come for reasons unknown, and result in nothing but greater hatred and fear. The punitive concept is necessary, but chastisement should be administered intelligently. One of the wisest laws on the statute books of Texas is that prohibiting physical punishment of juvenile delinquents, except by the superintendent of the institution or his delegated representative, and in the presence of a nurse or physician. The superintendent is more competent than any one else to determine the need for punishment, but even he has generally taken too little account of the mental status and responsibility of his subject.

Punishment is not the purpose of conviction. "Conviction"

is an unfortunate term. Adjudgment of wrong-doing should be for the purpose of giving an opportunity to learn to live rightly, and punishment should be one of the incidents at times necessary in the learning process. Potts (103) shows the reforms that are needed in our penal system if the concept of rehabilitation of the criminal and delinquent is to supplant that of his punishment.

The present State Juvenile Training School Board (126) realizes the need of reform, and in its report to the Governor "again earnestly urges that the entire juvenile delinquency Act should be amended—or better still, the Act should be wiped out and a new, modern, coherent, and sane law be enacted." The present Act as administered divides responsibility in such a manner that there is conflict of authority, and much actual injustice. It is but a half attempt to establish a treatment of juvenile delinquents upon the ideal of reformation rather than penalization.

Since the law was enacted, there has been much progress in the United States in the efficient and humanitarian treatment of offenders. The law should be revised in such a manner as to put analysis of mental capacity in the hands of people qualified to make it; it should provide for educative processes commensurate with individual differences and needs; it should provide for such length of training as is necessary to accomplish reformation, at least to such an extent as to insure society against the turning loose of individuals who will probably be menace to it; it should provide the means of keeping in touch with those released, and the recall of any slipping back into evil ways, and it should make every provision possible to insure that the administration of the provisions of the Act should be in the hands of competent experts who are at liberty to perform their duties with a single view to the welfare of the State and its wards. The fulfillment of these six conditions would mean more for the moral integrity of all the boys and girls in the State of Texas than any legislation now on the statute books, not excepting the compulsory education law.

If a child is grossly immoral, if he is dangerously brutal, if he is a persistent thief, he is not safe at large, it matters not

whether the cause be insanity, feeble-mindedness or delinquency. The court is the most competent authority in the State to determine whether the child constitutes a real or potential menace and should be removed from society at large, but very incompetent to determine insanity or feeble-mindedness. A small State board of classification and placement, composed of members selected upon the basis of integrity and professional qualification alone, whose compensation would be such as to attract men of talent, and whose tenure of office would be as certain as that of the highest judicial officials of the State, would be competent to determine the institution and kind of training best suited to the various individual cases presented. This board, also, would be the only authority competent to conduct re-examinations and determine fitness for pardon, parole, and final release. Such a board should be composed of three or more, having in its membership a psychologist and educator, a physician and alienist, and a man or woman in intimate touch with the organizations which could be of assistance in the proper placement of those on parole. A board of this nature, with such assistants as might be needed, could act upon every juvenile ward of the State. The orphans, epileptics, deaf, and blind, can be quickly classified, permitting the major attention being given to the cases that constitute the real problem of society, the dull, neurotic or very youthful delinquent, the immoral girl, etc.

Opportunity for an education which will increase the earning power of the individual is needed. It is hard enough for a normal boy to make a living, and a delinquent, being naturally much less capable, needs extra training—trade training and a training in the responsibilities of farming, not simply in wielding a hoe under some overseer's direction.

The indeterminate sentence is absolutely necessary if reformation, not punishment, is the goal. It should, however, be provided that every case shall be taken under advisement by the State Board with a view to parole at certain stated periods. Recommendation to the board for parole at other times might be in the hands of the superintendents of the State institutions.

The problems of parole are mainly those of securing and keeping in available shape regular reports from reliable local

authorities as to the probationer's conduct. Most of this work could be done by the clerical help of the board, and its value lies, primarily, in the effect it would have upon the probationer in making him aware that the helping hand of the State is with him and he is expected to make good. It would have another value in the opportunity offered to check crime in its incipiency and to keep the controlling hand of the State upon possible sources of evil.

The essential function of the Juvenile Training School is that of education. The inadequacy with which it is accomplishing this is patent to one who knows the kind of education these boys need and sees the kind they are getting. First of all, the head of the institution should be an educator, one who knows how to discipline, and how and what to teach, and who is, secondarily, a business man and a farmer.

With the present method of appointment of superintendents, an educator who might happen to be appointed, and who should devote his entire time and energies to the problem of the education and welfare of the boys, would probably soon lose his position; and if a politician is made superintendent, he may be expected, as his past training would dictate, to spend his major energies in keeping his political fences in repair and making a good surface showing. This is not intended as a criticism of any individual—certainly not of the present superintendent. The writer has not visited the school since his administration began, and has no information as to the conduct of the school under the present management. He does know of the educational reforms accomplished and others contemplated by the preceding superintendent. He does know of the larger life of the boys, their greater co-operation and their dawning realization that the school offered opportunities to help them in their life endeavors. It is also well known that appointment in the past has generally not been based upon actual accomplishment and demonstrated talent in handling delinquent boys. To think that the lives, the entire future happiness and success of these unfortunate boys are but a shuttlecock to politics, a thing to be parceled out and bartered in payment of services rendered, with the advent of each new governor, is to contemplate one of the cruel unnecessary tragedies resulting from an abuse of democracy—a tragedy multiplied

many fold and proclaimed by every child who goes wrong and who might have been saved. The present board and the present officials of the school know this. In the last report of the board (126) the commandant is quoted as saying: "Owing to the present system here of appointing superintendents, which necessitates a comparatively short time for each, it is impossible for any one superintendent to work out by experience and observation a proper system of training and school management." Establishing such a system of training is a life work—certainly it is not a two or four-year incident in the life of a man whose interests primarily are in other fields.

Many of the boys have seen two, three, or four superintendents come and go. In such a case, how much possibility is there that the boy will feel that the superintendent takes a paternal interest in him, is really sympathetically concerned with anything he may do? The superintendent generally does not know why the boy is committed, the commitment papers generally giving little or no light upon this point, or the problems of his past; does not know his talents, hopes, and aspirations, or anything he does—unless he breaks a rule—and forgets him in a day when he leaves the gates. The chaplain and others come closer to the boys, and they are generally the ones who manifest whatever paternal concern is shown, but the superintendent should be the greater father and not a *deus ex machina*. He should be the man whose advice is available and is sought by the boys upon the vital matters in their lives. With brief and uncertain tenure, as at present, this is humanly impossible. It is, however, within the power of the people of Texas, the well wishers of these unfortunate and needy children of the State, to make such provision as will insure a qualified educator for superintendent, and a longer tenure of office.

The writer has made an earnest endeavor to explain the delinquent child, and in the light of his nature to suggest an appropriate provision for him. He has not hesitated to attack the problem at its root. He knows these Gatesville boys, and feels their needs; he has sensed their strong and passionate lives; knows their frailties, and at times has caught glimpses of their hopes. These young rascallions are his friends, and he has wished to do them good.

APPENDIX A

TABLE OF ORIGINAL DATA

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
J. R.	8.9	1457	80	82	1.02	510	144	178	.81	0	1	20	25	1	1		3
H. R.	9.5	1315	66	95	1.44	518	141	183	.78	0	1	40	45	?	0	1	1
R. R.	9.5	1356	67	93	1.39	494	136	171	.80	0	1	25	25	0	0		
J. A.	10.5																
S. J.	10.5	1368	81	154	1.90	541	146	188	.78	0	1	23	23	0	1	1	1
R. A.	10.5	1436	62	106	1.71	522	146	179	.82	0	1	27	27	0	?	1	?
H. W.	10.9	1452	84	119	1.42	535	146	181	.81	0	1	23	25	0	?	1	1
M. C.	10.4	1357	65	99	1.52	525	144	178	.81	0	1	20	20	0	1	1	0
M.	10.9	1436	70	120	1.71	511	137	175	.78	0	1	25	25	?	?	1	1
M. C.	10.1	1404	78	134	1.72	552	144	193	.75	0	1	50	40	0	0	1	1
P. G.	10.5	1320	68	80	1.18	540	148	185	.80	0	1	25	25	0	0	1	1
C. W.	10.7	1413	79	110	1.39	517	143	178	.80	0	1	25	25	0	1		1
No. meas.....	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	8
Sums	95.0	11186	587			4247	1154	1457	6.35								
Means	10.6	1398	73.4			531	144	182	.794		1.00						
Medians				114	1.32					00	8x1						
No. with defect														7½	3½	0	1½
% with defect..														94%	58%	0%	19%
C. W.	11.6	1362	76	109	1.43	535	143	185	.77	0	1	20	20	0	1	1	1
H. H.	11.5	1542	78	110	1.41	534	138	190	.73	0	1	20	25	1	1	1	1
H. W.	11.0																
S. D.	11.7	1410	70	110	1.57	504	139	171	.81	0	1	30	30	0	0		1
H. A.	11.5	1497	97	154	1.59	529	144	182	.79	0	1+	25	25	?	1	1	1
M. C.	11.6	1326	64	120	1.88	529	147	180	.82	0	1	23	15	0	1	1	1
M. W.	11.1	1426	90	80	.89	528	142	184	.77	0	1	35	85	0	0	1	1
M. L.	11.8	1432	77	109	1.42	538	145	186	.78	2	1	27	25	0	1	1	1
M. J.	11.3	1391	76	100	1.32	543	148	187	.79	0	1	40	40	1	0	1	1
J. A.	11.1	1426	84	140	1.67	542	153	181	.85	0	1	27	40	?	0	1	1
J. R.	11.5	1399	67	100	1.49	536	139	192	.72	1	1	25	20	0	1		1
No. of meas....	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	10
Sums	125.7	14211	779			5318	1438	1838	7.83								
Means	11.43	1421	77.9			532	144	184	.783		1.03						
Medians				110	1.46					.12	9x1						
No. with defect											1x1+	1	3	7	4	0	
% with defect..													1%	70%	4%	0%	

APPENDIX A

TABLE OF ORIGINAL DATA

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Purpose	Constructive Ability Test					
							Purp. grade	Sym. grade	Interest	Merit	Completion t. mental age	Develop. age
22	15	R	168	1	7.4	House -----	2-	2	B	45	6.7	7.4
16	15	R	163	1	8.2	1. Auto. 2. House-----	3	3	B	†	6.8	7.5
14	15	R	125	1	8.0	1. Wagon. 2. House-----	2 2+	2- 3-	BB	43	6.4	7.4
20	18	R	168	1	7.0	Bridge -----	2-	3	B	39		7.0
25	20	R	155	1	8.4	House -----	3	2-	B	47	10.5	8.6
20	18	R	164	2	10.0	Fort -----	3		B	47	9.3	8.7
8	8	R	152	2	10.6					†	8.7	9.5
22	17	R	140	3	10.8	Dutch windmill-----		2	B	†	8.1	9.6
12	14	R	114	1	9.8	Bandstand -----	3+	3+	B	58	10.0	11.2
22	18	R	156	2	10.8	House -----	3	2-	B	32	7.5	7.8
7	7	7	8	9	8		6	7	7	6	8	9
129	113		1217	16								833
18.4	16.1	0%	152	1.78	10.3		2.75	2.2		46	8.9	9.3
17	17	R	141	3	10.8	Fort -----	3	3+	B	42	8.6	9.3
19	19	R	138	1	7.8	Did not know-----		2	P	40		7.5
18	16	R	141	3	10.6	Church house-----	2	1		57		11.5
25	23	R	197	2	10.4	1. Auto. 2. Station. 3. Cabin	3 3 3	3 3 1	BBB	58		11.5
13	10	R	147	3	10.2	1. Table. 2. House. 3. Soda box stand.	3 3 3	3 3 3	BBB	58	8.7	9.7
21	16	R	166	1	9.0	House -----	0	0	0	†	7.3	7.5
25	31	R	147	2	9.4	House -----	3-	3-	B	38	6.9	7.3
17	17	L	200	5	11.6					†	14.4	14.5
22	20	R	143	1	8.2	Box -----	2+	2-	B	38		7.6
17	15	R	181	1	7.0					†		6.8
10	10	10	10	11	10		7	8		7+1	6	11
194	184		1601	24								
19.4	18.4	1	160	1.27	9.8		2.62	2.5		41	8.6	9.3
		10%										

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
R. P.	12.2	1354	75	62	.83	523	140	179	.78	0	1	22	18	0	1	1	0
S. L.	12.7	146	86	12	1.4	524	14	185	.77	0	1	40	40	0	0	1	1
S. H.	12.0	1383	76	126	1.58	528	139	184	.76	0	1	42	42	0	0	1	1
T. M.	12.2	1465	75	130	1.73	528	146	196	.75	0	1	23	23	0	1	1	1
T. O.	12.6	1483	79	118	1.49	543	140	190	.74	0	1+	27	24	0	1	1	1
W. E.	12.0	1378	77	110	1.43	500	137	170	.81	0	1	20	25	0	0	1	1
W. J.	12.9	1424	81	116	1.43	535	147	184	.80	0	1	32	32	?	0	1	0
M. M.	12.5	1435	75	90	1.20	510	140	180	.78	0	1	22	24	0	1	1	1
F. F.	12.7	1457	97	120	1.24	519	138	181	.76	0	2	24	22	?	1	1	1
H. G.	12.9	1434	87	126	1.45	525	136	184	.74	0	1	22	22	0	1	1	1
J. M.	12.8	1403	76	122	1.60	540	140	194	.72	0	1	25	30	0	0	1	0
L. R.	12.5	1439	81	126	1.56	550	153	188	.81	2	1	20	20	0	0	1	1
L. L.	12.6	1460	89	117	1.31	540	149	188	.79	1	1	20	23	0	1	1	1
M. J.	12.3	1474	86	150	1.74	539	148	188	.79	0	2	24	23	0	1	1	1
P. C.	12.0	1475	85	140	1.65	530	139	194	.72	0	1	40	40	0	0	1	1
P. R.	12.6	1367	70	60	.86	528	144	185	.78	0	1	25	30	1	0	1	1
B. D.	12.2																
J. F.	12.4																
M. W.	12.5	1333	72	30	.42	510	137	175	.78	0	1	27	27	0	?	1	0
M. O.	12.5	1384	74	118	1.59	507	144	174	.83	0	1	27	27	0	?	1	1
P. O.	12.1	1443		120		522	135	181	.75	0	1+	26	26	0	1	1	1
B. R.	12.1	1334	59	90	1.30	519	136	180	.76	0	1	20	25	0	?	1	0
B. R.	12.5	1308	62	96	1.55	520	138	183	.75	1	1	25	25	1	?	1	1
No. of meas...	23	21	20	21	20	20	21	21	21	21	21	20	20	20	21	18	21
Sums	2858	29695	1562			10523	2968	3863	16.17		3x2						
Means	12.42	1411	78.1			526	141	184	.770		1.13						
Medians				118	1.43					.12							
No. with defect														17	9½	0	5½
% with defect...														35%	45%	0%	26%
A. B.	13.2	1460	80	130	1.62	504	134	181	.74	0	1	25	25	0	0	1	1
B. D.	13.9	1444	77	123	1.60	533	142	185	.77	0	1	20	25	0	0	1	1
B. C.	13.5	1501	67	100	1.6	534	150	177	.85	0	1	25	25	0	0	1	1
C. D.	13.0	1607	100	150	1.59	548	151	191	.79	0	1	22	19	0	1	1	1
C. H.	13.2	1598	98	15	1.58	542	142	190	.75	0	1+	10	22	0	?	1	1
D. L.	13.4	1404	75	112	1.49	528	147	183	.80	0	1	12	16	0	1	1	1
E. M.	13.7	1376	84	140	1.70	556	155	188	.82	0	2	28	28	0	0	1	1
E. J.	13.5	1488	85	118	1.39	523	141	181	.78	0	1	24	27	?	1	1	1
G. C.	13.5	1664	101	114	1.13	534	141	187	.75	0	2+	33	30	0	0	1	0
G. R.	13.9	1621	120	160	1.38	540	144	184	.78	1	3	30	35	1	0	1	1
R. G.	13.0	1516	78	90	1.23	523	142	181	.79	0	1	23	28	0	0	1	1
S. L.	13.0	1380	72	70	.97	520	146	182	.80	0	1	30	26	?	?	1	1
S. C.	13.9	1471	77	130	1.69	508	142	177	.80	0	1	20	27	0	1	1	1
Y. A.	13.5	1528	85	15	1.70	528	148	177	.84	0	1+	27	27	0	0	1	1
K. L.	13.0	1473	98	80	.86	531	150	176	.85	0	1+	15	20	1	1	1	1
G. C.	13.6	1446	95	110	1.10	537	145	184	.79	0	1	27	28	0	1	1	1
J. J.	13.3	1630	127	198	1.56	553	148	191	.78	0	3	28	30	?	0	1	1
K. J.	13.3	1518	98	150	1.53	529	143	178	.80	0	1	30	27	?	0	1	1
L. C.	13.0	1572	111	180	1.62	544	149	189	.79	1	2	27	27	0	?	1	1
L. E.	13.2	1500	79	150	1.92	532	139	191	.73	0	2	27	30	0	1	1	1
M. O.	13.0	1384	74	118	1.60	507	144	174	.83	0	1	27	27	0	?	1	1
M. E.	13.5	1577	109	180	1.65	554	147	195	.75	0	3-	22	25	0	1	1	1
N. C.	13.4	1504	84	132	1.57	537	146	188	.78	0	1	25	25	0	1	1	1
C. R.	13.0	1540	97	170	1.75	520	141	184	.77	0	2	30	34	?	0	1	1
P. R.	13.0	1669	97	164	1.69	547	146	188	.78	0	1	24	24	0	1	1	1
W. E.	13.0	1585	101	168	1.66	550	152	191	.80	2	1	27	23	1	1	1	1
R. H.	13.0																
No. of meas...	27	26	26	26	26	26	26	26	26	26	26	26	26	26	26	21	25
Sums	3627	39456	2368			13877	3775	4794	20.51								
Means	13.43	1517	91.0			534	145	184	.790								
Medians				139	1.60					.09							
No. with defect														20½	13	0	1½
% with defect...														79%	50%	0%	6%

