

A STUDY OF PROBLEM CASES SENT FROM
THE LAWRENCE PUBLIC SCHOOLS TO THE
PSYCHOLOGICAL CLINIC OF THE
UNIVERSITY OF KANSAS

by

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CHAPTER I

INTRODUCTION.

The Psychological Clinic of the University of Kansas was established to aid problem children of the Lawrence public schools to make more adequate adjustment to school environment and requirements. The clinic also provided an opportunity for students of the University to receive careful training in psychological and educational diagnosis of problem children. Problem children, from the Lawrence Kansas school system, were reported to the clinic during the school years 1918-1919, 1919-1920, 1920-1921, 1921-1922 and 1923-1924.

The rate at which clinics are being incorporated signifies that school administrators are beginning to recognize their value. Twenty-five years ago psychological clinics were very rare. A brief discussion of some of the present-day factors that are potent in the production of maladjustment will indicate some reasons for the growth of the clinic movement. All of the states now have compulsory school attendance laws. Nearly all of these laws have been passed within the last half century. Previous to the enforcement of the compulsory school attendance laws, pupils dissatisfied with school could voluntarily withdraw at any time. The result was that the school enrollment included in the main

only those who could adjust themselves to the school environment. To-day the child is compelled to attend school in which the curriculum has not been adapted to the individual differences in general intelligence nor to the individual differences in special aptitudes and defects. Hollingworth¹ states, "Those who need a very wide latitude in school organization constitute possibly twenty per cent of the school population, the highest ten per cent and the lowest ten per cent in general and special ability." The lock step system of promotion, based on chronological age has been used very generously in the United States. It was not until the results of intelligence tests were widely disseminated that educators began to realize the extent of school grade misplacement of pupils and some of the causes of maladjustment.

A. General statement of the problem.

The aim of this study is to indicate some of the ways in which the clinic group deviates from unselected groups and if the deviations appear to be significant enough to produce maladjustment to school. For specific statement of problem, see Chapter III.

B. Value of study to education.

In this study an attempt will be made to gain a better understanding of the problem child and the factors that hinder him from adjusting himself to the school. School administrators and teachers, aware of the difficulties of

the problem child, may often manage to have the school environment, curriculum and methods of instruction modified so as not only to prevent the development of various types of maladjustment but to correct them after they have made their appearance. That there are many children in the public schools who are problem cases is shown by the study of Terman? In one county and one city of California, he requested the teachers to report for psychological test examination, all pupils who were seriously overage for their school grade. Of the 1,464 pupils enrolled, 62 or 4.24 per cent, were classified as feeble minded and 29 or 1.98 per cent, as border zone cases.

C. Selection of the cases sent to the Psychological clinic of the University of Kansas.

The teachers of the Kindergarten and the first eight grades of the Lawrence, Kansas school system had the privilege of reporting for examination any child who in their judgment exhibited unusual reaction trends to school environment and requirements. This unusual response might be evidenced in conduct disorders either in the school room or on the playground, mental and educational acceleration or retardation, special aptitude or difficulty in one or two subjects, laziness and personality defects.

D. Purpose of a clinical diagnosis.

The purpose of each individual diagnosis is to find the cause of the pupil's maladjustment and then to offer

suggestions, to parent, teacher or guardian, whereby remedial treatment may be provided most effectively.

CHAPTER II

LITERATURE RELATED TO THIS STUDY.

An enormous amount of literature has been published about the problem child. Much of it deals with children whose difficulties have become so serious that they have had to be segregated. Because of their outstanding disorders, they have been confined in State industrial Schools, state hospitals for the insane and feebleminded, detention homes, parental homes, charitable institutions, reformatories etc.

Very few thorough studies including the evaluation of mental, physical and social status have been made of problem children in the public schools. Where ungraded, opportunity or special classes are provided, pupils for these rooms are often selected on the basis of failure in school work plus a low score on an intelligence test. If the quantity of literature printed concerning a particular subject represents the degree of interest of the public, society seems to be more interested in the child after he has gone wrong than in preventing him from becoming a misfit in society.

The writer has summarized representative studies which seem the most significant.

A. Studies made of an unselected group of school children to determine the number of problem cases.

1. National Committee³ for Mental Hygiene,

"Report of Mental Hygiene Survey of Cincinnati."

Mental Survey of Cincinnati, pp.71-82.

This survey included a study of 4,326 public school children in Cincinnati. The survey included a physical examination of each child. An intelligence rating was secured by means of group tests except in the case of the youngest children, (6 years of age) who were given individual psychological examinations. Personality evaluation was made of each child. Educational ratings were secured from the school records and conferences with teachers. All children showing conduct disorders, personality difficulties, intellectual retardation, school retardation, speech defects etc., were given more intensive psychiatric and psychological examinations.

Of 4,326 children in the survey, 4155 were native born. There were 4,055 white children and 271 colored children. Thirty nine per cent repeated 2,250 grades at a cost of \$14,300. Mentally, 29.5 per cent were underage and 43.3 per cent were overage, 1 to 8 years for their grade. Two per cent were classified as feebleminded; 2 per cent as cases of borderline mental defect; 3.5 per cent as nervous or psychopathic; 2 per cent epilepsy; .7 per cent suffering from endocrine disorder. Three and three-tenths per cent of the "normal" children had conduct disorders. Thirteen and

nine tenths per cent of the subnormal, 14 per cent of the feebleminded and 43.4 per cent of the nervous and psychopathic children had repeatedly exhibited socially unacceptable behavior. The delinquency problem lies primarily in the psychopathic group. Approximately 66 per cent were suffering from disease or physical defect.

B. Studies made of problem boys and girls.

1. Wallin,⁴ J.E. Wallace. "Problems confronting a clinic", Mental Hygiene January 1920. p.22.

J.E. Wallace Wallin, director of the St. Louis Psycho-Educational clinic, made a study of 1955 school cases, examined at the request of school authorities from September 1914 to June 1919.

One third of those sent to the clinic for examination was feebleminded. The feebleminded and borderline classes constitute .94 per cent of the enrollment in the elementary schools of St. Louis. Of the mental defectives, there were twice as many boys as girls that had delinquent records. Seventeen per cent of the cases were delinquent. Fully 80 per cent of the delinquent boys were subnormal, but only 11 per cent were feebleminded. The number of delinquents who were of borderline or backward grade of intelligence is far greater than the number of feebleminded. Eighteen per cent of the whole group possessed speech defects. Speech defects of the clinic cases were six times as prevalent

as in an unselected group. Thirty four and four tenths per cent of the idiots and imbeciles were speech defectives.

2. Haggerty⁵, M.E. The Incidence of Undesirable Behavior in Public School Children. J. of Ed. Research Sept. 1925. p.102.

A school population of more than 800 pupils was surveyed with a view of finding behavior symptoms. First of all, each teacher was asked to catalogue according to schedule provided, the frequency of occurrence of undesirable behavior in the life of each child in her room. In the second part, each teacher was asked to rate on five point scales, the several children in her room as regards their standing on each of a list of 37 traits.

Behavior of an undesirable type appeared in 51 per cent of the pupils. Disinterest in school work shows the highest frequency and it is closely followed by cheating, unnecessary tardiness and lying.

3. Blanchard and Paynter⁶. "Problem Child." Mental Hygiene January 1924. p.37

The Child Guidance Clinics conducted by the National Committee for mental hygiene made a study of five hundred children who were considered problems at home or school. The problem group was compared with an unselected group of three hundred thirty seven children.

All were given medical, psychiatric and psychological examinations and the social history of each case was obtained. The examination of the five hundred problem children was requested by parents, teachers, local physicians, social service agencies and judges of the juvenile court. The following conclusions were reached:

- (a) The ratio of white to colored children and of children of American born parents to those of foreign born parents was approximately the same in the problem and control groups.
- (b) Almost twice as many boys as girls were found in the problem group.
- (c) About five times as many of the problem as of the control group were diagnosed as mentally defectives.
- (d) About twice as many of the problem as of the control group had speech defects. Approximately three times as many children with marked physical defects were found in the problem as in the control group.
- (e) About three times as many of the problem group had personality difficulties. Six times as many of the problem children showed conduct disorders.
- (f) There were twice as many cases of endocrine disturbance in the problem group.
- (g) Practically the same percentage of children in the two groups had I.Q.'s between 80 and 90. Below this

range, the lower the I.Q., the greater the percentage in the problem group as compared with the control group; above this range, the higher the I.Q., the smaller the percentage in the problem group.

(h) Two and a half times as many of the problem children as of the control group were graded above their intellectual level. The study of the individual cases showed that the same problem can be the outcome of various underlying causes and that school retardation was the result of other factors than intellectual dullness or mental defect.

4. Durea, Mervin. "Individual Variability in Test Performance." J. of Delin. Mar. 1922 p.47.

An intensive individual study was made of several hundred cases brought to the clinic for examination. Family history, medical findings, cottage reports and psychological findings were recorded. In this study, there were one hundred fifty cases, who were nine, ten and eleven years mentally, with fifty cases in each mental age level. They were sent to the clinic by the Juvenile Court, parents, principals of schools and by charitable organizations. These cases were selected because they exhibited signs of social maladjustment or non-dependability.

Four tests were used (a) Stanford Binet, (b) Kent Rosanoff association tests, (c) Literacy test

standardized by Florence Matur, (d) Sequin form board, Porteus Maze test, Healy pictorial completion board. The chronological ages for the three mental age groups show similar variability. In the Kent Rosenoff association tests, the number of individual reactions ranged from twenty to eighty four. The interrelations of test values for each mental age were found to be surprisingly low. (5) Bartlow, and Haines, "Mental Rating of Juvenile Dependents and Delinquents in Alabama." *Journal of Applied Psychology*. Dec. 1919. p. 291.

A survey conducted in four industrial schools in Alabama included the Boy's School at East Lake (307 white boys); State Training School for Girls at Birmingham (45 white girls); the Mercy Home Industrial School for girls at Birmingham (30 white girls); and the Alabama Reform School for juvenile Negro law breakers at Mt. Meigs (264 colored boys). The children ranged in chronological age from seven to twenty years. All but eight of the three hundred four children were retarded one or more years in school. The percentage of feeble-mindedness was as follows: white boys, 14 per cent; white girls, 31 per cent; Negro boys, 22 per cent. (6) Bridgman, Olga. "An Experimental Study of Abnormal Children with Special Reference to the Problems of Dependency and Delinquency." Berkeley University of

California Publications in Psychology Vol.3. Nol. Mar. 30, 1918.

This is a report embodying intelligence tests and supplementary data regarding two hundred five children sent to the psychological clinic of the University of California Hospital in San Francisco. The children came from various agencies and were classified by the author into two groups; delinquent and dependent. The Binet Test ratings, supplemented with social data, indicate that 36 per cent of the delinquent group were feeble-minded, 32 per cent were backward and 32 per cent were normal. Among the "normal" group, individual cases of various abnormal physical conditions were found. The environmental factors roughly classified indicate a preponderance of unfavorable conditions.

(7) Wembridge,¹⁰ Harry. "An Investigation of Mental Deficiency among the Juvenile Delinquents of New York City." J. of Delinquency. Sept. 1919 p.212

A survey was made in the interest of the Department of Charities. Because of the time and expense necessary to give examinations to 24,000 children it was decided to get a fair sampling of the cases as a whole. The exceptions to the random selection were that no foreign born children were examined, none who had not attended the public schools, and none with any physical defect that might hinder their taking the test.

An hour or more was devoted to giving each child the Stanford Binet test.

A higher per cent of mental inferiority was found for delinquent girls than for delinquent boys. There was no appreciable difference between the per cent of mental inferiority for destitute girls and destitute boys. The results showed that the Jewish children had less mental inferiority than the non-Jewish whites and that the non-Jewish whites had less feeble-mindedness than the Negro children. Among the destitutes a large number of very superior children were found. Eleven per cent of the Negro children were supernormal.

(8) Poull¹¹ Louise. "Mental Status of Truants." Ungraded, Oct. 1919. p.1-8.

This study included six hundred eight cases. The percentage of truants whose intelligence was above the normal median was 15 per cent. The truants formed a subnormal group. A large per cent of truants, instead of being definitely defective mentally, were of borderline intelligence. The remedial advice offered was that the truants be placed in an ungraded class, having an industrial training course, organized to meet individual needs.

(9) Melville¹² N. "An Organized Mental Survey in Philadelphia Special Classes." Philadelphia Psychological Clinic. Feb. 15, 1916. p.63.

In 1915, the Philadelphia School of Pedagogy in cooperation with the Division of Medical Inspection and the Department of Instruction of the Public Schools, organized a system of psychological testing.

The Binet test and Knox cube tests were given to 863 pupils in the special classes. In order that the total Binet age might not obscure certain important factors, concerning the pupils tested, they have been classified in growth periods according to their ability to pass four out of five of the tests for III, VI, IX and XII years. The pupil who failed to pass the III year tests was classified at the level of early infancy in his intellectual development. A pupil who passed III but failed on the VI year old tests, was classified at the level of later infancy; if he passed VI, but failed IX, he was classified at the level of early childhood; if he passed IX and failed XII, he was in the later childhood period and if he passed XII, he was classified at the level of adolescence or higher.

Two per cent of the pupils appeared at the level of early infancy; 13 per cent at the level of later infancy; 63 per cent at the level of early childhood; 16 per cent at the level of later childhood and 2 per cent at adolescence. The first group ranged from four to nine years below normal in intellectual development, and

from five to twelve years old chronologically. The second group ranged from one to twelve years below normal, and from six to fifteen years old chronologically. The third group ranged from one to eleven years below normal and from seven to eighteen years old chronologically. The fourth group ranged from one to six years below normal and from seven to fifteen years old chronologically. The last group (adolescent level) ranged from one to three years below normal and from twelve to fifteen years chronologically.

(10) Blanton³ Smiley. "Retarded School Children in Madison Wisconsin." Psychological Clinic. Feb. 1917 p.250.

On the assumption that the ability to meet the requirements of the ordinary school curriculum taught by a teacher of average skill and patience is probably as good a test of a child's mental ability as the Binet Simon and other tests, this survey was made to ascertain who had entered school at the usual age of six years but for no good reason had dropped back three years. Certain cases in the first and second grades who were obviously retarded, were counted, although not three years retarded. Two and nine tenths per cent of the 3,631 pupils in the survey, were unable to pass the test. The feeble-minded constituted .6 per cent of the school population.

(11) Holt, Meranski and Snell¹⁴ "Mental and School Attainment of 1007 Retarded Children in Massachusetts." J. of Ed. Psy. May 1924. p.84.

This study is based on the examination of 1,007 retarded children and includes the determination of mental age, intelligence quotient and proficiency attained in each of the following subjects; reading, arithmetic, spelling, writing, geography, and language. The group was composed of 357 girls and 650 boys. The chronological age varied from seven to thirteen years inclusive and about half of the children were under thirteen years and 44 per cent had a mental age of less than eight years. More than two thirds (67.3 per cent) had an intelligence quotient of less than 70 and would ordinarily be classified as feeble minded. The remaining third (32.7 per cent) included the difficult borderline cases and four pupils with an I.Q. of 100 or over. The performance of these children, in school subjects varied considerably. The extremes were spelling, in which a majority (60.7 per cent) failed to make the grade corresponding to their mental ages, and writing in which more than half (53.9 per cent) were above the grade to which their mental ages entitled them. Stanford Revision tests were given by traveling clinicians.

(12) Mc Cully,¹⁵ Selinda. "A Study of 1000 Cases of School Children Who Do not Conform to School Routine." Philadelphia Psy. Clinic. Mar. Apr. 1933 p.9

A group of retarded children were given three performance tests: (a) Witmer form board; (b) Witmer cylinder; (c) Healy construction test A. The children were selected by the principals of the public schools because they were unable to succeed in regular school work. A few of the cases were also disciplinary. Only a small percentage of the cases were feebleminded. The majority were dull children, who possess enough competency to earn a living after leaving school.

The retarded group varied very little from an unselected group in weight and height. In every field of accomplishment, these children were less efficient than the average child. They were no more gifted in motor ability than in intellectual ability.

(13) Carter,¹⁶ William. "Physical Handicaps in Problem Children." Mental Hygiene January 1936. p.75.

This study was based upon a physical examination of three hundred problem children in Los Angeles, California. They were presented to the clinic for examination by parents, truant officers, teachers, social workers, and Juvenile Court authorities. Very few were mentally defective or had court records. Their misconduct ranged from minor behavior reactions based on poor habits formed at home to more serious offenses. All of the children

possessed physical defects, many of which were remediable. Physical defect associated with faulty home training, domestic discord, educational difficulties and mental conflicts characterized many of the social misfits.

C. Studies Made of Delinquent girls.

(1) Bromer,¹⁷ Augusta T. "A Comparative Study of the Intelligence of Delinquent Girls." 1914.

This is an experimental investigation carried on with four groups of subjects: (1) thirty-six women students of Barnard College and Teacher's College, Columbia University; (2) thirty delinquent girls; (3) thirty-four members of evening classes in a social settlement and a branch of the Y.W.C.A.; (4) twenty-nine domestic servants.

They were given the easy opposite, and hard opposite memory test for words; Ebbinghaus completion test; Fernald's ethical discrimination test and an original modification of the completion test which also involved moral judgments. A test of physical endurance was also given.

The results showed that the college group was far superior to the other three groups. The members of the evening class ranked second. In some cases the delinquents surpassed the servants. In the test of physical endurance, the college girls were much more willing to

endure physical discomfort for the sake of a good record than the delinquents. Since the members of the servant and delinquent groups were quite on a par mentally, and since the servant group made a living without having been delinquent, the author concluded that lack of mental capacity in itself, did not explain the fact of delinquency.

(2) Fernald,¹⁸ Grace. "Report of the Psychological Work in the California School for girls." J. of Delin. Mar. 1916 p.76.

The Binet Simon, the Stanford Revision and John Hopkin's Revision tests were given to one hundred twenty four girls. Their accomplishment in formal school subjects was also found. Thirty-four per cent were feebleminded, 36 per cent were normal and nine individuals were of superior intelligence. No cases were classified as borderline, which graded up to twelve years mentally by either of the series of tests. The above classification was based on test, previously mentioned and on six months to a year of careful follow up work.

The girls were uniformly poor in concentration, easily fatigued and with very few exceptions emotionally unstable. The education received by these girls was undoubtedly better than that for most similar groups because of the educational laws of the state.

(3) Anderson,¹⁹ John. "A Mental Survey of the Connecticut

Industrial School for Girls." J. of Delinquency. Jan. 1921. p.11.

During the years 1919 and 1920, a mental survey was made of the inmates in the Connecticut Industrial School for girls at Middletown, Connecticut. This institution received girl offenders between the ages of eight to sixteen years. They could then remain under the guardianship of the institution till they were 21.

All (311) were given the Yerkes Bridges Point Scale. Subsequently, one hundred ninety seven girls from this group were given the Army Alpha Form 6. Approximately $1/5$ of the delinquents were found to be mentally defective; $1/4$ were borderline cases; $1/4$ were dull; $1/5$ were normal and $1/13$ were superior on the basis of the individual examinations. The mean mental age of the group was twelve and seven tenths years. The mean chronological age of the group was sixteen years. Sixty-three and five tenths per cent of the girls were retarded two or more years; thirty and five tenths per cent were retarded four or more years.

D. Studies of Delinquent Boys.

(1) Williams,³⁰ Harold J. "The Intelligence of the Delinquent Boy." Journal of Delinquency. Monograph No.1, Jan. 1919.

This monograph was the result of the study of 470 delinquent boys, mostly of Whittier State School but

includes some cases also from the Detention Homes at Los Angeles and San Diego. The author examined all with the Stanford Binet Revision. Trained field workers supplied the family histories and information on home and environmental condition. Each boy was given a medical examination. The cases were divided into Terman's five well known social intelligence groups. After a medical examination had been given, each case was tentatively classified on the basis of I.Q. The further consideration of the data from the other sources called for a modification of this preliminary classification in but a few cases.

Nearly all of the feeble minded were of moron grade. A few were classified as imbeciles, but none as idiots. The family history studies revealed that the frequency of mental deficiency among parents and other relatives of the delinquents decreased as the grade of intelligence of the latter increased. Most of the group had committed offenses repeatedly. The average I.Q. of those who committed offenses against persons was 73; for those who committed offenses against property and peace and order, the average was 80. Negroes and Mexican Indians showed a greater tendency to delinquency than the whites. There was no evidence in the results that indicated that there was any direct inheritance of delinquency as such. Other factors, related

to delinquency appeared to be inherited of which lack of intelligence was the principal one.

(2) Ordahl,³¹ George. "A study of 341 Delinquent Boys." J. of Delin. May 1916. p.72.