TABLE OF ORIGINAL DATA—Continued

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Purpose	Constructive Ability Test			Merit	Completion t. mental age	Develop. age
							Purp. grade	Sym. grade	Interest			
19	16	R	162	3	2.0	Auto -----	3+	3+	B	63	9.6	14.5
22	16	R	186	3	0.6	Wagon -----	3	3	B	45	10.5	9.9
18	15	R	185	2	10.4	-----	—	—	—	†	12.3	9.7
20	16	R	150	3	10.8	Auto -----	2	0	B	†	8.3	8.7
14	14	R	166	3	10.6	Auto -----	3	3	B	53	10.5	10.5
15	14	R	147	1	9.0	Aeroplane -----	3	2	B	54	7.3	8.9
23	21	R	176	3	10.4	-----	—	—	—	†	14.7	12.7
sore	16	R	142	3	10.8	Auto -----	3	3	B	†	—	11.6
27	26	R	190	6	11.6	-----	—	—	—	†	—	14.6
21	17	R	186	4	10.8	Barn with wagon -----	3	3	B	64	8.5	13.0
17	14	R	176	4	11.6	Lion cage -----	3+	3+	B	59	9.1	12.1
18	19	L	157	2	10.2	1.Auto. 2.Windmill. 3.Air-ship.	3+23+	333	B B B	65	8.7	12.7
			159	1	9.0	House and yard -----	3	3	B	†	7.7	8.4
22	20	R	201	5	11.8	-----	—	—	—	†	14.1	15.0
21	22	R	163	3	10.0	1.House. 2.Gate. 3.Flag pole.	222	2-3	B B B	32	8.2	8.2
16	15	R	142	3	9.0	House -----	1+	1	B	35	9.3	8.3
			4	—	None -----	0	—	—	—	†	—	—
			4	—	Fort -----	2	3	B	61	†	14.6	
15	15	R/L	97	0	1.8	No purpose -----	0	0	—	†	—	4.2
21	17	R	173	3	11.0	-----	—	—	—	†	12.3	12.4
19	16	R	162	2	10.2	House -----	2+	2+	B	†	8.6	9.6
12	9	R	162	3	10.6	Fort -----	3+	3	B	59	8.7	10.8
9	8	R	169	1	7.2	1.Park stand. 2.Broken auto	22	22+	B B	39	6.8	6.9
19	20	20	21	23	21		18	17		12+4	18	22
349	326		3451	66								
18.4	16.3		164	2.87								
		1½ 8%										
26	—	R	197	3	11.0	1.Fort. 2.Hay baler -----	3+3	2+3	B B	54	8.3	10.4
12	16	R	166	4	10.0	Barn -----	3	2+	B	40	8.5	8.5
16	13	R	172	5	10.6	1.Table. 2.Platform -----	33	33	B B	†	8.9	10.0
26	26	R	177	3	10.0	-----	—	—	—	†	8.2	9.2
26	21	R	198	3	11.4	Chicken house -----	2	2+	B	50	10.5	11.2
19	18	R	161	3	11.0	House -----	3	3	B	47	8.7	9.7
19	15	R	143	4	11.4	-----	—	—	—	†	8.9	11.4
21	19	R	202	3	11.0	House -----	3	2-	B	50	7.3	9.6
29	27	R	205	1	8.2	-----	—	—	—	†	6.4	9.3
30	28	R	167	1	7.0	-----	—	—	—	†	6.6	6.7
17	16	R	179	2	11.4	Auto -----	3	3	B	67	14.1	15.8
18	16	R	178	3	11.0	Cotton house -----	4	3	B	73	9.3	13.6
18	16	R	215	3	11.2	1.House. 2.Well -----	33	43-	B B	†	12.7	12.8
21	17	R	176	1	8.8	t.Windmill. 2.Wagon -----	33	33	B B	49	7.3	8.4
19	21	R	140	1	6.2	1.Wagon. 2.House -----	32+	22-	B B	44	†	6.8
19	18	R	160	2	10.8	1.House. 2.Barn -----	3-	30	-B	34	8.0	8.6
31	36	L	166	3	10.6	-----	—	—	—	†	8.9	10.0
30	26	R	186	3	11.4	1.Airship. 2.Show window	3	3	B	77	10.0	14.4
33	23	R	174	3	10.6	Cart house -----	2+	2	B	†	9.3	10.2
20	18	R	176	2	9.2	Barn house -----	3+	3	B	†	8.9	9.1
21	17	R	173	3	11.0	Wagon -----	2-	0	B	22	11.2	9.9
35	42	R	228	3	9.8	-----	—	—	—	†	7.9	9.0
26	23	R	172	1	7.4	Windmill—no purpose -----	00	00	—	†	6.7	7.1
25	25	R	171	1	9.0	Piano -----	2	—	B	†	—	9.1
34	27	L	185	5	11.6	Sort of bridge -----	1	1	B	†	13.0	11.6
28	26	R	180	7	11.0	Barn -----	2	2	B	†	—	12.4
			3			House -----	3	2-	B	48	†	8.7
2	2	26	26	27	26		21	20	13+2		23	27
620	550		4647	76								
23.8	22.0		179	2.82								
		2 8%			10.8		2.77	2.5		48	8.9	9.7

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
B. P.	14.4	1569	90	170	1.89	540	140	197	.71	1	1	18	20	0	1	1	1
C. J.	14.4	1560	96	165	1.69	528	146	184	.79	2	3	26	22	0	1	1	1
D. G.	14.0	1512	105	150	1.43	548	149	190	.78	2	1	20	25	1	1	1	1
G. C.	14.7	1640	111	212	1.91	556	150	192	.78	1	3	15	17	0	1	1	1
G. C.	14.4	1694	130	190	1.46	535	140	185	.76	0	3	24	29	0	1	0	1
G. H.	14.5	1405	81	128	1.58	490	146	172	.85	1	3	22	25	1	1	1	1
G. L.	14.0	1564	109	154	1.41	548	146	186	.79	1	1	28	30	0	0	1	1
H. T.	14.3	1680	119	164	1.38	555	143	196	.73	1	2	15	22	1	1	1	1
H. A.	14.2	1671	123	171	1.39	561	151	192	.79	7	3	100	60	0	0	0	1
H. J.	14.1	1557	103	168	1.63	540	141	187	.75	1	2	22	15	0	1	1	1
H. B.	14.2	1654	122	158	1.30	550	149	190	.78	0	3-	25	25	0	?	1	1
J. E.	14.0	1510	90	136	1.51	536	144	183	.77	3	1+	20	18	0	?	1	1
L. C.	14.6	1615	125	196	1.57	540	146	187	.78	2	2	18	24	1	1	1	1
L. J.	14.1	1566	106	144	1.36	544	144	193	.75	1	2	30	20	1	?	1	1
L. A.	14.5	1627	107	176	1.64	548	155	184	.84	2	2	20	27	0	0	1	1
P. M.	14.7	1580	105	150	1.43	548	147	202	.73	1	3	22	25	1	1	0	1
R. F.	14.9	1664	136	222	1.63	525	148	177	.84	2	3	25	20	0	1	1	1
S. B.	14.7	1728	135	269	1.96	542	141	188	.75	0	3	100	100	0	0	0	1
T. V.	14.3	1580	106	184	1.74	557	152	195	.78	2	1+	28	28	1	1	1	1
U. W.	14.3	1650	96	150	1.56	536	147	187	.79	0	3-	35	40	0	0	0	1
V. F.	14.4	1561	97	125	1.29	548	148	190	.78	2	1	25	25	0	1	1	1
V. R.	14.4	1544	101	118	1.17	520	140	180	.78	6	2-	25	27	1	1	1	1
A. J.	14.7	1437	74	97	1.31	520	138	178	.78	0	1	23	27	0	0	1	0
B. J.	14.7	1593	102	179	1.67	545	145	191	.76	0	2	20	22	0	1	1	0
B. B.	14.5	1649	122	190	1.56	553	148	193	.77	0	3-	40	40	?	0	1	0
B. L.	14.2	1542	95	141	1.48	539	151	184	.82	0	1	25	34	?	0	1	1
B. N.	14.8	1585	98	170	1.74	569	149	201	.74	1	2	24	22	0	1	1	1
B. V.	14.6	1536	89	148	1.66	539	142	189	.75	1	1	35	35	0	0	1	1
C. A.	14.8	1687	134	180	1.34	568	147	192	.77	0	3	25	25	1	1	1	1
C. S.	14.1	1441	72	132	1.83	539	141	190	.74	0	1	24	24	0	0	1	1
D. F.	14.7	1439	75	120	1.60	528	143	184	.78	0	1	25	25	?	1	1	1
E. W.	14.2	1530	91	118	1.30	561	149	196	.76	0	1	15	22	0	1	1	1
H. J.	14.9	1628	116	150	1.29	552	147	188	.78	1	2+	32	40	0	0	1	1
K. D.	14.1	1520	90	166	1.84	541	144	184	.78	0	1	28	28	0	?	1	1
M. J.	14.3	1549	96	151	1.57	537	146	184	.79	0	2	30	32	0	0	1	1
M.	14.3	1380	81	114	1.41	541	145	187	.78	0	1	18	20	?	1	1	0
P. L.	14.2	1518	96	171	1.78	547	143	193	.74	0	1+	20	25	0	1	1	1
P. H.	14.2	1628	104	160	1.54	558	152	192	.79	0	1	27	22	0	1	1	1
R. O.	14.3	1600	95	158	1.66	535	151	186	.81	0	1	26	27	0	0	1	1
R. J.	14.5	1526	95	128	1.35	531	136	187	.73	0	1+	18	16	0	0	1	1
S. H.	14.9	1551	114	151	1.32	535	147	187	.79	0	2	17	20	0	1	1	1
S. L.	14.6	1576	108	172	1.59	526	143	179	.80	0	2	20	27	0	1	1	1
S. W.	14.0	1478	76	130	1.71	522	144	181	.80	0	1	25	25	0	0	1	1
S. E.	14.8	1566	91	158	1.74	527	141	182	.78	0	2	25	22	0	?	1	1
S. R.	14.1	1525	99	134	1.35	560	143	196	.73	0	1	30	30	0	0	1	1
S. B.	14.0	1436	77	136	1.77	549	147	187	.79	0	1	15	30	?	0	1	1
T. R.	14.1	1560	91	161	1.77	538	140	189	.74	0	2	18	13	0	1	1	1
W. R.	14.8	1534	103	120	1.16	544	151	185	.82	0	2	25	30	0	1	1	1
S. R.	14.9	1542	91	160	1.76	562	141	201	.70	0	1+	25	27	0	?	1	1
W. G.	14.2	1639	114	168	1.47	567	152	196	.78	0	2+	32	35	0	0	1	1
E. O.	14.0	1508	93	136	1.46	559	155	191	.81	1	1	25	30	0	?	0	1
V. F.	14.5	1548	95	124	1.31	548	145	183	.77	1	1	30	30	?	?	1	1
J. E.	14.7	1545	103	156	1.51	530	148	182	.81	0	2	25	30	?	?	1	1
No. of meas....	53	53	53	53	53	53	53	53	53	53	53	53	53	52	53	50	50
Sums	7638	82927	5373		28774	7727	9965	41.09									
Means	4.41	1565	101.3		543	146	188	.775		.85							
Medians				156	1.56												
No. with defect														40%	22%	7	4
% with defect..														76%	42%	14%	8%

TABLE OF ORIGINAL DATA—Continued

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Constructive Ability Test				Merit	Completion t. mental age	Develop. age
						Purpose	Purp. grade	Sym. grade	Interest			
26	23	L	210	4	11.8	Wagon				57	13.6	
30	27	R	215	4	12.0	Wagon	4	4	B	48	12.4	
30	30	R	168	5	11.2	Auto truck	2	2	B	52	11.4	
39	33	R	212	5	11.8	Nothing accomplished				†	12.2	
39	35	R	197	7	10.6	House	2	1	B	†	11.0	
20	21	R	156	7	11.8	1. Yard. 2. House	3	2	B	35	11.1	
36	35	R	200	2	9.4	1. House. 2. Wagon	0 5	— 3	— B	63	13.6	
33	39	R	210	5	11.2	1. Wagon. 2. Wagon	3 2	3 3	B B	47	11.1	
40	35	R	197	2	8.6	Wagon	5	5	B	61	11.6	
29	27	R	182	3	11.4	1. Wagon. 2. Derrick. 3. Wagon.	5 — 4	4 — —	B — B	54	8.9 11.0	
25	22	L	176	2	11.2	Wagon	3	4	B	57	12.2	
24	10	R	179	5	11.4	1. Drill. 2. Steeple. 3. Boat	2 2+ 3	3 2 2+	B B B	56	10.5 11.8	
31	26	R	174	7	11.2	House	2	2	B	43	10.4	
32	31	R	186	1	10.4	Wagon	5	5	B	58	11.4	
33	28	R	221	7	12.0	1. Box. 2. Train wrecker	3 3	3 3	B B	58	12.3 13.4	
23	22	R	185	11.8	No purpose	†	3	3	B	†	14.7 13.1	
46	35	R	192	4	11.0	1. House. 2. Wagon	—	—	B	48	9.1 10.1	
39	34	R	169	2	9.6	1. House. 2. Wagon	2 4	0 5	— B	57	7.6 9.6	
32	52	R/L	191	7	11.4	Buggy	3	1	B	59	13.2	
24	26	L	183	3	11.8	House	3	2	B	43	11.8	
23	19	R	201	4	12.0	Drill. 2. Wagon	4 4	3 3	B B	71	18.0	
25	27	L	202	3	10.8	Wagon	4	4	B	38	9.2	
18	17	R	165	4	10.6	House	2	2+	B	44	8.2 9.0	
24	21	R	191	3	9.4	Castle	2	2	B— Poor	†	8.7 9.0	
39	32	R	170	2	10.6					†	7.6 9.3	
28	24	R	159	6	10.8	Wagon	2	3	B	†	9.6 9.8	
30	25	R	176	6	11.4	Bridge	1	2	B	†	13.0 11.9	
25	24	R	180	6	11.6	Belfry	3	3	B	†	13.3 14.0	
35	33	R	182	3	9.2					†	8.2 8.8	
22	17	L	185	5	11.0	House	0	0	—	†	12.3 11.7	
16	15	L	162	6	11.4					†	13.6 13.7	
21	23	R	160	7	11.2	House	3+	3	B	†	10.5 11.8	
38	34	R	184	3	11.0					†	9.1 10.8	
26	—	R	191	3	11.8					†	12.3 14.0	
24	20	R	187	7	10.8					†	9.6 10.6	
17	18	R	157	4	11.4	Auto	2	2+	B	58	14.7 12.8	
28	22	R	154	6	11.6	House	3	3	B	57	12.7 12.9	
25	25	L	141	4	11.4					†	8.9 11.4	
22	21	R	184	7	11.8	Windmill	3	2	B	65	79.4 18.6	
30	26	R	172	5	10.4					†	13.6 12.2	
32	30	R	186	3	11.0	House	1	2	Little	29	9.6 9.3	
29	25	R	202	4	10.8					†	12.7 12.2	
21	19	R	198	1	9.2					†	7.3 8.3	
28	27	R	192	4	11.8					†	13.9 14.8	
24	21	R	178	4	11.2	Fort	3+	3+	B	64	69.2 17.7	
19	17	R	226	2	10.0	Aeroplane	3	3	B	63	6.6 12.2	
		R	4	9.6	Castle	3	3	B	45	12.3 10.0		
26	24	R	178	4	11.8					†	16.7 16.2	
17	22	L	169	3	9.6	1. Steel. 2. Auto. 3. House	2 3 3	+ + 3 2+	B B B	†	9.8	
32	31	R	230	7	11.4					†	13.8	
26	22	R	185	3	11.0	Gate	3+	3	B	72	10.0 14.1	
23	22	R	211	2	11.2					†	13.0	
31	30	L	186	4	11.0					†	12.4	
32	51	53	52	52	53		34	34		28+6	34 53	
1455	1329		9647	221								
28.0	26.1		186	4.25								
		9 1/2			11.2		2.93	2.76		52	11.4 11.8	
		16%										