This study was undertaken to secure a more scientific classification of the inmates of the St. Charles School for boys at St. Charles, Illinois. St. Charles School is an institution for the training of delinquent boys. The psychological examination was made by means of the Stanford Revision and by the Fairbault Revision of the Binet Simon Test.

The subjects cannot be said to be entirely unselected. Twenty five were examined at the request of the management, because they were thought to be especially defective. Fifty boys registered in the first grade were likewise chosen. Aside from this partial selection, an equal number of subjects was drawn from the various cottages.

If three years retardation is the criterion for feeble-mindedness, then fifty per cent were feeble-minded. If an I.Q. of 70 is accepted as the dividing line below which all are feeble-minded, then 19.6 per cent were feeble-minded. The population of the school as a whole was below the average stature and development. Fifty per cent of the inmates were afflicted with defective tonsils and adenoids. Sixty-seven per cent were

addicted to the use of cigarettes. The median school standing of the group was a grade and a half below what it otherwise would have been on a mental age basis. This fact indicates that mentality alone was not responsible for the low grade classification of the group.

The most frequent offense was stealing; fifty per cent of the cases being committed for this offense. If the morons and hardened cases are excluded, one thing stands out clearly, namely, that it was the blind impulse for adventure and excitement and the suppression of these natural impulses which was responsible for the boys' delinquency.

(3) Kelly,²² Truman Lee. "The Mental Aspects of Delinquency." University of Texas Bulletin No. 1713 Mar. 1, 1917.

The delinquent boys in the Gatesville Industrial Schools were given (a) physical tests, (b) psycho motor tests, (c) Binet Simon test, (d) Kelley's constructive ability test and (e) Trabue's completion test. The delinquent boys were found to be .11 of a year advanced in height, .42 of a year advanced in weight and slightly superior in vital capacity to an unselected group of boys. In pubertal development, grip and tapping, the delinquents were inferior to norms. All mental tests showed that the delinquents were very inferior mentally

to an unselected group. Twenty per cent were feeble-minded and probably fifty per cent were incapable of being taught to look after themselves in an environment as unfavorable as the one from which they came.

(4) Mc Cord,³³ Clinton P. "Physical and Mental Conditions of Delinquent Boys." J. of Delin. Sept. 1922 p.30

The mental and physical condition of one hundred delinquent cases at the Berkshire Industrial Farm at Canaan, New York were compared with that of one thousand Albany school children of approximately the same age. Abnormal conditions of the nose and throat were four times as common among the delinquent boys. Defective vision was less prevalent among the delinquents. The evidences of early rickets existed eight times more frequently among the delinquent boys. Discharging ears were five times more common among the delinquent boys. The item of greatest significance was the relative incidence of mental deficiency (I.Q. below 70). This condition was five and a half times more common among delinquents and if borderline cases were considered mentally deficient, the delinquents had twenty-three times as much mental deficiency as an unselected public school group. The Stanford Revision test was used to measure intelligence. A very large percentage were of such dull intelligence, complicated with emotional instability that they required a special program of

treatment drawn up along physical, industrial, social and recreational lines with provision for a maximum of hand work. Thirty-five per cent of the delinquents were physically retarded.

E. Studies of Juvenile Court Cases.

(1) Montague,²⁴ Helen. "Psychopathic Clinic of the Children's Court of the City of New York." Mental Hygiene. Oct. 1919 p.650.

During the year 1918, a careful mental and physical examination was made of 1083 children sent from five of New York's child courts. The judges sent to the clinic those cases which they recognized as not being mentally normal. Their chronological ages ranged from six to thirteen years. The environment of forty-nine and eight tenths per cent was unfavorable. Eighty-two per cent deviated mentally from the normal. The heredity was considered unfavorable when syphilis, insanity, mental deficiency, epilepsy, tuberculosis or alcoholism was found among the ancestors.

SUMMARY.

A majority of the studies listed in this chapter, emphasize the intellectual development of problem children. A few studies include a brief discussion of the social life and home conditions of their subjects. Occasionally the prevalence of physical defects in the problem group is

compared with that for an unselected group, or the physical development of a problem group is compared with that of fixed norms. Nearly all of the studies that have been summarized are concerned with children whose maladjustment was evidenced in some form of delinquency. Since Pintner has made a thorough study of the literature, dealing with the delinquent child, his summary will be quoted.

"From a belief in a very large percentage of defective mentality among delinquents, we have come to suspect that this percentage is only about ten or fifteen, with some workers intimating that it may not differ from the percentage of feeble-mindedness found in the general population. As the emphasis upon defective mentality has decreased, there seems to be arising an attempt to find the difference between the delinquent and non-delinquent in other mental factors. As to the importance of environmental factors, there seems to be the usual difference of opinion, but the general belief of the psychologist seems to be in the greater potency of original nature. All reports so far have agreed in finding a much smaller percentage of delinquents of superior intelligence as compared with the amount of superior intelligence supposed to exist in the population at large. There seems to be agreement in the finding of a larger proportion of defective delinquents among female as opposed to male delinquents. Other things being equal, however, an individual of defective mentality is more likely to become delinquent

than one of normal or superior mentality."

CHAPTER III

PROBLEM, DATA AND METHOD.

A. Specific statement of problem.

The aim of this study is to discover:

(a) Whether any particular school grade, sex, race or stage of mental development is outstandingly represented in the clinic group.

(b) What the physical status of the clinic group is as ascertained by a comparison of correlations between mental and physical development for it and a group of students in the Horace Mann School of Columbia University, New York City; and by a comparison of the prevalence of functional and physical defects in the clinic and an unselected group.

(c) If the clinic children possessing certain physical and functional defects are inferior mentally to the clinic children not afflicted in the same manner.

(d) If the clinic group differs from an unselected group quantitatively in intelligence.

(e) Whether the differences in the I.Q. distributions of the clinic group and an unselected group are to be found in the I.Q. distributions of particular chronological age groups, sex or race.

(f) If there are types of mental ability in which the clinic group functions more or less adequately than an

unselected group.

(g) The prevalence of three of the traits of psychopathy in the clinic group.

(h) If on the basis of Strayer's standard of gradation, the clinic cases are mentally and chronologically at grade.

(i) Whether the differences in the mental and chronological age grade distributions of the clinic cases and Strayer's standard of gradation are found in the mental and chronological age grade distributions of any particular race or sex or in the mental age grade distributions of particular chronological age groups.

B. Data.

The subjects of this study were sent from the Lawrence Kansas school system to the Psychological Clinic of the University of Kansas, where they were examined by members of the Psychological Clinic class. Fourteen cases, which were given the Yerkes Point Scale and ten cases for which the Terman Binet Scale is not complete are not included in this study. All cases were examined mentally and physically and, whenever possible, the hereditary, developmental and social histories were secured. Each child was tested mentally on the Stanford Binet Scale and the Sequin form board. His physical test included: weight; height, both standing and sitting; lung capacity, measured by the wet spirometer; auditory acuity measured by the whisper test;

vision, measured by the Snellen chart; inspection of tonsils, adenoids and teeth; observation of speech defects and nerve signs.

C. Method of procedure.

The method of procedure will be graphical, statistical and descriptive. Certain comparative features with other investigations will be used.

D. Limitations of the Study.

(a) Although members of the class had observed several demonstrations and had tested their classmates under supervision, their testing probably was not always as reliable as that of a professionally trained psycho-
clinician.

(b) The sessions of the Psychological Clinic were held from 1:30 to 4:30 P.M. The Children sometimes showed symptoms of what might have been fatigue. However, the type of activity involved and the novelty of the situation would tend to eliminate the necessity of taking this element into serious consideration. Retests made in some cases showed no significant changes.

(c) Some of the other limitations of the study are inadequacy of social data; impossibility of extended conference with teachers, parents and others responsible for the child; lack of educational tests and quarters available for the testing.

CHAPTER IV

PRESENTATION OF DATA.

Since the stated purposes of this study are to determine as far as possible, from the data that are available, the ways in which the clinic group deviates from an unselected group and if such deviations appear to be significant enough to be factors in the production of maladjustment, charts, tables and graphs have been arranged to present such data.

Table No.1 shows the race and sex distributions of the clinic group.

In this study, Strayer's standard of gradation is used to determine if a pupil is mentally and chronologically at grade, overage or underage for his school grade. Strayer² considers that a pupil is at grade for the first grade if he is less than eight years; at grade for the second grade, if he is eight and less than nine years of age; at grade for the third grade if he is nine and less than ten years of age. Chart No.1 shows the chronological age grade progress of the clinic cases. Within the heavy black and dotted lines are shown the number of cases chronologically at grade. All cases above the heavy black lines are chronologically underage for their grade. All below the heavy black lines are chronologically overage for their grade.

Chart No.1 also shows the chronological age and grade distributions of the clinic cases.

Chart No.2 shows the mental age grade progress of the clinic cases. Within the heavy black and dotted lines are shown the number of clinic cases that are mentally at grade. All cases above these lines are mentally underage for their grade, and all cases below the heavy black lines are mentally overage for their grade. Chart No.1 also shows the mental age distribution of the clinic cases.

Chart No.3 shows the number of Whites in the clinic group that are chronologically at grade, overage and underage for their grade. This chart also shows the chronological age and grade distributions of the Whites.

Chart No.4 shows the number of Negroes in the clinic group that are chronologically at grade, overage and underage for their grade. Chronological age and grade distributions of the Negroes are a part of this chart.

Chart No.5 shows the chronological age grade progress of the boys in the clinic group. In it are also found the chronological and grade distributions of the boys.

Chart No.6 shows the chronological age grade progress of the girls in the clinic group and their chronological age and grade distributions.

Chart No.7 shows the number of White children in the clinic group that are mentally at grade, overage and underage for their grade. The mental age and grade distributions

of the Whites are included as a part of this chart.

Chart No.8 shows the mental age grade progress of the Negro children in the clinic group and their mental age and grade distributions.

Chart No.9 shows the mental age grade progress of the boys in the clinic group, along with their mental age and grade distributions.

Chart No.10 shows the mental age grade progress of the girls in the clinic group. The mental age and grade distributions form a part of the chart.

Table No.2 shows the weight, standing and sitting height of 7,8,9,10,11 and 12 year old norms and of 7,8,9,10, 11 and 12 year old clinic cases. For the number of clinic cases having records of physical development, see tables A. B.C. in the Appendix. Measurements of norms are taken from Baldwin's, "The Growth of School Children from Birth to Maturity."

Table No.3 shows the correlations between the physical and mental development of the clinic cases and of a group of students in the Horace Mann School.²⁶ This table is a summarization of Tables A,B,C, in the Appendix. No record was made of the physical development of many of the clinic cases.

Table No.4 shows the I.Q.'s of clinic cases afflicted with particular physical and functional defects and the I.Q.'s of clinic children not afflicted with the same

defect.

Table No.5 shows the prevalence of four physical and functional defects in an unselected group of children studied by Cubberly²⁷ and in the clinic group. However, Cubberly does not state what standards of physical fitness were adopted by the testers of the unselected group.

Table No.6 shows the mental classification of the clinic cases and 1000 unselected children studied by Terman.²⁸

Terman's social classification based on I.Q. is as follows:

I.Q.'s

0- 69 = Feebleminded

70- 79 = Borderline

80- 89 = Slow, dull

90-109 = Normal

110-119 = Superior

120-139 = Very superior

140-- = Genius

The boundary lines between such social groups are absolutely arbitrary and a matter of definition only.

Terman's social classification based on I.Q. has been used in this study, instead of the I.Q. distribution with equal intervals, because the former plan can more easily and definitely be discussed. However, in order to secure greater accuracy, the medians, means and standard deviations are based on I.Q. distributions with equal intervals. (Table D in the Appendix)

Table No.7 shows the mental classification of the clinic cases when fourteen years instead of sixteen is used to determine the I.Q. of those clinic cases that are fourteen or more years of age. Graph No.1 is based on the data in tables 6 and 7.

Table No.8 shows the mental classification of the boys, girls, Whites and Negroes constituting the clinic group. The medians and standard deviations are based on the I.Q. distributions in Table E. of the Appendix. Graphs 2 and 3 are based on the data in Table No.8.

Table No.9 shows the median and range in mental age, school grade and I.Q. of each chronological age group.

Table No.10 shows the number and per cent of the clinic cases and of norms, reported by Terman²⁹ that passed the separate tests of the Stanford Binet Scale. Graphs Nos. 4, 5, 6, 7, 8 and 9 are based on the data in Table No.10.

Table No.11 shows the number and per cent of each chronological age group that has a range of four or more years above basal age. Basal age in the Stanford Binet Scale is the last year in which all tests (five) were passed.

Table No.12 shows the correlation between range above basal age and the difference between mental ages on the Sequin form board and the Stanford Binet Scale.

Table No.13 is a summarization of charts, Nos.1,3,4,5 and 6. In addition this table shows the chronological age

grade progress of school children in 352 cities. Table No.14 is a summarization of Charts Nos. 2,7,8,9 and 10.

Table No.1

Table showing the race and sex distributions of the clinic group.

<u>578 Cases</u>			
311 Boys		267 Girls	
<u>264 Whites</u>	<u>47 Negroes</u>	<u>219 Whites</u>	<u>48 Negroes</u>

Chart No.1

Chronological age, grade progress of the clinic group.

Chro. A	School Grades									Total	%
	Kg.	1	2	3	4	5	6	7	8		
5	5									5	.8
6	1	18	3							22	3.8
7	1	16	19	5						41	7.4
8		7	23	18	3			1		52	9.
9		3	6	18	20	2				49	8.5
10		1	6	9	16	24	8	3		67	11.5
11			1	4	11	28	24	10	1	79	13.6
12		2		1	9	11	35	33	5	96	17.
13			1	2	2	5	8	33	15	68	11.6
14				3	3	3	9	32	15	65	11.2
15					1	2	2	15	5	25	4.
16							1	3	4	8	1.5
17									1	1	.1
Total	7	47	59	60	67	75	87	130	46	578	
%	1.2	8.2	10.3	10.2	11.5	12.9	15.6	23.4	7.8		100

Median and mean chronological age of the clinic group = 11.64 S.D. = 2.5 years.

Range in chronological age is 5-17 years

Median school grade is the fifth.

Chart No2

Mental age grade progress of the clinic group.

M.A.	School Grades								Total	%	
	Kg.	1	2	3	4	5	6	7			8
3	1									1	.1
4	1									1	.1
5		3								3	.5
6	2	19	7							28	4.8
7	3	13	16	3						35	6.
8		10	27	19	7	3	1			67	11.5
9		1	7	19	28	14	10	4	1	84	14.9
10		1	2	11	21	22	11	10		78	13.5
11				8	3	21	20	25	7	84	14.9
12					7	7	19	29	7	69	11.9
13					1	4	12	20	9	46	7.8
14						2	11	28	12	53	9.1
15						2	1	7	5	15	2.5
16							1	7	4	12	2.1
17							1		1	2	.3
Total	7	47	59	60	67	75	87	130	46	578	
%	1.2	8.2	10.2	10.2	11.5	12.9	15.6	22.4	7.8		100

Median and mean mental age of the clinic cases is 10.9 years. S.D. = 2.5 years.

Range in mental age = 3-17 years.

Mental retardation of the clinic group = .74 of a year.

Chart No. 3

Chronological age grade progress of the
White clinic cases.

Chro. A.	Kg	School Grades								Total	%
		1	2	3	4	5	6	7	8		
5	5									5	1.
6	1	18	3							22	4.3
7	1	16	16	5						38	7.8
8		7	21	16	3					48	9.9
9		3	6	16	20	3				47	9.8
10			5	6	15	22	7	1		56	11.6
11				4	11	22	24	9	1	71	15.
12		2			8	11	31	25	5	82	17.1
13			1	2	4	4	6	20	11	48	9.9
14				2	3	3	7	25	7	47	9.8
15					1	1	2	8	3	15	3.
16							1	1	2	4	.8
17											
Total	7	46	52	51	65	65	78	90	29	483	
%	14	95	107	105	134	134	163	187	61		100

Median chronological age of Whites = 11.3 years

Mean chronological age of Whites = 11.1 years

S.D. = 2.5 years. Median School grade of Whites is the fifth grade.

Range of Whites in chronological age = 5-16 years.

Chart No.4

Chronological age grade progress of the
Negro cases

Chro. A.	School Grades								Total	%
	1	2	3	4	5	6	7	8		
7									3	3.2
8									4	4.3
9									2	2.2
10	1	1	3	1	2	1	2		11	11.6
11		1			6		1		8	8.4
12			1	1		4	8		14	14.7
13					1	2	13	4	20	21.
14			1			2	7	8	18	18.9
15					1		7	2	10	10.5
16							2	2	4	4.3
17								1	1	1.1
Total	1	7	9	2	10	9	40	17	95	
%	1.1	7.3	9.4	2.2	10.5	9.4	42.2	17.9		100

Median chronological age of the Negroes-13.2 years.

Mean chronological age of the Negroes = 12.9 years.
S.D. = 2.2 Range = 7-17 years.

Median school grade of the Negroes is seventh grade.

Twenty one per cent of the Whites equal or exceed
the median chronological age of the Negroes.

Seventy five per cent of the Negroes equal or exceed
the median chronological age of the Whites.

Chart No.5

Chronological age grade progress of the boys in the clinic group

Chro. A.	School Grades								Total	%	
	1	2	3	4	5	6	7	8			
5	2									2	.7
6		14	2							16	5.1
7		9	9							18	5.7
8		5	15	11	1					32	10.3
9		2	5	13	10	2				32	10.3
10		1	4	8	10	11	2	1		37	11.8
11			1	4	7	9	10	5	1	37	11.8
12		1		1	4	5	19	8		38	12.2
13			1	2	3	5	2	20	6	39	12.5
14				2	3	3	7	19	7	41	13.2
15						1	2	12		15	4.9
16								3	1	4	1.3
17											
Total	2	32	37	41	38	36	42	68	15	311	
%	.7	10.3	11.9	13.1	12.2	11.6	13.5	21.8	4.9		100

Median and mean chronological age of the boys = 11.5 years. S.D. = 2.6 years. Range in chronological age = 5-16 years.

Median school grade of the boys is fifth grade.

Fifty five per cent of the girls equal or exceed the median chronological age of the boys.
Forty six per cent of the boys equal or exceed the median chronological age of the girls.

Chart No. 6

Chronological age grade progress of the girls in clinic group

Chro. A.	Kg.	School Grades								Total	%
		1	2	3	4	5	6	7	8		
5	3									3	1.1
6	1	4	1							6	3.2
7	1	7	10	5						23	8.6
8		2	8	7	2			1		20	7.5
9		1	1	5	10					17	6.3
10			2	1	6	13	6	2		30	11.3
11					4	19	14	5		42	15.7
12					5	6	16	25	5	58	21.7
13					1		3	13	9	29	11.
14							2	13	8	24	9.1
15					1	1		3	5	10	3.8
16								1	3	4	1.4
17									1	1	.3
Total	5	15	22	19	29	39	45	62	31	267	
%	19	56	82	72	109	146	168	232	116		100

Median chronological age of the girls = 11.8 years.
 Mean chronological age of the girls = 11.4 years.
 S.D. = 2.4 years.

Range in chronological age is 5-17 years.

Median school grade of the girls is the sixth grade.

Chart No.7

Mental age grade progress of the White
clinic cases.

M.A.	Kg.	School Grades								Total	%
		1	2	3	4	5	6	7	8		
3	1	:	:	:	:	:	:	:	:	1	.2
4	1	:	:	:	:	:	:	:	:	1	.2
5	3	:	:	:	:	:	:	:	:	3	.6
6	2	19	6	:	:	:	:	:	:	27	5.5
7	3	12	14	1	:	:	:	:	:	30	6.2
8	10	25	16	6	:	:	:	:	:	57	11.7
9	1	5	16	27	11	8	2	1	:	71	15.
10	1	2	11	21	20	10	4	:	:	69	14.4
11			7	3	19	17	11	4	:	61	12.6
12				7	7	18	18	3	:	53	10.9
13				1	4	11	18	6	:	40	8.4
14					2	11	23	6	:	42	8.7
15					2	1	7	4	:	14	2.8
16						1	7	4	:	12	2.4
17						1		1	:	2	.4
Total	7	46	52	51	65	65	78	90	29	483	
%	14	9.5	10.7	10.5	13.4	13.4	16.3	18.7	61		100

Median mental age of the Whites = 10.7 years.

Mean mental age of the Whites = 10.9 years.

S.D. from the median mental age = 2.6 years.

Range in mental age of the Whites is 3-17 years.

Average retardation of Whites = .6 of a year.

Forty one per cent of the Whites equal or exceed the
median mental age of the Negroes.

Sixty one per cent of the Negroes equal or exceed the
median mental age of the Whites.