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astigm.	Vision	Hearing	Nose and Throat
B. A.	15.9	1609	121	236	1.95	53	147	179	.82	1	3	20	18	1	1	1	1
C. R.	15.4	1690	123	191	1.55	543	145	194	.75	1	2+	27	27	1	1	1	1
O. P.	15.4	1597	101	160	1.58	557	141	196	.71	2	1+	25	25	1	1	1	1
G. F.	15.5	1672	124	226	1.82	547	141	191	.74	1	3-	25	25	1	1	1	1
G. R.	15.8	1734	126	226	1.79	53	155	178	.87	0	3	30	20	0	0	1	1
D. H.	15.2	1577	103	196	1.90	555	147	197	.75	0	3	30	20	0	0	1	1
D. C.	15.4	1670	135	229	1.70	565	148	199	.74	0	3	15	25	?	1	1	1
D. E.	15.9	1617	102	121	1.19	543	142	189	.75	2	1	20	22	1	1	1	1
D. L.	15.1	1706	128	224	1.75	558	149	195	.76	7	3	20	20	?	1	1	1
E. C.	15.1	1729	128	236	1.84	569	147	200	.74	2	3	32	40	0	0	1	1
F. A.	15.2	1695	125	81	.65	538	144	188	.77	2	3	28	40	0	0	1	1
G. J.	15.1	1673	12	224	1.79	56	154	193	.80	0	2	15	90	0	0	1	1
N. A.	15.5	1653	124	185	1.49	558	150	196	.77	2	2+	26	80	0	0	1	1
H. C.	15.8	1693	127	20	1.69	544	141	190	.74	2	3	23	27	0	?	1	1
M. P.	15.6	1680	148	242	1.64	558	154	192	.80	3	3	23	23	1	1	1	1
M. P.	15.1	1513	87	13	1.49	537	146	190	.77	2	3	12	12	1	1	1	1
M. J.	15.2	1670	117	180	1.54	542	144	187	.77	1	2	30	28	0	0	1	1
M. E.	15.1	1693	130	210	1.62	568	151	191	.81	1	3-	18	15	1	1	1	1
M. C.	15.2	1661	112	196	1.75	520	139	185	.75	1	3	20	17	1	1	1	1
O. S.	15.9	1710	131	248	1.89	550	150	185	.81	1	3	25	25	0	0	1	1
S. W.	15.3	1710	138	236	1.71	582	149	205	.73	2	3	20	22	?	1	1	1
S. M.	15.4	1710	137	198	1.45	542	146	187	.78	1	3	24	24	1	1	0	1
S. H.	15.6	1770	156	282	1.31	573	156	196	.80	2	3	15	23	0	1	1	1
T. B.	15.7	1674	134	22	1.64	561	147	193	.76	0	3	16	30	0	1	1	1
W. D.	15.8	1701	129	240	1.86	572	152	198	.77	0	3	28	blind	0	0	1	1
W. A.	15.7	1734	124	—	—	545	147	189	.78	2	3-	25	20	1	1	1	1
A. R.	15.2	1484	—	148	—	519	134	177	.76	0	1+	22	27	?	1	1	1
A. M.	15.4	1603	99	206	2.08	—	136	183	.74	0	2	23	25	0	1	1	1
A. F.	15.1	1546	97	128	1.32	539	151	186	.82	0	2	25	28	0	0	1	1
B. J.	15.1	1467	86	118	1.37	544	147	189	.78	0	2-	25	25	0	1	1	1
B. T.	15.0	1523	93	14	1.59	548	146	182	.80	0	1	25	30	0	1	1	1
G. A.	15.1	1601	109	153	1.40	530	142	183	.78	0	3-	27	25	0	1	1	1
G. A.	15.0	1668	117	191	1.63	539	145	184	.79	0	3-	27	27	0	1	1	1
C. B.	15.9	1502	87	100	1.15	513	144	173	.83	0	1	27	22	0	1	1	?
D. W.	15.2	1634	127	206	1.62	547	148	188	.79	0	3	27	27	?	1	1	1
F. C.	15.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
F. H.	15.7	1723	124	206	1.66	543	143	186	.77	1	3-	23	23	0	?	1	1
G. E.	15.1	1589	108	150	1.39	552	148	191	.78	0	2	23	23	0	1	1	1
H. H.	15.5	1628	110	176	1.60	536	146	188	.78	0	1	25	25	0	1	1	1
K. E.	15.3	1684	118	184	1.56	562	146	197	.74	0	3-	27	27	0	1	1	1
L. C.	15.7	1578	101	142	1.41	528	143	182	.79	0	2	23	27	0	1	1	1
L. R.	15.1	1512	92	146	1.59	539	141	189	.75	0	2-	21	25	0	0	1	1
M. E.	15.1	1512	100	162	1.62	544	—	187	—	0	1+	28	28	0	?	1	1
N. L.	15.2	1558	105	196	1.87	526	148	177	.84	0	3	26	26	0	0	1	1
P. J.	15.5	1667	114	194	1.70	552	148	189	.78	1	3-	26	28	0	1	1	1
P. L.	15.9	1617	108	170	1.57	549	144	189	.76	0	2	25	23	0	?	1	1
P. C.	15.0	1691	130	170	1.31	538	144	187	.77	1	3-	28	28	0	1	1	1
P. O.	15.6	1637	116	190	1.64	548	146	194	.75	0	2	28	28	0	1	1	1
R. E.	15.0	1542	100	154	1.54	507	142	189	.75	0	3	30	30	0	0	1	1
R. C.	15.8	1646	123	218	1.77	562	148	192	.77	0	3	25	24	0	1	1	1
S. E.	15.3	1584	114	180	1.58	526	143	179	.80	0	3	25	25	?	1	1	1
B. N.	15.9	1633	117	180	1.54	534	146	186	.79	0	3	20	25	1	1	1	1
C. C.	15.2	1550	106	170	1.60	556	149	188	.79	0	3	27	25	0	1	1	1
No. meas.	53	52	51	51	50	51	51	52	51	52	52	52	51	51	51	52	51
Sums	8165	84926	5931	—	—	27916	7455	9821	39.54	—	—	—	—	—	—	—	—
Means	1541	1633	116.2	—	—	548	146	188	.775	—	2.46	0	0	—	—	—	—
Medians	—	—	—	191	1.62	—	—	—	—	.40	—	5	7	—	—	—	—
No. with defect	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% with defect	—	—	—	—	—	—	—	—	—	—	—	—	—	37½	12½	1	½
	—	—	—	—	—	—	—	—	—	—	—	—	—	74%	24%	2%	1%

TABLE OF ORIGINAL DATA—Continued

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Constructive Ability Test				Merit	Completion t. mental age	Develop. age	
						Purpose	Purp. grade	Sym. grade	Interest				
39	36	R	202	4	12.0	House	5	5	4	B	47	12.2	
44	42	RE	178	6	11.0	1. Wagon. 2. Car. 3. Station	5	5	5	5	BB	60	10.5
24	24	R	191	7	11.8	House	2	2	3	B	21	10.5	
40	30	R	180	6	11.4	Wagon	3	3	3	B	52	15.7	
38	37	R	185	3	11.4	1. Wagon. 2. Swing	4	5	4	5	BB	46	9.6
28	22	R	210	6	12.0	Engine	3	3	3	B	62	8.9	
40	37	R	166	4	11.6	Wagon	3	3	—	B	42	11.1	
25	25	R	185	3	9.8	1. Auto. 2. House	4	5	5	4	—	65	15.0
47	41	R	210	6	11.6	1. Engine. 2. House	3	3	3	3	BB	62	14.7
42	46	R	190	6	11.8	House	2	2	1	B	29	10.9	
28	22	R	157	1	8.4	Wagon	—	—	—	—	†	6.7	7.6
40	39	R	151	4	11.2	1. Wheelbarrow. 2. Wagon	0	4	0	4	BB	45	11.9
33	33	R	205	5	11.6	Airship	3	3	4	B	94	14.7	
35	32	R	218	4	11.4	Wagon	5	5	5	B	58	9.6	
45	37	R	155	4	9.2	Wagon	4	4	3	B	37	8.0	
27	22	R	225	3	12.0	1. Wagon. 2. Trapeze. 3. Table	5	5	5	1	BBB	47	9.3
34	26	R	179	5	11.2	Chicken house	3	3	3	B	48	10.8	
35	35	R	193	5	10.8	House	3	3	2	B	55	13.0	
33	30	R	205	5	12.0	Aeroplane	4	4	3	B	79	18.0	
39	35	R	172	2	10.8	Wagon	1	1	3	P	40	9.4	
45	43	R	200	4	11.6	Barn	3	3	3	B	49	17.3	
36	25	R	180	4	11.6	Box	2	2	2	B	32	9.6	
52	43	R	212	7	12.0		0	0	0	P	51	15.0	
36	41	L	190	4	11.8	1. Cotton float 2. Barn	3	3	3	2	BB	59	8.3
47	43	R	215	3	11.8	Wagon	2	2	2	B	46	11.9	
39	31	R	177	7	11.0	Writing desk	2	2	2	B	57	12.0	
19	20	R	170	3	11.8	House	3	3	2	B	35	11.2	
29	26	R	197	6	11.4	Barn	3	3	3	B	55	13.6	
29	29	R	190	6	11.0	Play tower	3	3	3	B	39	13.0	
22	21	R	196	6	11.2	Animal cage	2	2	2	P	†	10.0	10.7
24	26	R	202	5	11.2						9.1	11.0	
29	32	R	224	4	10.8	House	1	0	0	0	†	8.6	9.8
37	34	R	238	3	10.4	Wagon	2	3	—	B	49	8.6	9.4
18	15	R	157	1	8.0	Auto house	3+	3	3	B	47	6.9	7.8
48	37	R	184	4	11.6						†	13.0	13.8
					11.2						†	10.5	11.8
37	31	R	179	7	11.8						†	13.6	14.7
28	24	R	198	6	12.0						†	16.7	16.4
31	30	R		5	10.2						†	9.6	10.0
21	26		186	3	9.4						8.2	8.8	
31	27	R	184	6	12.0						16.7	16.4	
22	23	R	172	4	11.8	House	2	3	—	B	†	57.5	17.9
29	23	R	171	3	11.4	Sled	3	3	—	B	†	8.0	10.9
30	29	R	182	3	9.8	House	3	2+	—	B	43	8.5	8.8
41	41	R	176	6	11.8	Ship	3+	3	—	B	46	15.7	13.3
35	34	R	208	4	11.2						†	10.5	11.8
41	35	R	186	2	10.6						†	8.5	9.8
—	31	R	238	7	11.4						†	15.7	14.8
29	24	R	190	3	10.4						†	10.0	10.4
32	34	R	190	5	10.2						†	57.5	15.2
34	33	R	200	5	12.0	Aeroplane	2	—	0	B	†	15.0	13.4
38	37	R	181	6	11.4						†	15.7	14.8
25	23	R	196	4	11.8						†	12.3	14.0
51	52	51	51	52	53		37	35			32+3	44	53
1725	1622		9726	235									
33.8	31.2		191	4.52			2.84	2.91			47	10.3	
		1			11.4								
		2%											

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
B. F.	16.3	1709	147	284	1.93	580	154	204	.76	1	3	23	26	1	1	1	1
B. R.	16.5	1625	113	169	1.50	528	141	187	.76	2	3	27	27	0	0	1	1
B. H.	16.0	1656	112	201	1.79	535	140	186	.75	2	3	27	40	0	0	0	1
B. R.	16.1	1631	105	164	1.52	547	147	190	.75	0	3	32	33	?	?	0	1
B. D.	16.9	1740	130	240	1.85	538	149	181	.82	0	3	30	28	1	?	1	1
C. F.	16.5	1660	125	208	1.66	550	147	188	.78	0	3	27	24	1	1	1	1
C. G.	16.8	1759	133	222	1.67	529	147	180	.82	1	3	30	25	0	?	?	0
C. E.	16.0	1675	125	238	1.90	540	152	182	.84	2	3	25	25	0	0	1	1
D. J.	16.9	1686	140	223	1.59	578	154	200	.77	4	3	30	28	0	0	1	1
D. F.	16.0	1674	135	18	1.39	547	142	190	.75	2	3	15	17	0	?	?	1
G. H.	16.6	1770	138	274	1.98	576	153	204	.75	0	3	20	23	0	1	1	1
G. S.	16.5	1708	147	222	1.51	530	157	192	.82	2	3	22	20	?	?	1	1
G. H.	16.2	1644	102	194	1.90	558	152	189	.80	1	3	25	25	0	0	0	1
H. W.	16.2	1830	147	276	1.85	561	147	201	.73	2	3	25	23	1	1	1	1
H. S.	16.5	1740	131	216	1.65	529	138	186	.74	1	3	20	20	?	?	1	1
J. O.	16.6	1676	133	186	1.40	535	151	178	.85	2	3	34	40	0	0	1	1
J. C.	16.8	1649	135	190	1.41	550	155	187	.83	1	3	27	35	1	0	?	?
J. P.	16.0	1758	147	300	2.04	564	143	197	.74	1	3	24	20	0	1	1	1
L. T.	16.9	1764	148	286	1.93	556	149	193	.77	0	3	24	18	0	1	1	1
L. F.	16.4	1658	123	230	1.87	573	154	197	.78	2	3	17	12	1	1	1	1
M. W.	16.4	1682	109	139	1.28	532	144	184	.78	2	3	60	20	0	0	0	1
M. R.	16.0	1507	102	179	1.77	529	142	185	.77	0	2+	23	20	?	?	1	1
M. W.	16.5	1728	139	230	1.65	538	155	187	.83	1	3	26	25	0	1	1	?
M. D.	16.4	1571	128	214	1.67	558	154	191	.81	5	3	20	20	?	?	1	1
N. B.	16.0	1808	156	262	1.68	580	150	206	.73	1	2+	22	24	0	1	1	1
N. L.	16.4	1627	105	166	1.58	544	147	187	.79	1	2	18	200	0	0	1	1
P. J.	16.5	1675	128	194	1.52	550	154	185	.83	1	3	15	15	1	1	1	1
P. V.	16.0	1715	130	200	1.54	551	151	190	.80	0	3	28	25	0	?	?	?
P. R.	16.2	1725	149	202	1.36	569	156	196	.80	0	2+	26	30	0	1	1	1
P. A.	16.5	1800	144	229	1.59	546	140	187	.75	0	3	25	30	?	?	1	1
P. C.	16.7	1822	161	249	1.55	550	156	195	.80	1	3	25	27	1	1	0	1
R. R.	16.7	1767	136	239	1.76	562	147	193	.76	0	3	bl.	20	1	1	1	1
S. H.	16.3	1765	157	222	1.47	563	149	192	.78	0	3	32	25	0	0	1	1
S. H.	16.5	1697	121	234	1.93	559	143	190	.75	0	3	27	30	1	?	?	1
W. E.	16.7	1733	133	227	1.71	545	155	179	.87	0	3	28	bl.	0	0	0	1
B. L.	16.5	1662	116	177	1.48	538	152	182	.84	0	3	35	50	0	0	1	1
B. F.	16.3	1709	133	231	1.74	576	158	187	.85	1	3	2	29	?	?	1	1
B. J.	16.8	1712	127	208	1.64	557	142	194	.73	0	3	2	25	0	1	1	1
D. M.	16.2	1593	113	180	1.59	532	146	184	.79	0	3	30	25	0	1	1	1
F. J.	16.1	1607	120	187	1.57	536	148	190	.78	0	3	17	27	0	0	1	1
F. H.	16.3	1627	120	180	1.50	537	138	184	.75	0	3	27	27	1	0	1	1
G. C.	16.1	1548	83	164	1.98	537	146	188	.78	?	2-	18	17	?	?	1	1
M. J.	16.1	1728	137	140	1.02	546	143	189	.76	0	3	29	30	0	?	?	0
M. O.	16.2	1745	134	255	1.90	563	150	194	.77	1	3	23	25	1	1	1	1
P. O.	16.2	1561	105	160	1.52	554	148	191	.78	0	1+	18	20	1	1	1	1
R. C.	16.4	1561	100	170	1.70	539	141	187	.75	0	2	27	27	0	1	1	1
R. R.	16.3	1650	146	197	1.35	587	153	203	.75	0	3	35	35	0	0	1	1
S. C.	16.8	1737	155	218	1.41	544	149	183	.81	1	3	25	25	0	1	1	1
S. E.	16.3	1707	121	188	1.55	538	142	186	.76	1	3	30	30	0	?	?	1
W. G.	16.0	1650	145	259	1.72	567	147	194	.76	0	3	28	28	?	?	1	1
W. W.	16.7	1736	144	188	1.31	562	152	187	.81	0	3	28	28	?	?	1	1
H. A.	16.9	1647	121	208	1.72	536	138	188	.73	1	3	24	27	0	0	1	1
H. D.	16.6	1646	115	192	1.67	542	150	183	.82	0	2	30	30	0	0	1	1
B. W.	16.3	1687	145	196	1.35	568	151	194	.78	1	3	17	19	1	1	1	1
No. of meas.	54	54	54	54	54	54	54	54	54	54	54	53	52	54	53	51	50
Sums	8556	91234	6999		29752	8008	10247	42.26									
Means	16.40	1690	129.6		551	148	190	.782			2.80						
Medians				208	1.64				.62								
No. with defect																	
% with defect																	