Chart No. 8

Mental age grade progress of the Negro clinic cases.

M.A.	School Grades								Total	%
	1	2	3	4	5	6	7	8		
6		1							1	1.1
7	1	2	2						5	5.3
8		2	3	1	3	1			10	10.5
9		2	3	1	3	2	2		13	13.7
10					2	1	6		9	9.4
11			1		2	3	14	3	23	24.3
12						1	11	4	16	16.9
13						1	2	3	6	6.3
14							5	6	11	11.6
15								1	1	1.1
16										
Total	1	7	9	2	10	9	40	17	95	
%	1.1	7.3	9.4	2.2	10.5	9.4	42.2	17.9		100

Median mental age of the Negroes = 11.4 years.
 S.D. = 2.1 years. Range in mental age of the Negroes is 6-15 years.

Average retardation of the Negroes is 1.8 years.

Mean mental age of the Negroes - 11.2 years.

Chart No.9

Mental age grade progress of the boys in the clinic group.

M. A. Kg.	School Grades								Total	%			
	1	2	3	4	5	6	7	8					
5	2	:							2	.7			
6	1	15	:	3					19	6.1			
7	1	8	:	11	2				22	7.			
8		6	:	19	14	3	1		43	13.8			
9			2	:	12	17	7	5	2	45	14.5		
10		1	2	9	:	14	11	5	4	46	14.8		
11				4	2	:	3	11	11	2	38	12.2	
12					2	5	:	10	19	1	37	11.9	
13						2	6	:	10	3	21	6.7	
14							1	3	13	:	4	21	6.7
15							1	1	5	3	10	3.3	
16									4	2	6	2.	
17									1		1	.3	
Total	2	32	37	41	38	36	42	68	15	311			
%	.7	10.3	11.9	13.1	12.3	11.6	13.5	21.8	4.9		100		

Median mental age of the boys = 10.5 years.

Mean mental age of the boys = 10.4 years.

S.D. = 2.5 years.

Range in mental age of boys is 5-17 years.

Average retardation of the boys = 1 year.

Sixty one per cent of the girls equal or exceed the median mental age of the boys.

Forty per cent of the boys equal or exceed the median mental age of the girls.

Chart No.10

Mental age grade progress of the girls in the clinic group

M.A.	Kg.	School Grades								Total	%	
		1	2	3	4	5	6	7	8			
3	1	:								1	.3	
4	1	:								1	.3	
5		1	:							1	.3	
6	1	4	:	4						9	3.3	
7	<u>3</u>	<u>5</u>	:	<u>5</u>	1					13	5.1	
8		4	:	<u>8</u>	5	4	2	1		24	9.1	
9		1	5	:	<u>7</u>	<u>11</u>	7	5	2	1	39	14.6
10				2	:	<u>7</u>	<u>11</u>	6	6		32	12.1
11				4	1	:	<u>13</u>	9	14	5	46	17.2
12					5	2	:	<u>9</u>	<u>10</u>	6	32	12.1
13					1	2	6	:	<u>10</u>	6	25	9.3
14						1	2	15	:	<u>8</u>	32	12.1
15						1		2	2		5	1.9
16							1	3	2		6	2.2
17									1		1	.3
Total	5	15	22	19	29	39	45	62	31	267		
%	1.9	5.6	8.2	7.2	10.9	14.6	16.8	23.2	11.6		100	

Median mental age of the girls = 11.3 years.

Mean mental age of the girls = 11.1 years.

S.D. = 2.5 years.

Range in mental age is 3-17 years.

Average mental retardation of the girls is .5 of a year.

Table No. 2

Weight, standing and sitting height of 7, 8, 9, 10, 11 and 12 year old norms and of 7, 8, 9, 10, 11 and 12 year old clinic cases.

Group	Chro. Age	Weight	Mean	
			Standing Height	Sitting Height
Baldwin	7	22.8	120.7	65.8
Clinic	7	23.5	122.0	64.5
Baldwin	8	24.5	124.9	66.9
Clinic	8	26.	127.3	66.6
Baldwin	9	27.6	129.9	69.1
Clinic	9	29.	132.3	69.
Baldwin	10	30.5	135.4	71.2
Clinic	10	33.4	140.0	71.7
Baldwin	11	33.5	140.3	73.2
Clinic	11	35.3	142.3	73.2
Baldwin	12	36.7	145.1	75.2
Clinic	12	38.3	146.9	75.

Note: Measurements for norms are taken from Baldwin³⁰, "The Growth of School Children from Birth to Maturity." p.152

Both standing and sitting height is expressed in centimeters. Weight is expressed in kilograms.

Table No. 3

Correlations between physical and mental development for the clinic cases and fifty seven Horace Mann pupils.

Developmental Trait	Clinic Group		Horace Mann Group	
	No. cases	Correlation	No. cases	Correlation
Standing Height	267	$-.48 \pm .03$	57	.03
Weight	267	$-.38 \pm .03$	57	.03
Lung Capacity	255	$-.47 \pm .03$	57	.03

Note: This Table is a summarization of Tables A, B, C in the Appendix.

Table No.4

Relation of physical and functional traits to I.Q.
(clinic group)

Traits	No. cases	Median I.Q.	S.D.
Nondefective vision	78	97	23.24
Defective "	185	92	22.34
Nondefective hearing	89	94	29.2
Defective "	178	92	21.46
Nondefective speech	215	102	23.9
Defective "	63	87	19.9
Nondefective tonsils	59	106	21.6
Defective "	162	92	22.1
Noncarious teeth	186	93	23.22
Carious "	83	95	20.7
Nondefective adenoids	135	94	21.9
Defective "	72	95	20.7

Table No.5

Table showing the percentage of physical defects in an unselected group (Salt Lake City Survey by Cubberly, 1915) and in the clinic group.

Defects	Per cent defective in Salt Lake City children	Per cent defective in clinic group
Vision	15	70
Hearing	6	66 $\frac{2}{3}$
Speech	3	32
Carious teeth	75	31

Table No.6

Mental classification of 578 clinic cases and 1000 school children studied by Terman.²⁸ (Measurement of Intelligence pp. 78-104)

I.Q.'s	Clinic group		Terman group	
	No.	%	No.	%
0- 69	40	7.	10	1.
70- 73	64	11.	40	4.
80- 89	106	18.3	150	15.
90-109	225	39.	600	60.
110-119	61	10.5	150	15.
120-139	70	12.1	54 ⁴	5.4
140-	13	2.1	6	.6
Total	578	100.	1000	100.
Median	96.5		100.5	
Mean	96.5		100.5	
S.D.	19.5		13.	

Note: Medians, means and standard deviations are based on Table No.D in the Appendix.

The mean I.Q. of the clinic group is attained or exceeded by 63.6% of the Terman group.

The mean I.Q. of the Terman group is attained or exceeded by 41.8 of the clinic group.

Graph No. 1

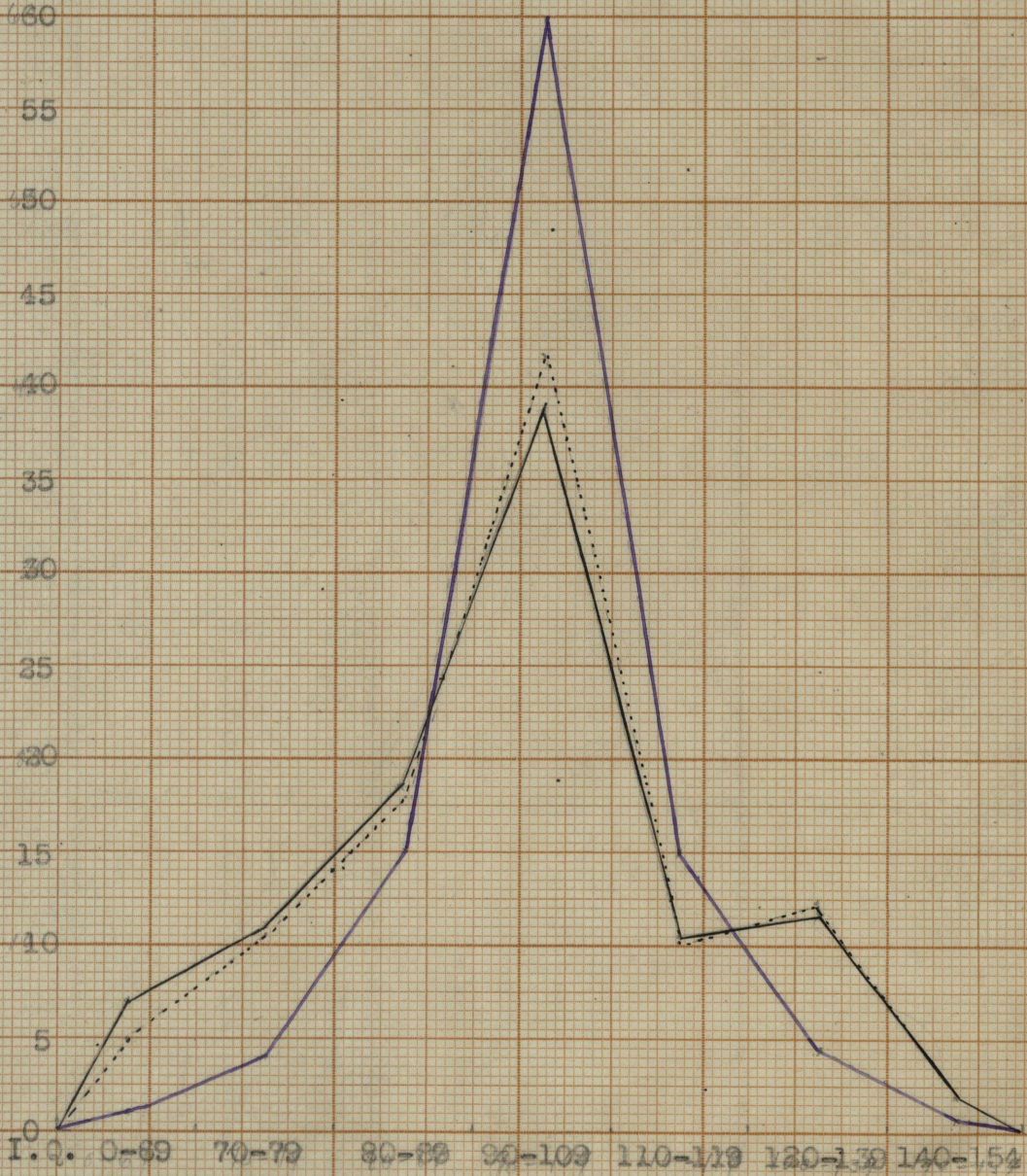
Mental classification of 578 clinic cases of this study and 1000⁵⁰ unselected school children studied by Terman.

Curve for unselected group is shown in violet.

Curve for clinic group is shown in black.

Curve for clinic group is shown in black dotted line when fourteen years is used to determine the I.Q. of those that are fourteen years or more of age. See Table Nos. 6 and 7

% of cases



Mental classification of White and Negro clinic children.

Curve for White clinic children is shown in violet.

Curve for Negro clinic children is shown in black.
See Table No. 8

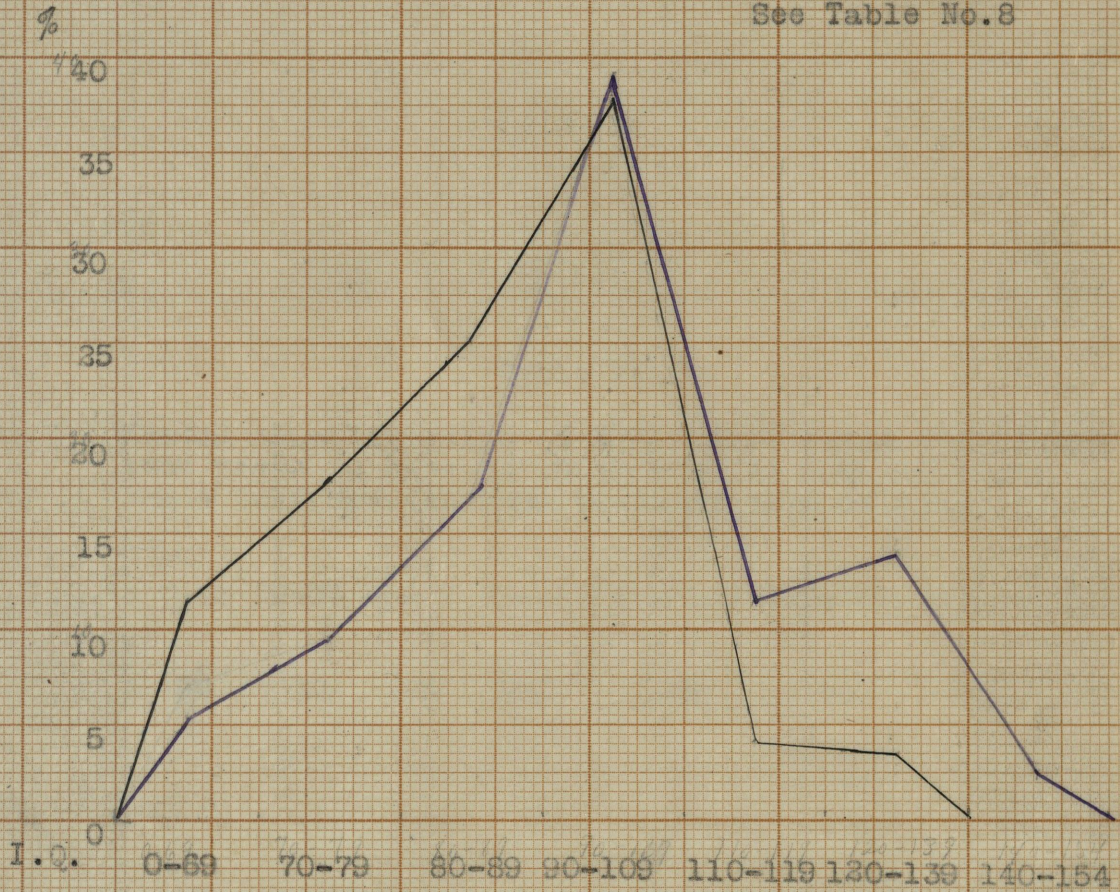


Table No.7

Mental classification of 578 clinic cases when fourteen years is used to determine the I.Q. of those cases that are fourteen years or more of age.

I.Q.'s	0-69	70-79	80-89	90-109	110-119	120-139	140-155	Total
No. of clinic cases	29	62	104	241	59	71	12	578
% of clinic cases	5.	10.7	18.	41.7	10.2	12.3	2.1	100.

Mental classification of boys and girls of the clinic group.

Curve for boys is shown in black.

Curve for girls is shown in violet.

% of cases

45

40

35

30

25

20

15

10

5

0

I.Q. 0-69 70-79 80-89 90-109 110-119 120-139 140-154

Note: Graphs are based on data in Table No. 8



Table No.8

Mental classification of the boys, girls, Whites, and Negroes constituting the clinic group.

I. Q. 's	Boys		Girls		Whites		Negroes	
	No.	%	No.	%	No.	%	No.	%
0- 69	20	6.4	20	7.4	29	5.8	11	11.5
70- 79	36	11.6	28	10.4	47	9.6	17	17.8
80- 89	64	20.5	42	15.7	82	17.	24	25.1
90-109	126	40.7	99	36.6	189	39.1	36	37.8
110-119	30	9.6	31	11.7	57	11.6	4	4.3
120-139	32	10.3	38	14.4	67	14.	3	3.6
140-	3	.9	9	3.4	12	2.5	0	0
Total	311	100.	267	100.	483	100.	95	100.
Median	95.9		98.3		99.3		88.4	
S.D.	16.2		20.7		19.7		14.6	

The median I.Q. of the Negroes is attained or exceeded by 69.3 per cent of the Whites. The median I.Q. of the Whites is attained or exceeded by 17.9 per cent of the Negroes.

Fifty three and five tenths per cent of the girls equal or exceed the median I.Q. of the boys. The median I.Q. of the girls is attained or exceeded by 44.3 per cent of the boys.

Note: Medians and Standard Deviations are based on the I.Q. distributions in Table No.5 in the Appendix.

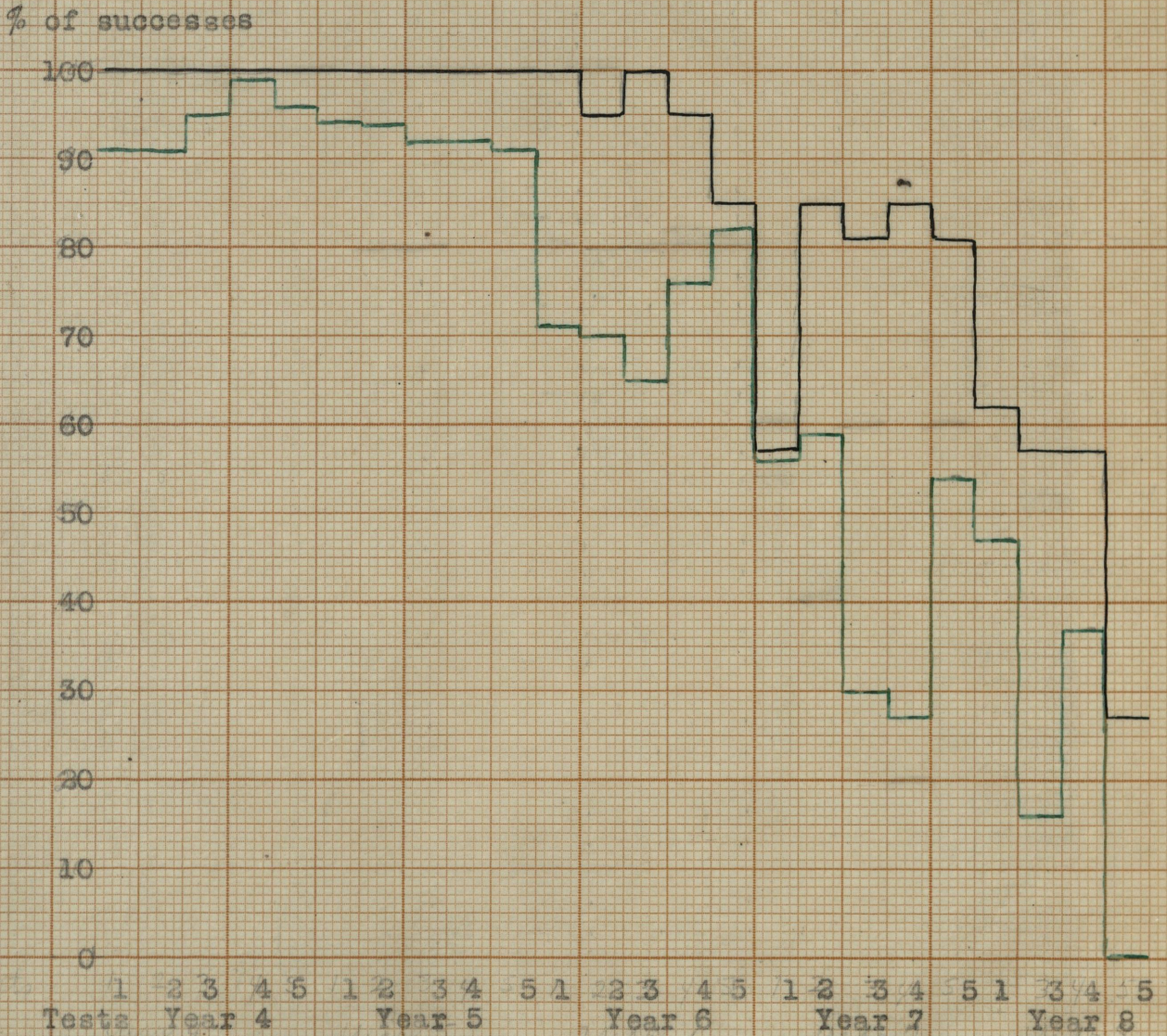
Table No.9

Median and Range in Mental age, Grade and I.Q. for the various chronological age groups constituting the clinic group.