TABLE OF ORIGINAL DATA—Continued

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Constructive Ability Test				Completion t. mental age	Develop. age		
						Purpose	Purp. grade	Sym. grade	Interest			Merit	
45	42	L	156	5	11.4	1. House. 2. Telephone.	2 1	2 —	P —	57	8.0	11.1	
29	29	R	176	1	8.4	1. Box. 2. House. 3. Wag. 4. Church.	3 3 — 4	2 2 — 2	B B — B	†	6.6	7.5	
32	30	R	185	2	11.2	1. Wagon. 2. Hog pen.	— 2	— 2	— B	38		10.0	
32	31	R	158	3	11.4	1. Chair. 2. Cart.	3 4	— 5	B B	63		15.8	
40	42	R	220	6	12.0	Said could do nothing.				†		13.9	
36	34	L	185	6	12.0	No purpose.	†	†	†	†	13.0	13.3	
44	39	R	175	4	10.2	Wagon.	4	4	B	58		11.2	
30	30	R	183	3	11.0	1. Wagon. 2. Wheelbarrow.	5 5	5 5	B B	62		14.2	
60	58	R	225	5	11.6	House.	2	2	B	62	13.0	14.5	
44	53	L	188	5	11.8	2. Depot. 2. Show wagon.	4 3	3 3	B B	64	15.0	16.9	
45	41	R	182	6	12.0	1. Wagon. 2. Bridge.	2	2	B	39	16.7	13.4	
51	51	R	200	5	11.4	1. Wagon. 2. House on wheels.	3	3	B	42	11.9	11.1	
29	28	R	192	5	12.0	1. Wagon. 2. Table.	3 3	3 3	B B	44	16.2	13.4	
54	51	R	166	7	11.8	Nothing accomplished.				†		13.0	
42	40	R	175	4	11.2	Wagon.	0	0	P	4	11.2	10.1	
38	39	R	201	5	11.8	Building with elevator.	3	3	B	66	7.9	14.6	
35	37	R	154	2	9.8	1. House. 2. Wagon. 3. House.	0 0 0	— 3 0	B 0 0	46		9.2	
45	45	R	181	5	12.0	Wagon.	3	3	B	56	14.7	13.9	
49	47	R	177	5	11.2	Wagon.	3	2	B	†	8.7	10.8	
none	40		176	5	12.0	Coal shed.	4	3	B	45		12.2	
28	22	R	151	4	11.4	Box.	1	1	P	31	13.6	11.1	
31	29	R	169	3	11.4	1. Wagon. 2. Table.	4 3	3 2	B B	38	10.5	10.4	
48	49		200	3	10.2	Wagon.	2	1	B/P	36	7.0	8.0	
47	42	R	239	5	11.4	1. Coal chute. 2. Derrick.	1 1	1 1	—	†	11.9	12.0	
35	37	L	186	5	11.4	Cart.	3	3	B	61	15.3	14.6	
32	32	R	150	5	11.6	Wagon.	3	2	B	53	57.5	14.9	
39	30	R	215	5	12.0	Stone hauling wagon.	3	3	B	64	13.3	16.6	
44	40	R	196	5	12.0	House.	2	3	B	†	17.3	16.8	
34	36	R	198	2	9.6	Wagon.	5	5	B	63	8.7	12.1	
44	45	L	182	2	10.2	1. House. 2. Wagon.	1 5	— 5	— B	54	7.8	9.6	
37	32	R	177	4	11.2	Wagon.	4	4	B	54	10.5	11.5	
43	42	R/L	177	1	9.0	Wagon.	4	3	B	60	6.8	9.8	
52	41	R	194	6	11.6	1. Airship. 2. Barn.	2	1	B	41	16.2	12.7	
41	36	R	198	7	12.0	Wagon.	2	3	B	55		13.6	
45	41	R	183	3	11.4	House.	3	0	P	32	11.2	10.3	
29	27	R	202	5	11.2					†	11.2	12.1	
47	49	R	188	2	11.2						8.9	11.0	
35	30	R	194	6	11.0						8.6	10.5	
34	29	R	200	5	11.2						†	8.6	10.8
36	32	R	197	3	11.6	House.	3+	2+	B	38	12.7	11.4	
38	37	R	234	7	11.8						†	11.9	13.8
23	23	R	236	7	12.0						69.3	18.0	
38	34	R	190	3	10.8	Windmill.	3—	2+	B	53	10.0	10.5	
40	40	R	189	7	10.4						†	83.4	15.4
33	31	R	190	7	12.0						†	74.5	18.1
28	26	R	252	6	11.6	1. Derrick. 2. Engine. 3. Aeroplane.	4 4 4	4 4 4	B B B+	93	15.7	16.8	
42	46	L	195	5	12.0						†	74.5	18.2
42	42	L	165	3	10.0						†	8.9	9.6
30	28	R	188	1	8.8						†	6.9	7.9
40	41	L	182	2	9.6						†	10.0	9.9
46	43	R	212	5	11.8						†	87.1	17.9
46	50	R	220	7	12.0						†	16.7	16.8
35	30	R	190	5	11.6						†	14.7	14.6
50	43	R	221	5	11.8						†		15.8
53	54	52	53	54	54		36	36		31+4	44	54	
2092	2042		10,138	240									
39,5	37.8		191	4.44									
		8½ 16%			11.4		3.00	2.71		53	11.9	12.4	

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
D. J.	17.4	1778	135	242	1.79	536	138	187	.74	1	3	25	25	0	1	1	1
H. O.	17.4	1715	140	240	1.71	558	148	196	.76	1	3	28	25	0	1	1	1
O. F.	17.3	1754	143	224	1.57	553	148	184	.80	1	3	30	34	0	1	1	1
A. R.	17.1	1826	171			579				2	3	28	20	0	0	1	1
B. R.	17.0	1544	92	176	1.91	535	147	184	.80	1	3	22	25	0	0	0	1
B. W.	17.2	1700	151	248	1.64	573	149	204	.73	1	3	26	26	0	1	1	1
B. V.	17.3	1740	123	204	1.66	548	142	192	.74	1	3	40	45	0	1	1	1
B. C.	17.0	1717	152	232	1.53	548	147	187	.79	5	3	22	27	0	0	1	1
C. D.	17.7	1710	130	208	1.60	549	151	185	.82	0	3	25	26	0	1	1	1
C. E.	17.0	1766	138	240	1.74	557	152	189	.80	0	3	15	20	0	1	1	1
D. C.	17.1	1725	134	236	1.76	551	141	190	.74	0	3	25	25	0	0	1	1
D. L.	17.0	1758	156	250	1.60	585	156	203	.77	0	3	22	25	1	1	0	1
G. T.	17.0	1793	143	256	1.79	570	154	195	.79	1	3	24	22	0	1	1	1
G. O.	17.0	1740	142	244	1.72	554	148	191	.78	0	3	25	24	0	1	1	1
F. R.	17.1	1823	156	280	1.33	550	147	195	.75	0	3	24	27	1	1	0	1
H. W.	17.8	1726	118	252	2.14	540	148	187	.79	1	3	14	25	0	0	0	1
H. V.	17.0	1740	142	240	1.69	558	148	196	.76	2	3	15	15	1	1	1	1
H. C.	17.7	1769	145	223	1.56	562	153	195	.79	2	3	24	26	1	1	0	1
H. O.	17.8	1717	131	186	1.42	552	144	190	.76	0	3	70	40	0	0	1	1
H. J.	17.5	1750	134	250	1.87	563	154	19	.79	2	3	2	25	0	1	1	1
H. F.	17.3	1568	125	259	2.07	535	150	187	.80	1	3	27	20	0	1	1	1
P. M.	17.1	1674	130	234	1.8	540	147	188	.77	0	3	2	35	0	0	0	1
P. A.	17.0	1698	141	242	1.72	552	150	192	.78	2	3	17	20	0	1	1	1
R. E.	17.4	1703	140	272	1.94	570	150	200	.75	1	3	26	26	1	1	1	1
S. C.	17.6	1768	135	218	1.62	542	145	189	.77	1	3	24	24	0	1	0	1
S. H.	17.2	1696	145	221	1.52	558	144	194	.74	0	3	25	22	0	1	1	1
T. E.	17.8	1701	137	190	1.39	539	127	196	.67	1	3	30	30	1	0	1	1
T. J.	17.0	1600	120	163	1.29	534	140	187	.80	2	3	18	25	1	1	1	1
W. E.	17.7	1705	132	242	1.83	548	151	184	.82	2	3	18	16	0	1	1	1
W. E.	17.5	1696	123	192	1.56	547	151	182	.83	3	3	20	25	0	0	1	1
W. C.	17.1	1669	132	181	1.3	541	141	181	.80	0	3	27	30	1	1	0	1
J. R.	17.2	1610	112	188	1.68	543	143	191	.75	0	3	30	30	0	0	1	1
M. G.	17.0	1662	121	202	1.67	552	156	183	.85	1	3	25	23	0	0	1	1
P. E.	17.6	1440	86	89	1.03	530	147	184	.80	0	1	17	17	0	1	0	1
W. W.	17.4	1604	103	160	1.55	534	151	176	.86	0	2	25	25	0	1	1	1
H. A.	17.0	1710	151	210	1.43	561	158	193	.81	0	3	24	21	1	1	1	1
No. of meas.	36	36	36	35	35	36	35	35	35	36	36	36	36	33	35	35	34
Sums	6232	61295	4815			15845	5178	6648	27.31								
Means	17.31	1703	133.8			551	148	190	.780		2.92						
Medians				232	1.66					.88							
No. with defect														22½	8	8½	1½
% with defect														68%	23%	24%	4%

TABLE OF ORIGINAL DATA—Continued

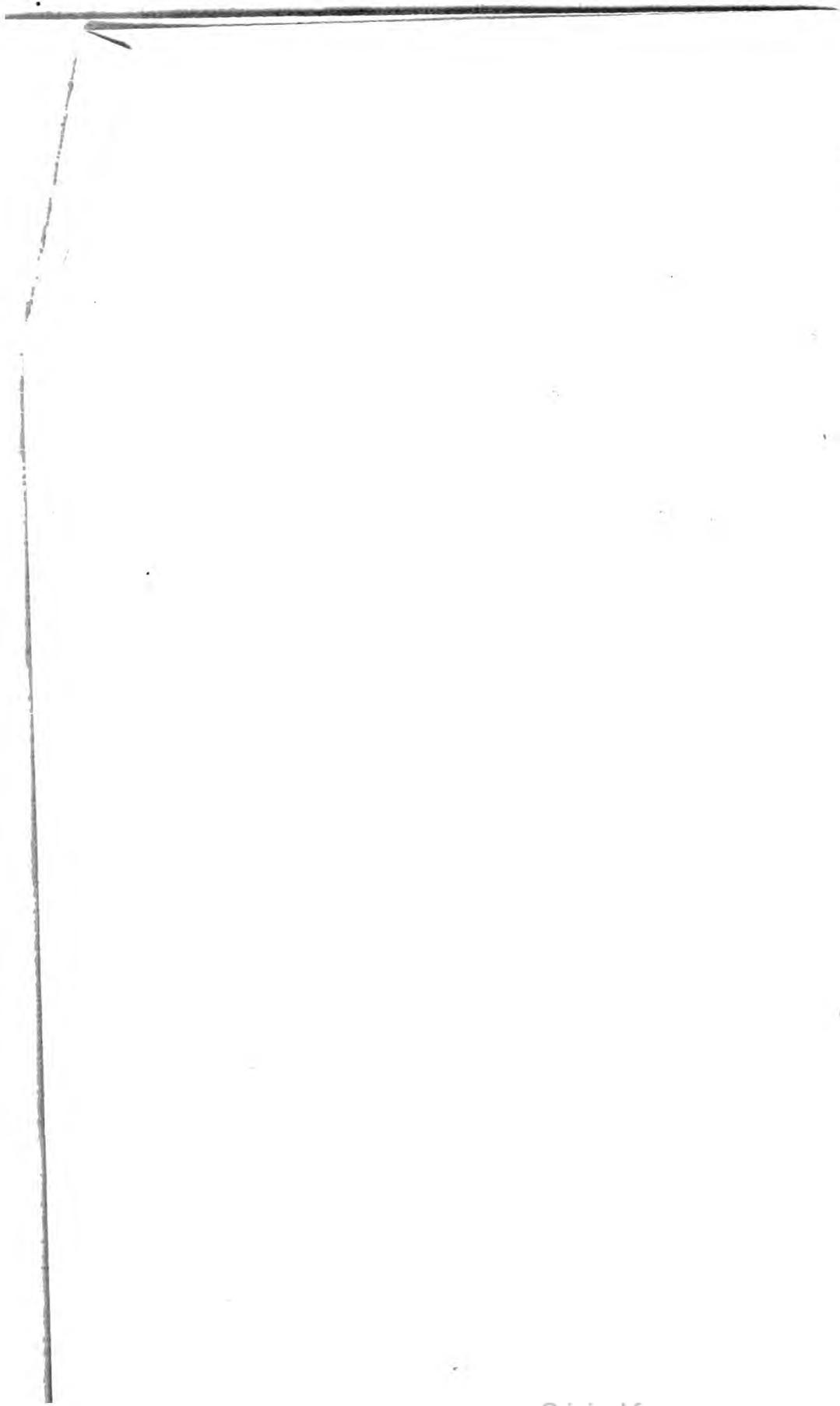
Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Constructive Ability Test				Completion t. mental age	Develop. age
						Purpose	Purp. grade	Sym. grade	Interest			Merit
30	21	R	152	5	12.0					+	17.4
60	59	R	238	4	11.6					+	12.3 13.4
33	30	R	190	2	11.0					+	8.5 10.4
45	52	L	178	5	10.8	Wagon -----	3	3	B	49	10.5 10.4
28	28	R	196	6	11.8	Wagon -----	3	3	B	70	17.9
52	46	R	192	7	11.8	No purpose -----				+	9.6 12.2
51	43	R	160	5	11.8	1. Wagon. 2. Windmill -----	3 3	3 2	B B	60	8.6 12.6
44	41	R	185	4	12.0	1. Bridge. 2. Towers -----	2	2	B	42	12.3
55	45	R	175	6	11.4	Barn -----	3	3	B	62	13.3 14.4
42	38	R	180	5	11.2	Wagon -----	3	2	B	61	9.3 12.3
43	33	R	195	6	11.6	House -----	3	3	B	56	10.5 12.1
50	48	R	187	3	11.2	Wagon -----	5	5	B	59	8.2 11.3
51	49	R	173	6	11.6		+	+	+	+	11.2 12.9
45	44	R	200	4	10.8	Trapeze on wagon -----	3	3	B	61	8.7 11.6
53	52	R	207	4	11.2	1. Table. 2. Rake -----	4 3	2 2	B B	55	9.3 11.0
39	38	R/L	162	5	12.0	House -----	2	2	B	31	11.9 11.9
47	36	R	182	4	11.4	Bridge -----	3	2	B	64	13.3 15.7
46	37	R	189	6	11.0	No definite purpose -----	—	3	P	60	8.2 11.4
48	47	R	194	4	9.6	Wagon -----	2	2		48	8.2 8.9
47	46	R	197		12.0						90.2 18.8
40	38	R	183	4	11.4	Wagon -----	5	4	B	+	11.9 12.8
41	41	R	249	5	11.6	Country store -----	2	3	B	64	17.3 17.3
40	35	R	185	4	11.6	Wagon -----	3	2	B	47	11.6
46	39	R	190	5	11.8	House -----	3	2	B	46	6.7 10.3
39	36	R	182	5	11.4	1. Bench. 2. House -----	3 3	3 3	B B	39	13.6 11.5
41	52	L	190	3	10.8	1. Trestle. 2. Wagon. 2. Wagon. -----	—	3	B	63	12.3 13.9
40	30	R	155	3	10.0	1. Flying machine. 2. Crane -----	4 4	1 4	B B	79	8.3 12.8
40	45	L	196	3	11.2	Table -----	4	5	B	57	7.5 10.7
42	34	R	194	5	11.0	1. Wagon. 2. House -----	3 3	3 3	B B	+	12.4
37	35	R	194	1	8.6	Wagon -----	3	3	B	51	6.6 8.2
43	39	R	181	4	11.4	Wagon -----	3	0	B	37	15.3 11.9
31	29	R	201	4	11.0						10.5 11.4
39	34	R	198	5	11.6						14.1 14.4
13	12	R	198	5	11.0	None -----	—	—	—	+	12.3 12.1
24	26	R	184	6	10.8					+	13.9 12.8
48	42	R	180	5	11.2					+	13.0
36	36	36	36	35	36		23	25		23+2	30 30
1513	1401		6792	158							
42.0	38.9		189	4.51	11.4		3.03	2.79		56	10.5 12.2
		3 1/2 10%									

TABLE OF ORIGINAL DATA—Continued

Name	Age	Height	Weight	Vital capacity	Vital index	Circum. head	Breadth head	Length head	Cephalic index	Scars	Puberty	Right eye	Left eye	Astig.	Vision	Hearing	Nose and Throat
B. C.	18.7	1798	131	260	1.98	567	154	194	.79	0	3	18	15	1	1	1	1
C. R.	18.5	1796	159	256	1.61	582	155	195	.80	3	3	40	40	0	0	1	1
C. M.	18.1	1768	160	268	1.68	585	153	203	.76	0	3	26	26	0	?	1	1
D. N.	18.1	1660	120	172	1.43	560	155	194	.80	1	3	26	24	1	1	1	1
G. J.	18.1	1697	148	256	1.73	550	150	186	.81	2	3	24	24	0	?	1	1
F. D.	18.0	1785	172	271	1.58	565	150	199	.75	1	3	18	25	1	1	1	1
H. H.	18.9	1718	154	220	1.43	568	155	199	.78	0	3	25	25	0	0	1	1
H. R.	18.5	1766	159	270	1.70	560	147	195	.75	3	3	15	25	1	1	1	1
J. I.	18.8	1707	143	198	1.38	555	150	190	.79	1	3	20	20	0	1	0	1
K. E.	18.4	1718	146	280	1.92	558	153	193	.79	0	3	25	25	1	1	1	1
M. S.	18.2	1767	147	234	1.59	562	149	195	.76	0	3	26	26	0	1	1	1
M. G.	18.0	1547	106	180	1.70	546	144	190	.76	2	3	25	28	0	0	1	1
O. J.	18.5	1785	153	262	1.71	566	158	195	.81	2	3	25	20	0	1	1	1
W. F.	18.0	1696	145	228	1.57	547	149	187	.80	3	3	45	45	0	0	1	1
D. J.	18.0	1745	135	232	1.72	554	154	187	.82	0	3	25	25	?	1	0	1
No. of meas---	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	14	13
Sums -----	2748	25053	2178			8425	2278	2902	11.77			0	0				
Means -----	18.30	1730	145.1			562	152	193	.785		3.00	0	0				
Medians -----				256	1.68					1.00							
No. with defect												2	2	7 1/2	5	2	0
% with defect--												0%	0%	54%	33%	14%	0%
L. M.	19.2	1754	180	286	1.59	589	155	203	.76	0	3	28	28	1	1	1	1
R. I.	19.9	1736	130	230	1.77	552	154	186	.83	2	3	120	38	0	0	1	1
T. J.	19.5	1724	148	206	1.39	556	148			1	3	28	28	0	1	1	1
W. G.	19.0	1711	145	260	1.79	569	154	195	.79	0	3	40	40	0	0	1	1
B. R.	19.9	1665	128	262	2.05	547	155	184	.84	2	3	16	24	0	1	1	?
H. J.	19.5	1688	127	200	1.57	540	148	184	.80	0	3	28	35	0	0	1	1
S. J.	19.0	1697	127	230	1.81	539	146	186	.79	0	3	22	25	0	1	1	1
S. F.	19.1	1766	119	234	1.97	537	146	184	.79	2	3	15	15	1	1	1	1
H. J.	20.9	1770	139	220	1.58	550	145	195	.74	1	3	35	60	0	0	0	1
L. D.	20.4	1704	174	241	1.39	538	146	185	.79	2	3	27	200	0	0	1	?
M. J.	21.9	1771	136	252	1.85	557	153	185	.83	3	3	22	40	0	1	0	1
P. W.	22.6	1850	151	256	1.70	577	153	198	.77	0	3	28	28	0	0	1	1

TABLE OF ORIGINAL DATA—Continued

Grip, right hand	Grip, left hand	Handedness	Tapping	School grade	Binet age	Constructive Ability Test					Completion t. mental age	Develop. age
						Purpose	Purp. grade	Sym. grade	Interest	Merit		
45	45	R	189	5	10.2	Sulked—nothing done-----	†	†	†	†	13.9	12.4
49	55	R	223	7	11.6	Sulked-----					†63.7	15.7
51	50	R	173	2	10.6	Wagon-----	4	5	B	60	8.6	11.0
35	33	R	169	7	12.0	Barn-----	4	3	B	71	12.7	16.9
54	53	R	176	7	11.6	Nothing accomplished-----					†13.6	13.4
52	47	R	167	4	11.6	1.Wagon. 2.Table. 3.Wagon	4 4 4	5 5 5	B B B	51	10.5	11.5
52	55	R	185	5	11.0	Kitchen with stove-----	3	3	B	48	13.6	11.6
49	50	R	212	5	10.6	Wagon-----	3	2	B	46	9.1	9.5
39	34	R	160	2	9.4	Wagon-----	3	3	B	49	8.5	9.0
52	49	R	246	7	12.0	No definite purpose-----			B	68	9.2	19.5
51	32	R	195	6	12.0	Bridge-----	3	3	B	72	16.7	18.3
33	31	R	175	3	11.2	1.Table. 2.Wagon-----	4 4	5 4	B B	42	8.3	9.6
65	58	R	202	7	12.0	Dutch windmill-----	4	3	B	76		19.2
45	44	R	205	5	11.6	1.Wagon. 2.House-----	1	1	Poor	29	16.7	12.4
38	33	R	180	5	12.0	Wag., House, Fence, Park Bench, Well.	3 3 3 3 3	3 3 3—3 3	B B B B B	47	10.5	12.3
15	15	15	15	15	15		11	11		12+3	14	15
712	667		2857	77								
47.5	44.5		190	5.13			2.4	3.08		48	13.1	
		0%			11.6							
52	40	R	203	7	11.6						16.7	15.6
39	31	R	188	5	11.4						†13.9	13.8
42	40	R	196	5	11.8						†74.5	17.9
50	48	R	202	7	11.8						†63.7	19.9
45	40	R	189	4	11.2	1.Stage. 2.Carnival-----	2	3	B	62		14.5
34	36	L	190	5	11.8	1.Barn. 2.Implement shed--	3 3	3 3	B B	52	10.5	12.0
37	34	R	210	5	12.0	Barn-----	3	3	B	54	13.6	14.3
		R	181	5	11.4	Wagon-----	1	2	P	†		13.4
42	42	R	189	4	10.8	Box-----	2	3	B	40	9.3	9.4
39	39	R	180	3	10.2	1.Wag., Table, Wag., Box	4 4 4	5 3 5 5	B/PBBBB	51	9.1	9.7
41	42	R	189	1	11.0	1.Wag. 2.Windmill-----	3 3	3 3	B B	71	7.3	13.2
39	37	R	198	7	12.0						†17.3	20.0





APPENDIX B.

ANNOTATED BIBLIOGRAPHY.

Following the author, title, and reference one or more topical headings descriptive of the subject matter of the reference are given in small capitals. The Bibliography includes a number of references to articles upon delinquent girls and the mentality of negroes. It is anticipated that a brief forthcoming bulletin will deal with these two classes of delinquents, and the references are included here in order to keep the bibliographies together.

BIBLIOGRAPHY

- Anderson, Helen M. See (145).
- 1 Anderson, Victor V. A Classification of Borderline Mental Cases Among Offenders. *Jour. of Am. Inst. of Crim. Law and Criminology*, v. 6, No. 5. Jan., 1916.
CRIMINOLOGY. Anderson concludes, "that among our borderline mental cases we have three distinct types, recognizable as definite entities, the *mental defectives*, the *psychopaths*, and the *delinquent type*, each creating very definite social problems; each having a very definite constitutional make-up and requiring for proper treatment and solution an entirely different kind of treatment."
 - 2 Archer, R. A. Spontaneous Construction and Primitive Activities of Children Analogous to Those of Primitive Man. *Am. J. of Psyc.*, v. 21. 1910.
CONSTRUCTION TESTS. Finds support for the recapitulation theory, in that children rarely try to build things at hand, but build towers, steeples, pyramids, etc.
 - 3 Baldwin, Bird T. Physical Growth and School Progress. Bureau of Education Bul. No. 581, 1914.
ANTHROPOMETRIC MEASUREMENTS: PHYSIOLOGICAL DEVELOPMENT: BIBLIOGRAPHY.

Gives individual development of pupils from year to year. Finds appreciable correlation between anthropometric measurements and school success. Bibliography of 333 titles.

- 4 Barnes, Horace Richard. The Further History of Some Troublesome Boys. *Psyc. Clin.* v. 8, No. 4. June, 1914.
 CRIMINOLOGY. A follow-up study of the boys described in *Psychological Clinic* for Nov. 15, 1910. The happy conclusion is stated that most of these "incurable" boys are now living normal, useful lives.
- 5 Bean, Robert Bennett. The Eruption of the Teeth as a Physiological Standard for Testing Development. *Ped. Sem.* v. 21, No. 4. Dec. 1914.
 PHYSIOLOGICAL DEVELOPMENT. The author gives the beginning and the end of the eruptive period for each type of teeth. Study covers American, German, and Filipino children, boys and girls treated separately. The Filipinos are the most precocious group.
- 6 Beik, Arthur K. Physiological Age and School Entrance. *Ped. Sem.* v. 20, No. 3. Sept., 1913.
 PHYSIOLOGICAL DEVELOPMENT. The facts of physiological and anatomical age are considered in some detail, including their relation to height, weight, dentition, growth of skull, development of the sense organs, etc.
- 7 Bell, J. C., Berry, C. S., Cornell, W. S., Doll, E. A., Wallin, J. E. W., Whipple, G. M. Report of Conference on Binet-Simon Scale. *J. Ed. Ps.* v. 5, No. 2. Feb. 1914.
 BINET TESTS. Committee composed of the above named persons. Makes several suggestions, including the following: "A test may be considered normal for a given age if it can be passed by 75% of the non-selected school children of that age."
 Information tests, as opposed to capacity tests "are of less value for diagnosis than are tests of capacity."
 The scale "does not *always* furnish a sharp, nor a

positive diagnosis of feeble-mindedness: in particular, (a) mental age of 10 or above is not necessarily indicative of feeble-mindedness, regardless of how old the examinee may be, and (b) a young child may test almost at age and yet be feeble-minded as determined by other criteria."

- 8 Bell, J. Carleton, and Sweet, Itasca B. The Reading Interests of High School Pupils. J. Ed. Ps., v. 7, No. 1, January, 1916.

INTERESTS. This is a very suggestive study, in that it attempts to reveal a very intangible trait. It gives curves showing literary tastes of high school boys and girls. The notable sex differences suggest that the function considered is largely influenced by environment. No direct reference is made to the interests of delinquent children.

Berry, C. S. See (7).

- 9 Bloomfield, Meyer. The School and the Start in Life. A Study of the Relation Between School and Employment in England, Scotland and Germany. Bul. 595. Washington: Bureau of Education, 1914. Pp. 143.

VOCATIONAL GUIDANCE: BIBLIOGRAPHY. This is an account of the work that is being done in England and Germany to acquaint pupils with the opportunities and requirements of different employments. There is a bibliography of German and English literature on the subject.

- 10 Bloomfield, Meyer. Youth, School, and Vocation. Boston: Houghton Mifflin Company, 1915. Pp. xi, 273.

VOCATIONAL GUIDANCE. A detailed discussion of the organization and activities of the Boston Vocation Bureau, as well as of other bureaus in this country and abroad.

- 11 Bluemel, C. S. Binet Tests on 200 Juevenile Delinquents. Training School Bul., v. 12, No. 8, December, 1915.

MENTAL RETARDATION. Fifty of the 200 cases were girls. The method of grading involved much purely personal judgment. The probationers had an

average I. Q. of 90 per cent, first offenders of 90, State Industrial School boys of 85 per cent, and the State Industrial School girls of 76 per cent; of the S. I. S. boys 30 per cent (conservative estimate, 26 per cent) are defective; of the S. I. S. girls 66 per cent (conservative estimate, 52 per cent) are mentally defective. The greatest amount of retardation is found in the group charged with immorality, which group consists chiefly of girls. Mr. Bluemel endeavored to estimate the mental ages of 150 of the subjects before testing them. His estimate was such that he concludes "that an estimate with nothing to support it is wholly unreliable, more especially as many of the estimates were 4 or 5 years wide of the mark."

- 12 Bonser, Frederick G. The Selective Significance of Reasoning Ability Tests. *J. Ed. Ps.*, v. 7, No. 4, April, 1916.

EDUCATIONAL GUIDANCE. Investigates the status of 757 children 9 years after first test. Correlation between early and late standing is not expressed in coefficients of correlation, but is undoubtedly rather low, as based upon the first position the upper quartile boys have but 1.7 times the chance of the lower quartile boys to finish the 8th grade, and the upper quartile girls have but 1.2 times the chance of the lower quartile girls. However, the chance of the upper quartile boys finishing the high school is 3.5 times that of the lower quartile. The figure for the girls is 4.1.

Bowers, Paul E. See (139).

Bridgeman, Olga. See (92), (139).

Brown, Edith. See (84).

- 13 Bruckner, Leo, and King, Irving. A Study of the Fernald Form-board. *Psyc. Clin.*, v. 9, No. 9, Feb., 1916.
CONSTRUCTION TESTS. Reports results with the Fernald 5-piece Form-board used by Healy. "The writer feels that it (the Form-board) would be of lit-

tle value to an inexperienced experimenter, but for a trained psychologist the method of attack of the pupil upon the solving of the Form-board would reveal many things."

- 14 Bruner, Frank G. Racial Differences. *Psyc. Bul.*, Oct. 1914.

HEREDITY: NEGROES: BIBLIOGRAPHY. Review and summary of literature on racial differences, especially with reference to the negro. Bibliography of 7 titles.

- 15 Bureau of Analysis and Investigation of the New York State Board of Charities: Report of Fifty-two Borderline Cases in the Rome State Custodial Asylum. *Eugenics and Social Welfare Bulletin*, No. 4, Albany, N. Y., 1914.

MENTAL RETARDATION: ENVIRONMENT. The case studies of 52 backward children, involving both a study of their environments and their mental capacities, supply an abundance of valuable data. The changes in mentality revealed by early and late testings are quite small compared with the constant tendencies shown.

- 16 Castle, W. E. Heredity of Coat Characters in Guinea Pigs and Rabbits, 1905.

HEREDITY: BIBLIOGRAPHY. A study of albinism, smooth coat and long coat characters in Guinea pigs, and of albinism and long coat characters in rabbits. Bibliography of 24 titles.

- 17 Chamberlain, Alex. F. Some Recent Anthropometric Studies. *Ped. Sem.*, v. 8, 1901.

ANTHROPOMETRIC MEASUREMENTS. Finds a small positive correlation between anthropometric measurements and intellectual capacity.

- 18 Conklin, Edwin G. Heredity and Environment in the Development of Men. Princeton University Press. 1915. Pp. xvi, 533.

- HEREDITY. The chapters dealing with the science of eugenics, and eugenics and ethics bear upon the problem of delinquency.
- 19 Conn, Herbert William. *Social Heredity and Social Evolution. The Other Side of Eugenics.* New York: Abingdon Press, 1914. Pp. vi, 348.
- HEREDITY. The laws of social heredity and the way in which they operate in society are clearly presented.
- 20 Cornell, Walter S. *Graded Tests on Reading.* Training School Bul., April, 1915.
- MENTAL TESTS. Gives graded reading tests, together with grade norms. Uses same in testing delinquents and others.
- . See also (7).
- 21 Crafts, L. W. *Bibliography of Feeble-mindedness in Relation to Juvenile Delinquency.* *J. of Delinquency*, v. 1, No. 4, Sept., 1916.
- BIBLIOGRAPHY. Contains 211 titles.
- 22 Crampton, C. W. *Anatomical or Physiological Age versus Chronological Age.* *Ped. Sem.*, v. 15, 1908.
- PHYSIOLOGICAL DEVELOPMENT. Crampton herein gives his criteria of physiological development: (1) Prepubescents are "those not having anything more than an abundant lanugo;" (2) Pubescents are "those having more than an abundant lanugo and less than a well-defined covering;" and (3) Postpubescents are "those having a well-defined covering." Crampton recommends that school position and child legislation should be based upon physiological age. Contains a table giving the pubertal development of children from ages 12 to 18.
- 23 Crampton, C. W. *The Influence of Physiological Age Upon Scholarship.* *Psyc. Clin.*, 1907.
- PHYSIOLOGICAL DEVELOPMENT. Certain conclusions are: (1) That early pubescence favors scholarship; (2) that rapidity of growth depends upon physiological and not upon chronological age; (3)

that pubertal change takes place more rapidly in summer than in winter; (4) that those having full set of permanent canines and second molars average heavier and taller than those lacking them; (5) that menstruees are taller, heavier, and stronger than non-menstruees of the same chronological age; (6) and that post-pubescents are from 24 to 33 per cent heavier than prepubescents of the same age.

- 24 Crampton, C. Ward. *The Significance of Physiological Age in Education*. Transactions of the Fifteenth International Congress of Hygiene and Demography. Washington: Government Printing Office, 1913.

PHYSIOLOGICAL DEVELOPMENT. An argument based upon physiological development in favor of separation of children upon the basis of physiological rather than chronological age.

- 25 Cummings, Robert A. *Study of Defective Pupils in the Public Schools of Tacoma, Wash.* *Psyc. Clin.*, v. 8, 1914-1915.

CONSTRUCTION TESTS. Much reliance for purposes of diagnosis is placed upon the spontaneous activities of the child having a card and a ticket punch.

- 26 Davenport, C. D. *The Feebly Inhibited*. Carnegie Institution of Washington, 1915. Pp. 158.

HEREDITY: BIBLIOGRAPHY. Considers in detail the inheritance of nomadism. Bibliography of 60 titles.

Davis, Katharine Bement. See (139).

- 27 Dobbs Ferry Children's Village. *Outlook*, v. 106, p. 62, Jan. 1, 1914.

ENVIRONMENT. An editorial upon the Children's Village at Dobbs Ferry, New York, states that 74 per cent of the children made good when they were returned to their old environment, and that 90 per cent made good when sent to a new environment.

- 28 Doll, E. A. *Sensory Discrimination*. *Training School Bul.*, Nov. and Dec., 1914.

MENTAL TESTS: BIBLIOGRAPHY. This is a study of the relation between sensory discrimination and mentality. A correlation of .65 is found between the discrimination of weights and chronological age in the case of normal children. Same correlation for defectives is .36. One conclusion is "discrimination of lifted weights is a function of intellectual rather than sensory capacity." Bibliography of 9 titles.

- 29 Doll, E. A. The Value of Anthropometric Measurements in the Diagnosis of Feeble-mindedness. Paper delivered at the 23rd Annual Meeting of the Am. Psyc. Ass'n. and reported in the Psyc. Bul., v. 12, No. 2, Feb., 1915.

ANTHROPOMETRIC MEASUREMENTS. In the case of the feeble-minded "weight shows the least retardation and vital capacity the most. Sitting height is more abnormal than standing and right grip more than left." "In no case except weight for girls do as many as one-fourth of the cases reach the normal average in any of the measurements."

—————. See also (7), (60).

- 30 Dresslar, F. B. School Hygiene. Macmillan, N. Y., 1914. Pp. 363.

HYGIENE. Deals with the health of school children, and the requirements of a hygienic school plant. Gives means for the elementary diagnosis of certain defects, their influence upon child life, and their treatment.

- 31 Ettinger, William L. Prevocational Training in Elementary Schools. Ps. Clin., v. 9, No. 6, Nov., 1915.

VOCATIONAL GUIDANCE. This is a review of the report by Dr. Ettinger, Associate City Superintendent, New York, on the organization and extension of prevocational training in elementary schools. Unusually marked aptitudes were considered as establishing a choice of vocational training. The experiment conducted in Public School 162, Brooklyn, included a method of giving vocational guidance.

- 32 Farrell, Eliz. E. A Study of the School Inquiry Report on Ungraded Classes. *Psyc. Clinic*, No. 2, v. 8, April, 1914.

EDUCATION: FEEBLE-MINDEDNESS. This is an adverse criticism of Goddard's survey of, and findings in regard to, the ungraded classes in New York City. Quotes various authorities as to the percentage of feeble-minded in the general population. Goddard quoted as finding 2 per cent of school children mentally defective, W. E. Fernald .2 of 1 per cent, Pennsylvania Commission about .3 of 1 per cent, B. Maennel, in Germany, .5 of 1 per cent, the English Royal Commission .285 of 1 per cent for six cities, and .438 of 1 per cent for five agricultural districts.

- 33 Fernald, Grace M. Results of tests with specific cases. Paper delivered at the Am. Ps. Ass'n., San Francisco, 1915. Reported in *Ps. Bul.*, v. 12, No. 9, Sept., 1915.

DELINQUENT GIRLS. The girls were uniformly poor in powers of concentration, easily fatigued, and with very few exceptions emotionally unstable. Only 13 per cent of the girls come from homes where the parents live together, and in only 6 per cent of these cases is the home in any sense satisfactory.

- 34 Fernald, G. G. Defective Delinquent Class Differentiating Tests. *Am. J. Insan.*, April, 1912.

MENTAL TESTS. Tests cover anamnesis, anthropometry, sensation, and the higher mental processes, including will, attention, association, memory, and ethics. Individual records given. All with a view to determining intellectual and moral ability.

———. See also (139).

Fischer, Charlotte R. See (144).