Chro. Age	No. of Cases		Ch. A.	M.A.	School Grade	I.Q.
5	5	Med. Range	5.7 5-5.9	6.2 6-7.2	Kg. 0	120 106-144
6	22	Med. Range	6.45 6-6.9	8. 5.8-10.6	1. Kg.-2	123 96-143
7	41	Med. Range	7.5 7-7.9	8. 4.2-11.	2 Kg.-3	102 55-148
8	52	Med. Range	8.5 8-8.9	8.8 5.2-12.4	2 1-4	104 57-145
9	49	Med. Range	9.4 9-9.9	9.6 6-12.4	3 1-5	101 63-138
10	67	Med. Range	10.5 10-10.9	10.5 7-15.2	5 1-7	99 70-143
11	79	Med. Range	11.5 11-11.9	11.5 8-16.4	5 2-7	99 70-152
12	96	Med. Range	12.4 12-12.9	12. 3-17.2	6 1-8	98 25-143
13	68	Med. Range	13.4 13-13.9	12.8 8.6-16.	7 2-8	94 61-123
14	65	Med. Range	14.5 14-14.9	12.4 7.8-16.	7 3-8	93 54-111
15	25	Med. Range	15.3 15-15.9	12.2 8.6-14.8	7 4-8	80 55-102
16	8	Med. Range	16.3 16-16.9	11.4 10-14.	8 6-8	68 63-85
17	1	Med. Range	17.7	10.2	8	58

Graph No.4

Distribution of per cent of success in separate tests of the Stanford Binet Scale of six year old clinic cases and six year old norms.

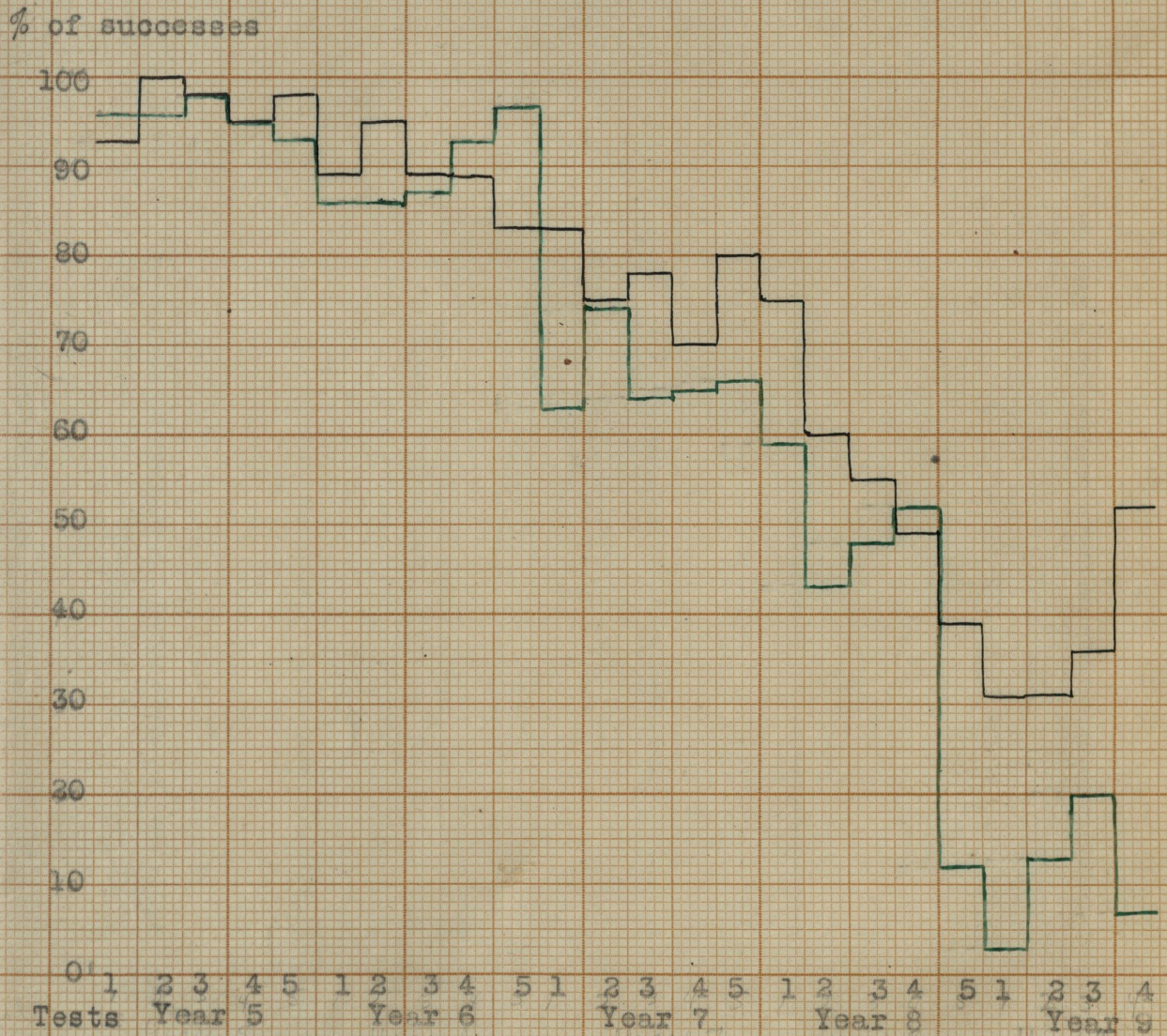


Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Graph No.5

Distribution of per cent of success in separate tests of the Stanford Binet Scale of seven year old clinic cases and seven year old norms.



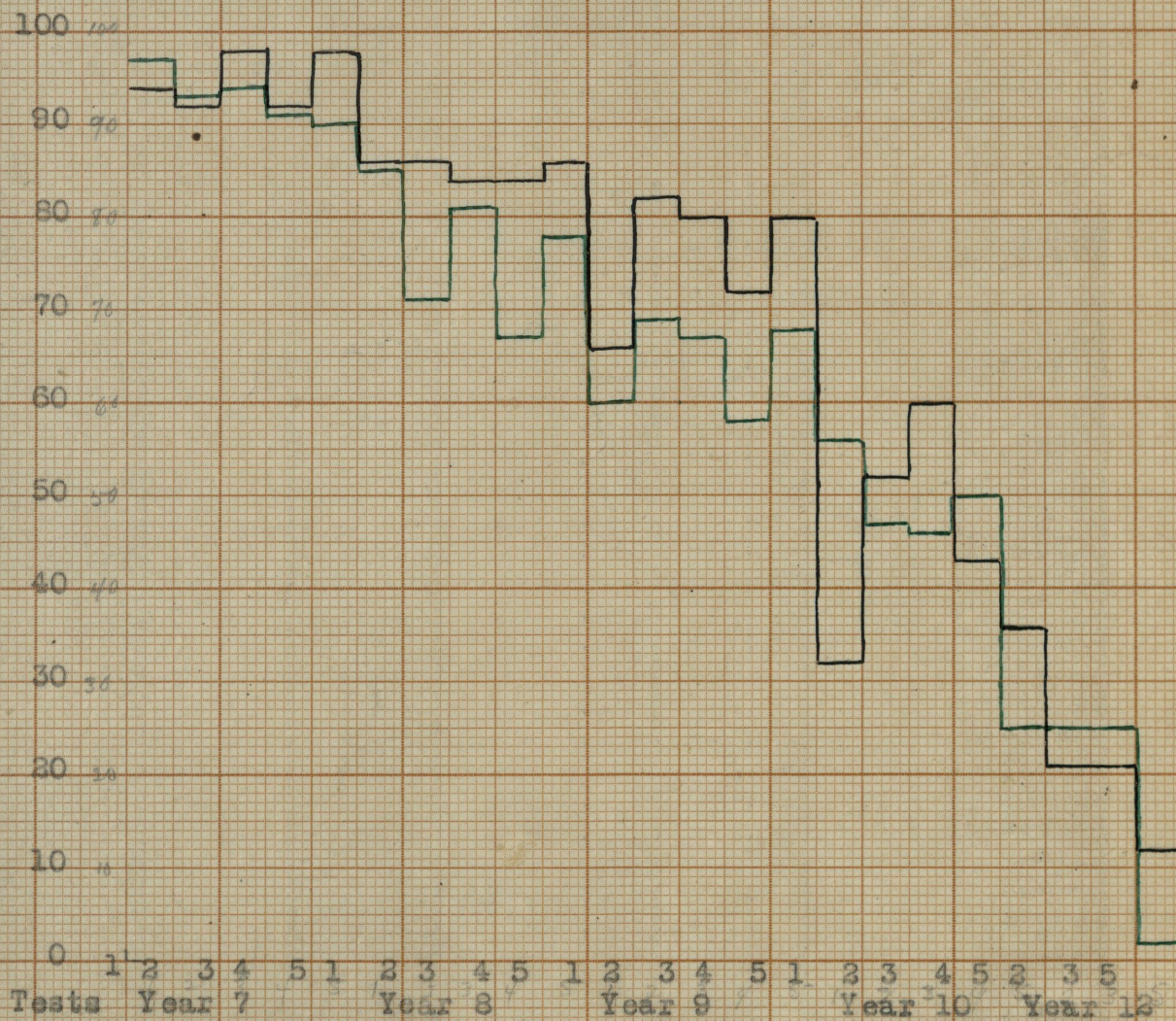
Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Graph No.6

Distribution of per cent of success in separate tests of the Stanford Binet Scale of nine year old clinic cases and nine year old norms.