- 35 Galton Laboratory of Eugenics, London University. Lecture Series, vols. 1-10.

HEREDITY. These reports on statistical studies give the most extensive and accurate information extant as to the nature and magnitude of hereditary and environment influences upon various physical and mental traits.

- 36 Gayler, G. W. Vocational Training as a Preventative of Crime. 39-46. *Ps. Clin.*, v. 6, No. 8, Jan., 1913.
 VOCATIONAL GUIDANCE. The value of a vocational aim as a preventive of crime is pointed out. The need of co-ordinate activity between school and church in the moral education of adolescents is stressed.
- 37 Gaylor, G. W. Vocational Guidance in the High School. *Ps. Clin.*, v. 9, No. 6, Nov., 1915.
 VOCATIONAL GUIDANCE. This is a report of the changes that have taken place in the minds of school children as to their vocational inclinations. "During the interval of 1 year, 66½ per cent of the pupils who were yet in school indicated a change of mind with regard to their choice of a life work. The remainder, 33½ per cent, expressed themselves as before." "A large percentage of those remaining constant in choice remained in school, while a large percentage of those changing had dropped out." "Fifty-two per cent of those remaining in school the entire 4 years had not changed their minds concerning their choice of a life work. Twenty-three per cent changed once, and 12 per cent changed twice; 13 per cent changed 3 times or more."
- 38 Gifford, Mrs. E. Garfield, and Goddard, H. H. Defective Children in the Juvenile Court. *Vineland Training School Bul.*, v. 8, No. 9, Jan., 1912.
 MENTAL RETARDATION. Out of 100 cases examined only one child was found to be normal; 66 per cent more than 4 years backward.
- 39 Goddard, Henry Herbert. *The Criminal Imbecile. An Analysis of Three Remarkable Murder Cases.* Macmillan, 1915. Pp. ix, 157.
 CRIMINOLOGY. The intimate relation between feeble-mindedness and crime is made apparent. What constitutes adequate treatment of the feeble-minded criminal is considered in detail.
- 40 Goddard, H. H. *Diagnosis of Feeble-mindedness.* Ill. *Med. Jour.*, Sept., 1913. Reprinted in pamphlet form.

- MENTAL RETARDATION. From 25 per cent to 75 per cent, probably about 50 per cent, of criminals are feeble-minded; 72 per cent of delinquent girls are.
- 41 Goddard, H. H., and Hill, Helen F. *Delinquent Girls Tested by the Binet Scale*. Training Sch. Bul., v. 8, 1911-12.

DELINQUENT GIRLS: MENTAL RETARDATION. Fifty-two out of 56 showed up as feeble-minded—3.1 or more years retarded.

- 42 Goddard, H. H. *Feeble-mindedness: Its Causes and Consequences*. Macmillan Co., 1914. Pp. xii, 599.

MENTAL RETARDATION: HEREDITY. The value of this book to the student of delinquency is particularly in its consideration of the inheritance of feeble-mindedness.

- 43 Goddard, H. H. *Heredity of Feeble-mindedness*. Proceedings Am. Phil. Soc., v. 51, No. 205, July, 1912.

HEREDITY. Finds the Mendelian principle of heredity to hold for mental characteristics in human beings.

- 44 Goddard, H. H. *Relation of Feeble-mindedness to Crime*. Bul. of Am. Acad. of Med., v. 15, No. 2, April, 1914.

MENTAL RETARDATION. As some 25 per cent of the inmates of our penitentiaries and reformatories are feeble-minded, they are, therefore, irresponsible and not criminal.

- 45 Goddard, H. H. *Responsibility of Children in the Juvenile Court*. J. of Am. Inst. of Criminal Law and Criminology, v. 3, No. 3, Sept., 1912.

MENTAL RETARDATION. Concludes that at least 25 per cent of the children arraigned are feeble-minded, and should be trained in a school for such.

- 46 Goddard, H. H. *Who Is Mentally Defective,—How Many Are There,—How Can They be Detected?* Pamphlet.

MENTAL RETARDATION. Concludes that 1 feeble-minded individual in 200, or 1 child in 50 school children, is a conservative estimate.

—————. See also (38), (139).

47. Goring, Charles. *English Convict*. London, 1913. Pp. 425.

CRIMINOLOGY. Examined 3000 convicts, and concludes that the criminal man is to a large extent a defective man, either physically or mentally, or is unable to acquire the complex characteristics which are essential to the average man, and so is prone to follow the line of least resistance. He found that English criminals, as a rule, are markedly differentiated from the general population in stature and body weight. Criminology is associated with defective physic and defective intellect.

48. Gréany, Ellen M. *A Study of the Vocational Guidance of Grammar School Pupils*. 173-194. *Educ. Adm. and Sup'n.*, v. 1, No. 3, March, 1915.

VOCATIONAL GUIDANCE. The study considers the nature and details of the views possessed by elementary school pupils as to vocations, and describes the means of giving elementary school pupils information which will be helpful in the choice of an education for a vocation. A follow-up investigation shows that the instruction was highly successful.

49. Gruhle, Hans W. *Julius Springer, Berlin, 1912. Die Ursachen der Jugendlichen Verwahrlosung und Kriminalitaet, Studien zur Frage: Milieu oder Anlage.*

HEREDITY. Reviewed by J. B. Minor in the *J. Criminal Law and Criminology*, March, 1913. Gruhle attempts to evaluate the relative importance of heredity and environment in causing delinquency, and to estimate the per cent of delinquents who could be saved had they lived under favorable environmental conditions.

50. Guyer, Michael F. *Being Well-Born. Childhood and Youth Series*. Indianapolis: Bobbs-Merrill Co., 1916. Pp. 374.

HEREDITY. In addition to other phases of heredity, there is considered the question of its bearing upon individual responsibility and delinquency.

- 51 Haines, Thomas H. Point Scale Ratings of Delinquent Boys and Girls. *Psyc. Rev.*, v. 22, No. 2, March, 1915.
MENTAL TESTS. Gives a table showing the ratings of 100 delinquent boys and 100 delinquent girls in Binet and Point Scale scores, and concludes that "these figures demonstrate the point scale, at the present state of development, to be quite as accurate a means of measuring the intelligence of high grade defectives as is the Binet scale."
- 52 Haines, Thomas H. Relative Values of Point Scale and Year Scale Measurements of One Thousand Minor Delinquents. *J. of Exp. Psyc.*, v. 1, No. 1, Feb., 1916.
MENTAL RETARDATION: MENTAL TESTS. This study is written particularly to compare the relative merits of the Yerkes Point Scale to Goddard's revision of the Binet Scale; also contains important results as to amount of mental defect in the case of delinquent boys and girls. Defining "all persons who are four years behind their chronological ages in mental development, and all persons who are 16 or more and are less than 12 in mental development" as feeble-minded, results in 57 per cent of the delinquent boys and girls being feeble-minded, the boys and girls showing about equal amounts of defects. Haines proposes a coefficient of mental ability which is the quotient of the individual's point score divided by the average point score for the same age and sex. By means of a pseudo-logical argument, he adopts a C. M. A. of 75 per cent or less as indicative of feeble-mindedness. By this criterion, 29 per cent are feeble-minded. Of these 29 per cent, 25 per cent were feeble-minded by the earlier criterion, which is the per cent Haines considers to be either about right or a trifle high. Fourteen per cent are above the overage. Haines' procedure in comparing, Binet and Point Scale ratings is open to question. On the basis of it he concludes that "the point scale is shown to be a much finer measuring instrument."

- 53 Hall, Gertrude E. *Eleven Mental Tests Standardized*. Eugenics and Social Welfare Bul. No. 5, State Board of Charities, Bureau of Analysis and Investigation, Albany, N. Y., 1915.

MENTAL TESTS: BIBLIOGRAPHY. The tests standardized are: (1) Seguin Form-board, (2) Freeman and Healy Construction Test A, (3) Fernald and Healy Construction Test B, (4) The Bureau's Drinking Cup Test, (5) Healy and Whipple Motor Co-ordination Test, (6) Woodworth and Wells Cancellation Test, (7) Fernald Recognition Memory Test, (8) Binet Aussage Test, (9) Healy Pictorial Completion Test, (10) The Bureau's Telling Time Test, and (11) Thorndike Antonyms Test. In the standardization of the Antonyms Test is to be found a table showing the relative difficulties of 23 antonyms. Contains a bibliography of 14 titles.

- 54 Hastings, W. M. W. *Anthropometric Studies in Nebraska University*. *Am. Phys. Ed. Rev.*, v. 5, pp. 53-66.
ANTHROPOMETRIC MEASUREMENTS. The results of an examination of 2500 confirm Porter's conclusions as to psycho-physical relations.

- 55 Healy, William. *Honesty. A Study of the Causes and Treatment of Dishonesty Among Children*. Bobbs-Merrill Co., 1915. Pp. 220.

CRIMINOLOGY. The importance of home conditions, companionships, amusements, social habits, etc., in their bearing upon honesty in children is carefully considered.

- 56 Healy, William. *The Individual Delinquent. A Text-book of Diagnosis and Prognosis for All Concerned in Understanding Offenders*. Little, Brown & Co., 1915. Pp. xvii, 830.

CRIMINOLOGY: MENTAL TESTS: BIBLIOGRAPHY. This massive work deals with all phases of juvenile delinquency. Healy refuses to find a single or even a small number of causes as adequate to explain all cases of delinquency, or a single treatment

as a panacea for delinquency. The very freedom from the desire to limit the number of causative factors to a few has resulted in a book which is of unusual value in serving as a model for case studies, while it is at the same time disappointing as to the light it throws upon the diagnosis of tendencies toward waywardness before any positive acts of delinquency have been committed. Contains a bibliography of 351 titles.

- 57 Healy, William, and Healy, Mary. *Pathological Lying, Accusation and Swindling*. Criminal Science Monograph No. 1. Little, Brown & Co., Boston, 1915.
CRIMINOLOGY. Considers that distinct types of delinquency, characterized by the terms in the title, exist, though they are usually found in connection with other tendencies toward delinquency and crime. This type of delinquency is much more characteristic of females than of males.
- 58 Healy, William. *A Pictorial Completion Test*. *Psyc. Rev.*, v. 21, No. 3.
CONSTRUCTION TEST. A test which applies the Ebbinghaus completion idea to pictorial material. The independence of the test from language gives the test its value.
- 59 Healy, William. *Tests for Use in Practical Mental Classification*. *Psyc. Monograph*, March, 1911.
MENTAL TESTS: CONSTRUCTION TEST. Twenty-two tests are described, together with what each is expected to reveal.
———. See also (117).
Healy, Mary. See (57).
- 60 Hickman, H. B., (and Doll, E. A.) *Delinquent and Criminal Boys Tested by the Binet Scale*. *Training Sch. Bul.*, v. 11, No. 9, Jan., 1915.
MENTAL RETARDATION. Summary shows that of the 229 boys tested . . . about 75 per cent of the whole number tested, tested as much as 3 years or more below normal. "So the conclusion is reached

that of these 229 boys, only about 63 will be able to get out and take anything like a normal station in society." Hickman gives tables from which E. A. Doll has made supplementary analysis, finding 11.8 per cent normal, 15.7 per cent from 1 to 3 years retarded, and 75.5 per cent feeble-minded. Doll finds the correlation in the case of these 229 boys between chronological and mental age to be .409, which is considerably less than the correlation .805 found from Goddard's table of 2000 normal children. Correlation between chronological age and school grade is .49, which again is less than the correlation .84 in Goddard's data. The correlation between Binet age and school grade is .73, which is exactly equal to the correlation existing in Goddard's data.

Hickson, W. J. See (139).

- 61 Hill, David Spence. *An Experimental Study of Delinquent and Destitute Boys in New Orleans, and Notes Concerning Preventative and Ameliorative Measures in the United States*. New Orleans: Published by the Commission Council, June, 1914, pp. 130.

CRIMINOLOGY. A group of 63 delinquent boys showed but little defectiveness. Contains a discussion of various agencies for the care of delinquent children.

- 62 Hill, David Spence. *Study of Exceptional Children in New Orleans*. This study is a part of the report of the New Orleans Sup't. of Schools, 1912-13, and is reviewed in *Ps. Clin.*, v. 7, No. 8, Jan., 1914.

EXCEPTIONAL CHILDREN: NEGROES. Gives excellent table of distribution of white and black pupils placed in the following categories by teachers and principals: Feeble-minded, backward, gifted, incorrigible defective, incorrigible normal, defective vision, deaf, speech defects, crippled, epileptic. Population studied 37,824. One per cent of the white children and 1½ per cent of the colored are classified as incorrigible.

- 63 Hill, David Spence. Survey of Industries and Mechanical Occupations in New Orleans by the Division of Educational Research. *Sch. and Soc.*, v. 2, 1915.
VOCATIONAL GUIDANCE. This study deals with boys of various groups in New Orleans. It is a general vocational survey.
Hill, Helen F. See (41), (139).
- 64 Hinckley, Alice C. Binet Tests Applied to Individuals Over 12 Years of Age. *J. Ed. Ps.*, Jan., 1915.
BINET TESTS. Shows specific nature of defect. Gives excellent tabulation showing relative difficulty of each of the Binet questions.
- 65 Hoke, K. J. Placement of Children in the Elementary Grades. A Study of the Schools of Richmond, Va. *Bul.*, 1916, No. 3. Washington: Bur. of Educ.
EDUCATIONAL GUIDANCE. This monograph presents the age-grade progress in both the white and negro elementary schools. Tabulations show mental age of repeaters, of non-repeaters, those who have skipped a grade, etc.
- 66 Hoke, K. J. The Public Schools and the Abnormal Child. Report to the Virginia State Board of Charities and Corrections, 1916.
MENTAL RETARDATION. The best means of handling the retardate in the public school system is considered. Excellent recommendations are made, the adherence to which quite justify the following prophecy: "By pursuing such a policy, many wards of the State would be trained to become self-supporting in a community where they are not brought in competition with the normal individual. The menace of the feeble-minded reproducing themselves would be cut off at its source."
- 67 Holmes, Arthur. Backward Children Indianapolis: The Bobbs-Merrill Co., 1915, pp. 247.
MENTAL RETARDATION. Most of the problems of mental retardation are touched upon in an anecdotal and popular manner.

- 68 Johnson, Alexander. Colonies for Delinquents. *Training Sch. Bul.*, v. 12, No. 2, April, 1915.

EDUCATION OF EXCEPTIONAL CHILDREN. States that Massachusetts has enacted laws and is taking definite steps to treat defective delinquents, both boys and girls, in a special way—putting them in colonies and housing in cottages; segregated from other delinquents.

- 69 Johnson, Katherine L. Mr. Binet's Method for the Measurement of Intelligence. Some Results. *J. Exp. Ped.*, v. 1, No. 1, 1911.

BINET TESTS. An examination of 218 girls with the 1908 tests indicates that the 7-year tests are too easy and the 10 and 12-year tests are too difficult.

- 70 Jones, Adam Leroy. Memoranda from the Records of a Few College Freshmen. *Sch. and Soc.*, v. 1, No. 17, April 24, 1915.

EDUCATIONAL GUIDANCE. A study of the correlation between entrance examination marks and later college accomplishments.

- 71 Kelley, Truman Lee. A Constructive Ability Test. *J. Ed. Ps.*, v. 7, No. 1, Jan., 1916.

CONSTRUCTION TESTS. A test designed to measure initiative as well as manipulative ability. The material of the test consists of a flexible set of building blocks. The scoring is by means of stereoscopic photographs of structures which have been carefully scaled for their general merit.

- 72 Kelley, Truman L. Educational Guidance. *Columbia University Contributions to Education*, No. 71, 1914.

EDUCATIONAL GUIDANCE: MENTAL TESTS. The purpose of this study is to ascertain the extent to which future accomplishment in high school studies can be determined by (a) a study of preceding school grades, (b) estimates of the former teachers of the pupil, and (c) by means of special tests. The highest correlation, .89, obtained between prognosis and later accomplishment, was that based upon a combination of these three sources of information.

- 73 Kelley, Truman L. A Study of High School and University Grades, With Reference to Their Intercorrelations and the Causes of Elimination. *Jour. Ed. Psyc.*, v. 6, No. 6, June, 1915.

EDUCATIONAL GUIDANCE. Gives the correlation between high school and university standing, and shows the relation between elimination from the University and low scholastic standing.

- 74 Kellicott, William E. *Social Direction of Human Evolution*. Baltimore, Md., 1910.

HEREDITY. A treatise upon the biological foundations of eugenics and its social promise and problems.

- 75 Kellogg, Angie L. Review of Literature Upon "Crime and Sociology." *Psyc. Bul.*, v. 12, No. 12, Dec., 1915.

CRIMINOLOGY. Quotes W. Clark, "Prostitution and Mental Deficiency," *Social Hygiene*, v. 1, 1915, as saying, "as a most conservative and accurate estimate, one-half of those who come into the custody of the institutions for correction and reformation are mentally defective." Reports that A. F. Bronner, "Delinquency and Mental Deficiency," *J. Am. Inst. of Criminal Law and Criminology*, 1914, v. 5, finds that less than 10 per cent of 505 children in the Cook County Detention House are feeble-minded. Reports that K. Strieve, *Die Strafrechtliche Behandlung der Jugend in England*, Berlin, Liebmann, 1914, finds as the causes of juvenile delinquency in England the wide social distinction between the upper and lower classes, absence of proper physical and mental recreation, and alcoholism. Quotes a number of authorities as urging the necessity of a public defender, primarily in order that the indigent accused may have justice; others as favoring laboratories in connection with courts and reformatories.

- 76 Kelynack, T. N. *Defective Children*. New York: William Wood & Co., 1915. Pp. xvi, 462.

MENTAL RETARDATION: EDUCATION. The means of measuring physical, sensory and mental de-

fect, and the caring for and education of defective children, both in this country and abroad, are considered.

- 77 King, Irving. Physiological Age and School Standing. *Psyc. Clin.*, v. 7, No. 8, Jan., 1914.

PHYSIOLOGICAL DEVELOPMENT. Two hundred and seventy-one grammar school pupils from 10.5 to 16.5 years of age were studied. Early maturity seems correlated with high scholastic standing. Girls of each physiological age reported as making a higher showing than boys of the same physiological development, but it is not apparent that allowance has been made for the difference in the school grade of the different groups.

—————. See also (13).

- 78 Kite, Elizabeth S. Responsibility and Crime. A Study and Interpretation of the Later Works of Alfred Binet. *J. of Am. Inst. of Crim. Law and Criminology*, May, 1914.

CRIMINOLOGY. Considers punishment is beneficial and not unjust. If a man has choice, then he has responsibility. Quotes Davenport as denying man's responsibility. Binet said, "Normal man possesses direction, choice, criticism, will."

- 79 Kohs, Samuel C. Bibliography on Binet-Simon Tests. *J. Ed. Ps.*, v. 5, No. 4-6, 1914.

BIBLIOGRAPHY. Contains 254 titles.

- 80 Kohs, Samuel C. Distribution of the Feeble-minded by Mental Age (Binet). *J. of Delinquency*, v. 1, No. 2, May, 1916.

MENTAL RETARDATION. Analyzes data gathered by Goddard, Huey, Kohs, and from surveys in New Hampshire, Chicago, Michigan, District of Columbia, and Virginia; and concludes that 30.5 per cent of the feeble-minded are in feeble-minded and kindred institutions; that 15 per cent are in penal and kindred institutions, and that 54.5 per cent are

at large. Reports the New Hampshire investigation as finding 68 per cent at large, and the Virginia investigation 60 per cent at large.

- 81 Kohs, Samuel C. New Light on Eugenics. *Journal of Heredity*, v. 6, No. 10, Oct., 1915.

HEREDITY: BIBLIOGRAPHY. Endeavors to arrive at a balance between the importance of heredity and environment. Considers that the importance of environment has been generally underestimated. Bibliography of 40 titles.

- 82 Kohs, Samuel C. Practicability of the Binet Scale and the Question of the Borderline Case. *Tr. Sch. Bul.*, v. 12, No. 9, Jan., 1916.

BINET TESTS: ANTHROPOMETRIC MEASUREMENTS. Some 325 inmates of the Chicago House of Correction, 17 years of age and over, were studied. Finds normality to range within the limits 12-2 and 10-4, and feeble-mindedness not to extend above the limit 11-2. "In other words, none of our cases testing 11-3 or over were found, with the aid of other confirmatory data, to be mentally defective. None of our cases testing 10-3 or below were found to be normal. Of those testing between 10-4 and 11-2, our borderline cases, a little less than half were found normal, and somewhat more than one-half were found feeble-minded." "Our anthropometric measurements: height standing, height sitting, weight, right hand grip, left hand grip, and vital capacity, very often indicate, in those suffering from mental defect, a high average for the percentiles of the purely physical measurements when compared with those of the psychophysical."

- 83 Kuhlmann, F. Review of Literature, Upon Feeble-mindedness. *Psyc. Bul.*, v. 11, No. 6, June 15, 1914.

BIBLIOGRAPHY. A review of 27 titles on feeble-mindedness, containing several bearing upon the question of delinquency.

- 84 Leavitt, Frank M., and Brown, Edith. *Prevocational Education in the Public Schools*. Houghton Mifflin Co., 1915. Pp. v, 245.
EDUCATIONAL GUIDANCE. A great deal of attention is given in this work not only to prevocational education, but also to the means at hand whereby the public school may help pupils to choose wisely their life activities.
- 85 Levy-Suhl, Max. *Der Zweck der Strafe in der Auffassung jugendlicher Angeklagter*. *Zeitschrift für angewandte Psych. und Psyc.*, Sammelforschung, v. 9, 1915.
CRIMINOLOGY. This is a study of 136 delinquents with a view to ascertaining their conceptions of the purpose of punishment.
- 86 Lyster, Robert A. *School Hygiene*. Baltimore: Warwick & York, Inc., 1915. Pp. viii, 388.
HYGIENE. A number of suggestions are given which should be of value in the examination of school children for physical and sensory defects.
- 87 McComas, H. C. *The Heredity of Mental Abilities*. *Psyc. Bul.*, v. 11, No. 10, Oct., 1914.
HEREDITY: BIBLIOGRAPHY. A brief review and summary of recent literature, including a bibliography of 23 titles.
- 88 McDonald, Arthur. *Bibliography of Exceptional Children and Their Education*. U. S. Bureau of Education Bulletin, 1912, No. 32; Whole No. 506.
EDUCATION OF EXCEPTIONAL CHILDREN: BIBLIOGRAPHY. This bibliography of 622 titles contains brief annotations for most of the references.
- 89 McDonald, Robert A. F. *Adjustment of School Organization to Various Population Groups*. Teachers' College, 1915. Pp. 145.
EDUCATION OF EXCEPTIONAL CHILDREN. This study deals with school provision for practically every kind of exceptional school child.
- McIntyre, J. L. See (108).

- 90 Mayo, Marion J. *The Mental Capacity of the American Negro.* Archives of Psychology, No. 28, Nov., 1913. Pp. 70.

NEGROES. This is a comparative study of the negro and white pupil in New York City high schools. The negroes are from 7 to 9 months older on entering school; their average grades are 4 per cent lower and the percentage of failures is larger than in the case of the white pupils.

- 91 Mead, Cyrus D. *Height and Weight of Children in Relation to General Intelligence.* Ped. Sem., v. 21, No. 3, Sept., 1914.

ANTHROPOMETRIC MEASUREMENTS. A comparison of 481 normal boys and girls with 429 feeble-minded showing that the feeble-minded are generally deficient in physical development, and the greater the mental defect, the greater the physical retardation.

- 92 Morrow, Louise, and Bridgeman, Olga. *Delinquent Girls Tested by the Binet Scale.* Training Sch. Bul., v. 9, No. 3, May, 1912.

MENTAL RETARDATION. Only 20 out of 60 girls tested would be able to take anything like a normal place in society. Mental defectiveness is the main cause of the delinquency. Out of the 500 girls in this institution, 371 were sent there for immorality, 50 for incorrigibility, 46 for dependency, 25 for larceny, 4 for truancy, 3 for drunkenness, and one for sending obscene matter through the mails.

- 93 Morse, Josiah. *Classification of Negroes by the Binet Test.* Ped. Sem., Dec., 1913.

NEGROES. When social status is taken into consideration, the negroes are still found to test much lower than the whites.

- 94 Mosby, Thomas Speed. *Crime, Its Causes and Cure.* St. Louis: C. V. Mosby Co., 1913. Pp. x, 354.

CRIMINOLOGY. This student of the legal aspect of crime reaches the same conclusion as the student

of its psychological aspect—the conception of the criminal as a social misfit who needs the assistance of the State in his proper education.

- 95 National Soc. for the Study of Educ. Fifteenth Yearbook. Part 1. Standards and Tests for the Measurement of the Efficiency of Schools and School Systems.

MENTAL TESTS: PHYSIOLOGICAL DEVELOPMENT. Notes and data by various authors upon scales and units of measurement. Among topics considered are physiological age (by B. T. Baldwin), arithmetic (B. R. Buckingham), completion tests (M. R. Trabue), Thorndike's visual vocabulary, and Courtis tests, series B (H. S. Childs), Courtis tests in arithmetic (S. A. Courtis), reading (C. H. Judd).

- 96 New York Probation and Protective Association. Report of Mental Examinations by the Association. New York: Published by the Association, 1914.

MENTAL RETARDATION: DELINQUENT GIRLS. From rather inadequate data, the author concludes that but a small proportion are feeble-minded.

Orr, Florence L. See (109).

- 97 Otis, Margaret. The Binet Tests Applied to Delinquent Girls. Ps. Cl. v. 7, No. 7. 1913.

MENTAL RETARDATION. A study of 172 delinquent girls in the New Jersey State Home for Girls revealed 25 "normal," 30 "moron," and 45 "defective," to use the terms as quite uniquely used by the author.

- 98 Otis, Margaret. The Problem of Life from a Girl's Point of View. Psyc. Clin., No. 4, v. 8. June, 1914.

DELINQUENT GIRLS. A case study of one girl's failure.

Paterson, Donald G. See (102).

- 99 Pearl, Raymond. Modes of Research in Genetics. New York: Macmillan Co., 1915. Pp. vii, 182.

HEREDITY. The problems of heredity from the biometric and the Mendelian points of view are considered.

- 100 Phillips, Byron H. Binet Tests Applied to Colored Children. *Ps. Clin.*, v. 8, No. 7, Dec. 15, 1914.

NEGROES. 86 negroes and 137 white children were tested, comparisons are made between white and negro children having the same home conditions. In this case, the negro children are, on the whole, .87 of a year below the white children. Using all the data, irrespective of environment, shows that the negroes are slightly over 1 year retarded. Sex differences are small.

- 101 Pintner, Rudolph. One Hundred Juvenile Delinquents Tested by the Binet Scale. *Ped. Sem.*, v. 21, No. 4, Dec., 1914.

BINET TESTS. Calling "backward" those retarded 1.1 to 3.0 years, and "feeble-minded" those retarded 3.1 years or more, two are found to test above average, 21 "backward," and 46 "feeble-minded," in the Ohio Training School examined. Concludes that "low mentality, not poverty or neglect, paves the way toward delinquency."

- 102 Pintner, Rudolph, and Paterson, Donald G. A Psychological Basis for the Diagnosis of Feeble-mindedness. *J. of Am. Institute of Criminal Law and Criminology*. v. 8, No. 1, May, 1916.

MENTAL RETARDATION: BIBLIOGRAPHY. Have collected and analyzed previous studies in which normal children were tested by the Binet Scale, and in which delinquent children were tested by the Binet Scale and the Yerkes-Bridges Point Scale. Study is very excellent for historical and comparative purposes. Gives usual sociological definition of feeble-mindedness, but recommends a psychological definition such as that the lowest, mentally, 3 per cent of each age be called feeble-minded. This 3 per cent standard shown to be less rigorous than standards hitherto set up by testers of delinquents. Percentage definition is in line with Miner's earlier recommendation to the same effect. Criticises the I. Q. method, show-

ing that it results in an increasing percentage of feeble-mindedness in going from young to older age. Applying Haines standard of feeble-mindedness—I. Q. below .75—results in 11.5 per cent of feeble-mindedness in Yerkes normal group. Evaluates the data of eight investigators of the percentage of feeble-mindedness among delinquents who published their raw data, and finds percentage running from 27 to 72, not including Faulkner's and Hickson's estimates of 78 and 84, respectively. The same data evaluated on the basis of the lowest 3 per cent of the general population results in percentages of feeble-mindedness from 16 to 33. Bibliography of 35 titles.

- 103 Potts, Chas. S. *Crime and the Treatment of the Criminal*. University of Texas. Humanistic Series, Bul. No. 8. May 1, 1910. Pp. 84.

CRIMINOLOGY. An excellent discussion of the treatment needed. Proposes a complete penal system built upon ideas of reformation and rehabilitation of the criminal and delinquent.

- 104 Pyle, W. H. *The Learning Capacity of Negro Children*. Address delivered to Am. Psyc. Ass'n, Dec., 1915.

NEGROES. By means of a learning test which eliminates to a large extent the effects of experience and environment, Pyle measured and compared the ability of negro and white children, and concluded that negro children have $\frac{3}{4}$ to $\frac{4}{5}$ of the learning capacity of white children of the same age.

- 105 Pyle, W. H. *Mentality of the Negro Compared with Whites*. Psyc. Bul., v. 12, No. 2, Feb., 1915.

NEGROES. "The marks made by the negroes in the various tests are, in general, about two-thirds of the corresponding marks of whites. Negro girls are closer to white girls than negro boys are to white boys." "The difference between the negroes and whites grows less with age. About $\frac{1}{5}$ of the negroes are equal or superior to the average of whites, while $\frac{3}{4}$ of the whites are equal or superior to the average of the ne-

groes." "The greatest differences are found in the hardest tests, such as the completion test." "Separating the negroes into a poor and good social group and comparing the two groups shows that the negro boys of the good group make an average which is 4/5 of that of the whites, and the girls 3/4 of the average of white girls."

- 106 Pyle, W. H. *Mind of the Negro Child*. Sch. and Soc., v. 1, No. 10, 1915.

NEGROES. This is a description of the application of Pyle's tests for memory, rate of learning, association and reaction to ink blots, to 408 negroes. Norms are given for each test for ages 8 to 16. The white boys are invariably superior to the colored, ranging from slight superiority in the cancellation test to 4 times as good in the genus-species test. Negro girls slightly superior to white girls in the cancellation test. Inferior in all others. The greatest disparity is in the genus-species test, where the ratio is approximately 1 to 3.

- 107 Pyle, W. H. *A Study of Delinquent Girls*. Ps. Clin., v. 8, No. 5, 1914.

MENTAL RETARDATION: DELINQUENT GIRLS. "On the average, the standing of delinquent girls is only 65% of that of normal girls." The standing of the delinquent girls was 50% of the average standing of sixth grade pupils." 20% of the girls had very poor vision.

Renz, Emilie. See (139).

- 108 Rogers, Agnes L., and McIntire, J. L. *Measurement of Intelligence in Children by the Binet-Simon Scale*. Brit. J. Psyc., v. 7, Oct., 1914.

BINET TESTS. Contains an excellent historical sketch and analysis of the traits measured by the various tests. Results show that Binet ages and mean chronological ages do not agree, the early Binet ages being too high, ages 9 and 10 being approximately correct, and the higher Binet ages being too low.

- Compares the accomplishment of children of different nationalities when tested with the 1908 scale. Full tables enable the calculation of measures of deviation for different age groups.
- 109 Rosanoff, A. J., and Orr, Florence L. A Study of Heredity of Insanity in the Light of the Mendelian Theory. Eugenics Record Office, Bul. No. 5.
HEREDITY. Concludes that neuropathic constitution is transmitted from generation to generation according to Mendelian principles.
- 110 Rowe, E. C. Five Hundred and Forty-seven White and Two Hundred and Sixty-eight Indian Children Tested by the Binet-Simon Tests. *Ped. Sem.* v. 21, No. 3, 1914.
INDIANS. The Indians are uniformly inferior to the whites, showing greater defect than that discovered for colored children by Strong.
- 111 Ruediger, W. C. Correlations between Cranial Measurements and College Marks. Proceedings of the Tenth Annual Meeting of the Southern Society for Philosophy and Psychology, Philadelphia, Dec., 1914; reported in *Psyc. Bul.* v. 12, No. 2, Feb., 1915.
ANTHROPOMETRIC MEASUREMENTS. The correlations for men hover around zero, while those for women average .28, the highest being .38 for circumference of head. Subjects consist of 35 college men and 50 college women.
- 112 Saleeby, C. W. Parenthood and Race Culture. Cassell and Co., 1909. Pp. xiv, 320.
HEREDITY: BIBLIOGRAPHY. The nature and means of race culture are portrayed from the standpoint of heredity and education. Various factors making for race decadence are analyzed. Bibliography of 58 titles.
- 113 Seguin, Edward. Idiocy: Its Treatment by the Physiological Method. Columbia Univ., Teachers' College. Educational Reprints, 1907.
EDUCATION OF EXCEPTIONAL CHILDREN. This pioneer work dealing with the education of idiots is still rich in suggestions of practical value.

- 114 The Sentinel, Whittier, Cal., May 7, 1915.
 ENVIRONMENT. The following table is given:
 "Table showing broadly the home conditions of the
 boys at Whittier on January 1, 1915."

	No.	Per cent Unbroken Homes	Per cent Broken Homes
Total number of boys under jurisdiction of			
school January 1, 1915.....	351		
Parents living together.....	104	29.603	
Father dead	70		19.943
Mother dead	60		71.122
Both parents dead.....	36		10.256
Parents separated	56		15.955
Parents divorced	25		7.122
Total		29.6	70.4

- 115 Smedley, Fred W. Child Study in Chicago. Report of
 Commissioner of Education, Ch. 27. 1902.

ANTHROPOMETRIC MEASUREMENTS: MEN-
 TAL RETARDATION. Gives percentile values for
 Chicago public school children, ages 4 to 20, for height
 sitting, height, weight, vital capacity, strength of
 grip, and work on ergograph. Gives tables showing
 strength of memory, vision, audition (Seashore audio-
 meter), per cent left hand grip is of the right, the
 number of growth abnormalities, and the number of
 motor defects. Compares standing of John Worthy
 School boys (Reformatory) with normal boys in
 memory tests, finding that different age groups ac-
 complish from 45 to 68 per cent of normal in audi-
 tory memory, and from 67 to 113 per cent in visual
 memory. Compares the number of grades made in
 a given time by different percentile groups. The
 upper 10 per cent exceeds the lower by approximately
 1 year in 6. On the average, John Worthy School
 boys show over twice as many growth abnormalities
 and motor defects as do normal boys. In physical
 measurements, the 9 and 10 year old John Worthy

School boys were practically normal, exceeding the normal standard some 4 per cent in weight, and falling down noticeably only in their ergographic work record, in which they averaged 84 per cent of normal. All other ages show general physical retardation, the greater retardation, the greater the age. Ergographic work shows the greatest retardation, and strength of grip next, but neither of them show as much backwardness as was shown in the memory test, where the accomplishment was 2/3 of normal. In growth abnormalities, motor and sensory defects and physical measurements, retarded school children stood below normal, but where comparison was possible, were found much closer to above-grade pupils than to the John Worthy School children. The difference in percentages between the above-grade and below-grade groups having defective vision was the least marked difference. The strength of left hand in the below-grade group more nearly equaled that of the right hand than in the case of the above-grade group.

- 116 Smith, Stevenson; Wilkinson, Madge W.; Wagoner, Lovisa C. A Summary of the Laws of the Several States Governing I.—Marriage and Divorce of the Feeble-minded, the Epileptic and the Insane. II.—Asexualization. III.—Institutional Commitment and Discharge of the Feeble-minded and the Epileptic. *Bulletin of the University of Washington*, No. 82, pp. 87.

CRIMINOLOGY. A very valuable digest of the laws of every State in the Union dealing with the feeble-minded, epileptic, and insane.

- 117 Spaulding, E. R., and Healy, W. Inheritance as a Factor in Criminality. *Jour. of Am. Inst. of Crim. Law and Criminology*, 1914.

HEREDITY. An examination and classification of 1,000 cases leads to the conclusion that there is no evidence that criminalistic traits, as such, are inherited.

- 118 Starch, Daniel. The Inheritance of Abilities in School Studies. *Sch. and Soc.*, v. 2, No. 43, Oct. 23, 1915.

HEREDITY. Concludes that mental and physical traits are inherited to approximately the same extent.

- 119 Stearns, A. Warren. What Recent Investigations Have Shown to be the Relation Between Mental Defect and Crime. *Mass. Soc. for Mental Hygiene*, Boston. Publication No. 19.

MENTAL RETARDATION. After reviewing the situation as found in Massachusetts, concludes that many convicted for crime and delinquency are insane or feeble-minded. In view of the large number of arrests in a year, 176,000 in Massachusetts, it does not seem feasible to provide for a mental examination in every case by one trained in mental tests, and Stearns believes "that the first mental examination should be made by probation officers, judges, and police officers."

- 120 Steinbach, Charlotte. Examination of 1,097 Children in the Public Schools of Cleveland, Ohio. *Training School Bul.*, v. 12, No. 4, June, 1915.

MENTAL RETARDATION. This examination revealed 79 imbeciles and 279 morons, about 3.5 per cent of the total group.

- 121 Stenquist, J. L.; Thorndike, E. L.; Trabue, M. R. The Intellectual Status of Children Who Are Public Charges. *Archives of Psychology* No. 33, v. 24, No. 2, Sept., 1915.

MENTAL RETARDATION. 183 boys and 82 girls tested with the Stenquist Construction Test, Trabue Completion Test, Binet Test, and Thorndike Reading Test. "These dependent children as a group are much below ordinary children of corresponding ages in the sort of abilities tested by the Binet, completion and reading tests." Retardation for different age groups runs from .7 of a year for ages 9 and 10 to 4.5 years for ages 15 and 16. "A comparison of the measures of the children committed for delinquency with those committed for destitution shows no demonstrable difference either in the tests of abstract intelligence or in the mechanical test." The average under-ageness

in the construction test is less than in the other mental tests.

- 122 Stern, William. *The Psychological Methods of Testing Intelligence*. *Educ. Psyc. Mon.*, No. 13. Baltimore: Warwick & York, Inc. 1914. Pp. x, 160.

MENTAL TESTS. This is a very excellent discussion of mental tests in general, and particularly of the Binet Test. Various ways of testing the finer gradations of mentality are presented.

- 123 Strong, Alice C. *Three Hundred and Fifty White and Colored Children Measured by the Binet-Simon Measuring Scale of Intelligence: A Comparative Study*. *Ped. Sem.*, v. 20, No. 4, 1913.

NEGROES. An examination of 125 colored children shows greater retardation than in the case of white children.

Sweet, Itasca B. See (8).

- 124 Sylvester, Ruell Hull. *The Form Board Test*. *Psyc. Monographs*, v. 15. 1913.

CONSTRUCTION TESTS. Considers that it gives a good idea of the child's mentality, and usually indicates more or less clearly the nature of his defects.

- 125 Terman, L. M. *The Hygiene of the School Child*. Houghton, Mifflin Co., 1914.

HYGIENE. BIBLIOGRAPHY. A semi-popular treatise pretty well covering the hygiene of children of school age. Rules are given for elementary diagnosis. Good bibliographies are given at the ends of the chapters.

_____. See also (139).

- 126 Texas State Juvenile Training School, Gatesville, Texas. *Annual Report of the Board of Trustees*. 1915-16.

CRIMINOLOGY. Certain recommendations of the Board are as follows: "The Board again earnestly urges that the entire juvenile delinquency act should be amended—or, better still, the act should be wiped out and a new, modern, coherent and sound law be enacted." (P. 5.) "The new law, further, should provide for commitment of boys to this school 'indefi-

nitely': that is, they should be committed until they are 21 years old, whether they be 12 years old or 17 at the time of commitment. And 12 years of age should be the minimum, 17 years the unviolated maximum, for committals to this institutiona." (P. 8.)

- 127 Thorndike, E. L. Measurements of Twins. Archives of Philosophy, Psychology and Scientific Methods. No. 1, Sept., 1905. Columbia Univ. Contributions to Philos. and Psyc., v. 13, No. 3. Science Press, N. Y.

HEREDITY. In general, the conclusions indicate the very great importance of heredity in both mental and physical traits. The relative importance of heredity and environment weighed in several unique ways.

- 128 Thorndike, E. L. The Permanence of Interests and Their Relation to Abilities. Pop. Sci. Mo., v. 81, 1912.

EDUCATIONAL GUIDANCE. Finds rather high degree of permanency of interests, and also substantial correlation between interests and ability.

- 129 Thorndike, E. L. Significance of the Binet Mental Ages. Ps. Clin., v. 8, No. 7, Dec., 1914.

BINET TESTS. Using Goddard's data, Ped. Sem., v. 18, July, 1911; Dougherty's J. Ed. Ps., v. 4, 1913; Terman & Childs' J. Ed. Ps., v. 3, 1912; and Strong's Ped. Sem., v. 20, 1913; shows that Binet ages do not fit chronological ages of normal children, and gives corrections as follows:

VII 0	.....	6.8	IX 6	.....	9.75
2	.....	7.0	8	.....	10.0
4	.....	7.25	X 0	.....	10.25
6	.....	7.5	2	.....	10.5
8	.....	7.75	4	.....	10.75
VIII 0	.....	8.0	6	.....	11.0
2	.....	8.2	8	.....	11.6
4	.....	8.4	XI 0	.....	12.2
6	.....	8.6	2	.....	12.6
8	.....	8.9	4	.....	13.0
IX 0	.....	9.1	6	.....	13.4
2	.....	9.3	8	.....	13.8
4	.....	9.5			
			XII 0	.....	14.2*

*This last entry is from reference No. 121, p. 27.

- 130 Trabue, Marion Rex. Completion Test Language Scales. Columbia Univ. Contributions to Educ. No. 77. 1916. Pp. ix, 118.

MENTAL TESTS. Gives a large number of completion test exercises which have been carefully scored as to difficulty. Some of these have been combined into short scales which are convenient for the testing of groups of different mentalities. The work includes a key for the grading of each exercise. The scoring is therefore fairly objective, and the accurate grading for difficulty of the exercises makes them highly serviceable for use in group and individual testing.

131. Trabue, Marion Rex. Some Results of a Graded Series of Completion Tests. 537-540. Sch. and Soc., v. 1, No. 15, April 10, 1915.

MENTAL TESTS. This is a report of Trabue's early work with graded completion tests.

—————. See also (121).

- 132 True, Ruth S. Boyhood and Lawlessness. The Neglected Girl. New York: Survey Associates, Inc., 1914. Pp. xix, 215; iii, 143.

CRIMINOLOGY. This is essentially a study of the environmental conditions surrounding the juvenile delinquent.

- 133 Vickers, W., and Wyatt, Stanley. Grading by Mental Tests. J. of Exp. Ped., v. 2, No. 3.

EDUCATIONAL GUIDANCE. A consideration of the use of analogies, sentence completion and opposites tests in classification for educational purposes.

- 134 Vocational Guidance. Papers Presented at the Organization Meeting of the Vocational Guidance Association, Grand Rapids, Mich., Oct. 21-24, 1913. Bul. 587. Washington: Bureau of Education, 1914, pp. 91.

VOCATIONAL GUIDANCE. The problems of vocational guidance are considered from the viewpoint of the employer as well as the educator. The papers are particularly interesting as showing the early aims of the movement.

Wagoner, Lovisa C. See (116).

- 135 Wallin, J. E. Wallace. Hygiene of Eugenic Generation. *Psyc. Clinic*, v. 8, No. 5.
Heredity. This is an excellent presentation of the points of view of students of heredity who approach the problem with a Galtonian or a Mendelian bias. Wallin reports the findings of many investigators as to the inheritability of different acquired characteristics.
- 136 Wallin, J. E. Wallace. *The Mental Health of the School Child*. New Haven: Yale University Press, 1914. Pp. xiii, 463.
HYGIENE. The problems of the psychological clinic in its relation to the school child are considered from the standpoint of diagnosis and treatment.
_____. See also (7).
- 137 Weaver, E. W. *Vocations for Girls*. New York: The A. S. Barnes Co., 1913. Pp. 200.
VOCATIONAL GUIDANCE. Devoted to pointing out the vocational opportunities for women.
- 138 Whipple, Guy M. *Manual of Mental and Physical Tests*. 2 v. Warwick & York. Pp. xvi, 365, 336, 1914, 1915.
MENTAL TESTS: BIBLIOGRAPHY. This invaluable text presents practically all the standard anthropometric, motor, sensory, and mental tests, except the Binet Tests, together with a report for each test of its significance, as established by various workers. A bibliography is given at the conclusion of each chapter.
_____. See also (7).
Wilkinson, Madge W. See (116).
- 139 Williams, J. Harold, and Terman, Lewis. *Psychological Survey of Whittier School*. Contained in the Jan. and Feb., 1915, Numbers of *The Sentinel*, Whittier, Cal.
MENTAL RETARDATION: DELINQUENT GIRLS. Williams and Terman report on a number of earlier studies, including the following:
Emilie Renz: *A Study of the Intelligence of Delinquents*.

The Training School Bulletin, May, 1914, pp. 36-39. "Miss Renz applied the Binet test to 100 girls in the Ohio State Reformatory, and reported 36 per cent as certainly feeble-minded. . . The mental level was 3 years or more below normal in the case of 79 per cent and 4 years or more below with 58 per cent." The ages ranged from 11 to 18 years. "It is an interesting commentary on the psychological insight of our court officials and police that in every one of these cases the commitment papers had given the pronouncement 'intellect sound.'"

Helen Hill and H. H. Goddard: *Delinquent Girls Tested by the Binet Scale*. The Training School Bulletin, 1911, pp. 50-56. "Of 56 delinquent girls 14 to 20 years of age . . . almost half belonged either to the 9 or 10 year level of intelligence." "Apparently not far from two-thirds could reasonably be classed as feeble-minded."

Olga Bridgeman: *Delinquency and Mental Deficiency*. The Survey, June 13, 1914, p. 302. "Dr. Olga Bridgeman tested 60 delinquent girls at the State Training School for Girls, at Geneva, Ill., and found only 10 per cent with intelligence fully up to the normal, while two-thirds were mentally retarded 4 years or more."

Paul E. Bowers: *The Recidivist*. Amer. J. of Criminal Law and Criminology, vol. 5, pp. 404-415. "Bowers made a study of 100 recidivists in the Indiana State Prison and reports 23 per cent feeble-minded, 10 per cent epileptic, and 17 per cent otherwise mentally abnormal."

W. J. Hickson: *The Defective Delinquent*. Amer. J. of Criminal Law and Criminology, vol. 5, pp. 397-403. "Dr. W. J. Hickson, director of the psychopathic laboratory of the Municipal Court of Chicago, reports tests of 245 boys selected from 600 who had not been admitted to bail. Only a little over 7 per cent of these had average intelligence, some 10 per

cent were borderline cases, and the remainder were 'distinctly' of the moron grade."

G. G. Fernald: *The Defective Delinquent Class Differentiating Tests*. *The American J. of Insanity*, 1912, p. 523-594. Also *The Recidivist*. *Am. J. of Criminal Law and Criminology*, vol. 3, pp. 866-875. "Dr. G. G. Fernald's tests of 100 prisoners at the Massachusetts State Reformatory, Concord, showed that at least 25 per cent were feeble-minded. The proportion of feeble-mindedness among those brought before the juvenile court is thought by Dr. Fernald to be much higher than this."

St. Louis Post-Dispatch, May 23, 1914. "Of 38 applicants for parole at the Kansas State Penitentiary only 6 tested normal. Four others were slightly below normal, while the remaining 28, ranging in age from 23 to 58 years, had an intelligence level of from 7 to 12 years."

Williams and Terman quote Dr. Katherine Bement Davis' report on the first 1,000 cases entered at the New York Reform School for Women at Bedford (1912), as follows: "We have no hesitancy in pronouncing 157 of the total number feeble-minded. There is no question but what a proper mental test would show a much higher percentage of mentally subnormal."

- 140 Williams, J. Harold. *Retardation in Salt Lake City*. *Ps. Clin.*, v 9, No. 5, Oct. 15, 1915.

MENTAL RETARDATION. Gives detailed age-grade distribution of 18,268 pupils. A table giving the causes assigned by teachers for pupils' repeating grades shows that difficulty with school work of one sort or another is the most important cause. Calling age 6.5 to 7.5 normal for grade 1, and age 7.5 to 8.5 for grade 2, etc., results in 43.4 per cent being retarded. Approximately 5 per cent are retarded 3 years or more.

- 141 Williams, J. Harold. A Study of 150 Delinquent Boys. Bul. No 1, Feb., 1915. Research Laboratory of the Buckel Foundation, Dept. of Education, Stanford University.

MENTAL RETARDATION. Using Goddard's definition of feeble-mindedness, with the Stanford revision of the Binet Scale, results in 28 per cent being feeble-minded, 25 per cent borderline, 22 per cent "dull normal," 25 per cent normal or above. All the feeble-minded lie in the moron class. 6 per cent of the whites, 48 per cent of the negroes, and 60 per cent of those of Mexican and Indian blood, are feeble-minded. Gives data showing per cents of different groups committed for different offenses. Certain important conclusions are (a) "While the negro population in California constitutes but .9 per cent of the total, more than 15 per cent of the juvenile delinquents committed to the State institutions are of that race;" (b) that in this group of delinquents there has been much truancy and absence from school; (c) many boys have left school at an early age because of the lack of or inadequacy in the opportunity for industrial training or vocational guidance; (d) that of 126 boys who should normally have been expected to reach the eighth grade only 18 in reality succeeded in doing so; (e) geneological study shows that "in 17 per cent of the cases committed to this institution, one or more members of the immediate family have been committed upon similar charges."

- 142 Witmer, Lightner. Children with Mental Defects Distinguished from Mentally Defective Children. *Ps. Clin.*, v. 5, No. 7, Dec., 1913.

MENTAL RETARDATION. The value of differentiating in connection with treatment between the mentally defective and those who have one or more mental defects is stressed.

- 143 Witmer, Lightner. The Exceptional Child and the Training of Teachers for Exceptional Children. *Sch. and Soc.*, v. 2, Aug. 14, 1915.

EDUCATION OF EXCEPTIONAL CHILDREN. A brief history of the teaching of defectives, and a plea for specially trained teachers for children of this class.

- 144 Wooley, Helen Thompson, and Fischer, Charlotte R. Studies from the Laboratory of the Vocation Bureau, Cincinnati. Ps. Monographs, v. 18, No. 1, Dec., 1914, whole No. 77.

VOCATIONAL GUIDANCE. Gives norms of accomplishment of 146 15-year-old working boys and girls in 15 traits—7 of them mental. The full presentation of data enables estimation of correlations between test results and school grades reached. These correlations are, without exception, low.

Wyatt, Stanley. See (133).

- 145 Yerkes, Robert M., and Anderson, Helen M. The importance of Social Status as Indicated by the Results of the Point-Scale Method of Measuring Mental Capacity. J. Ed. Ps., v. 6, No. 3, Mar., 1915.

ENVIRONMENT. Material differences in mentality are found in groups of different social status. It is claimed that it is necessary to have separate norms for these various groups. This article is the same as Contributions from the Psychopathic Hospital, Boston, Mass., No. 65, 1915.

APPENDIX C.

SUMMARY OF FINDINGS.

1. The Texas State Juvenile Training School boy is of about average height, but he is heavier and has a greater lung capacity than the average. He is below the average in strength of grip—further below with the right hand than with the left—and is below in speed of tapping.

2. The younger delinquents are relatively more advanced physically than the older ones.

3. Head measurements are not markedly exceptional. The number of scars on the cranium run from zero to eight. The older boys show many more cicatrixes than the younger ones. Where the history is known it is found that many of these have been caused by fighting, being hit by rocks, etc.

4. The measurement of pubertal development is largely dependent upon the personal judgment of the examiner, but there seems to be evidence that these boys are materially retarded in this respect.

5. A large amount of serious eye defect, totally uncorrected by glasses, is found. There is also considerable defective hearing.

6. Retardation in mental capacities is pronounced—the higher the type of mental activity considered the greater the retardation.

7. The median delinquent boy of Texas is found to lie at about the 55th percentile of normal boys of his age in his physical measurements; the 45th percentile in his strength of grip; the 40th percentile in his speed of tapping; probably somewhere near the 40th in his sensory equipment; the 25th in his physiological development; the 30th in his perceptual and memory capacity; the 15th in his powers of analysis, inference and deduction, and within the 1st percentile in his school standing.

8. Environmental conditions and poor sensory equipment contribute to delinquency, but a more fundamental cause is to be found in unequal mental development—in the possession

of certain strong emotions without, at the same time possessing the usual adequate intellectual powers of control.

9. The tabulation of data for a single individual upon a percentile basis gives more accurate and detailed information about the individual than that revealed by a tabulation upon the basis of number of years retarded or that expressed in terms of development quotients.

10. The adequate case study should include depositions of relatives and acquaintances; early school and institution records; mental and physical examination of the subject, and an etiological investigation.

11. On the basis of an adequate case study it is possible to classify a delinquent and to state the specific kind of education which will meet his needs.

12. The specific changes necessary in the commitment, education and placement of delinquents in order to insure the most efficient handling of the individual and the greatest safeguard to society can be accomplished by the earnest co-operation of the men and women of the State of Texas.

FINIS.

Kelley

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