% of successes

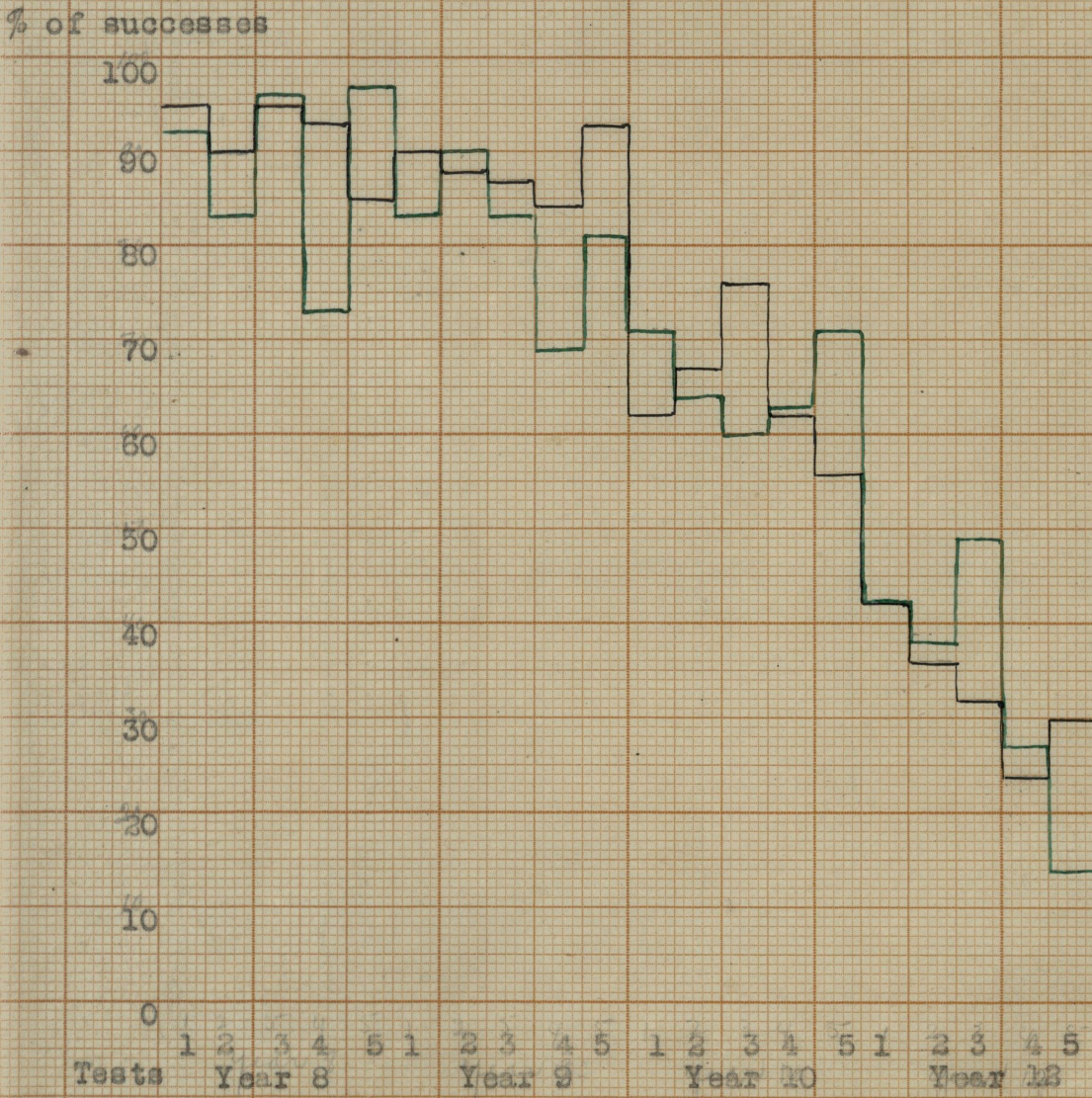


Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Graph No.7

Distribution of per cent of success in separate tests of Binet Scale of ten year old clinic cases and ten year old norms.

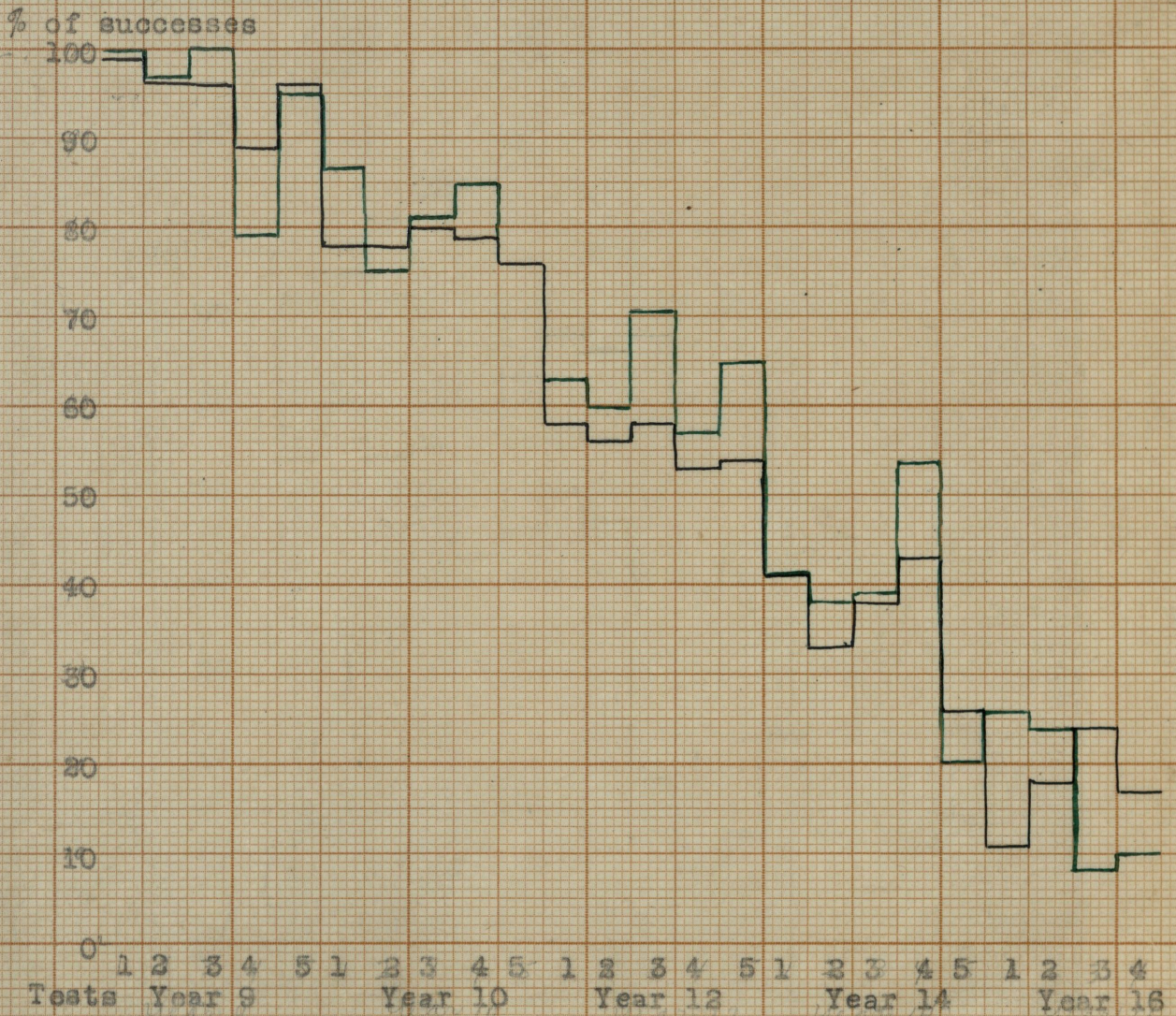


Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Graph No. 8

Distribution of per cent of success in the separate tests of the Stanford Binet Scale of twelve year old clinic cases and twelve year old norms.



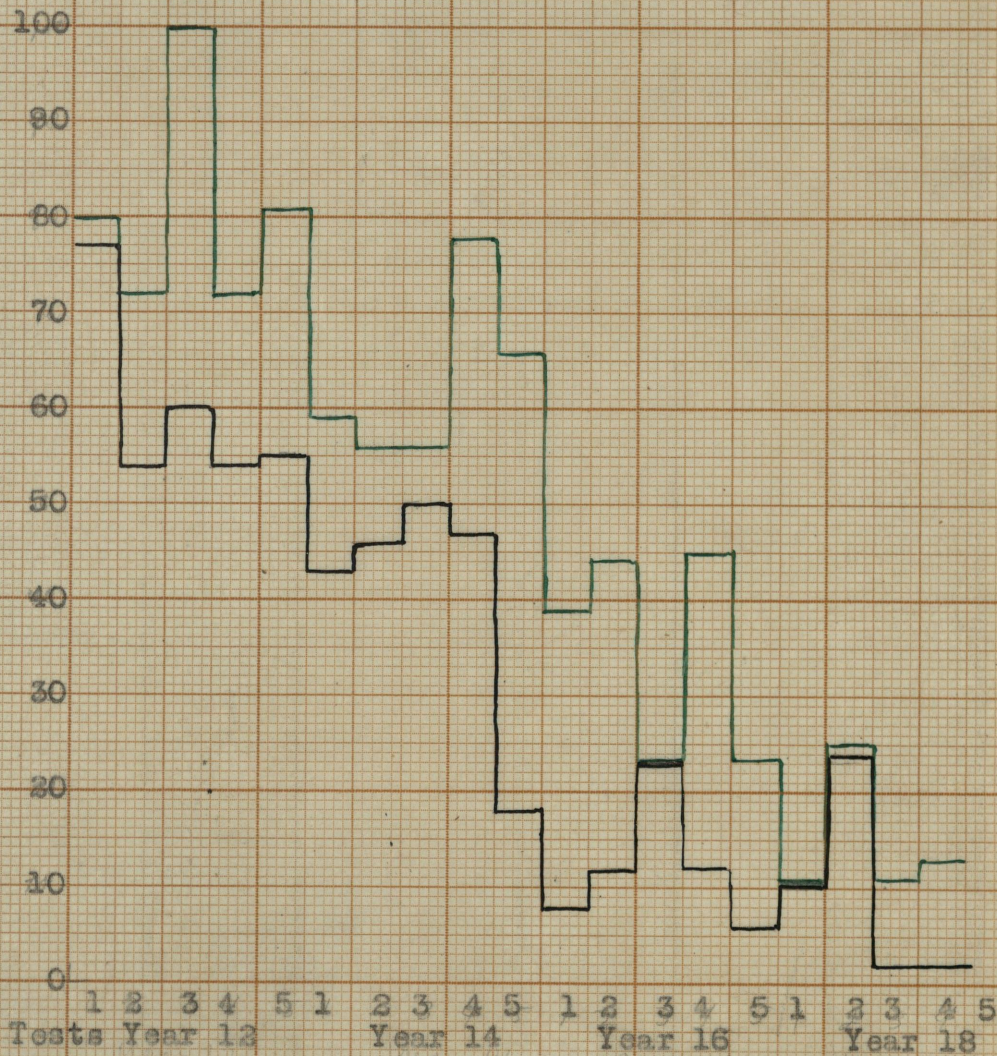
Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Graph No.9

Distribution of per cent of success in separate tests of the Stanford Binet Scale of fourteen year old clinic cases and fourteen year old norms.

% of successes



Curve of the clinic cases is shown in black.

Curve of the norms is shown in green.

Table No.11

Table showing the number and per cent of each chronological age group that has a range of four or more years above basal age. (clinic group)

Chro. Ages	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
No. of cases	0	10	15	29	25	38	56	74	56	54	80	6	0	383
% of cases	0	45	36	56	51	56	70	77	80	83	80	75	0	65.6

Table No.12

Correlation between range above basal age and
 difference between mental ages on the Sequin
 form board and the Stanford Binet Scale.
 (clinic group)

Difference in mental ages expressed in years.

Range in years	0-.4	.5- .9	1- 1.4	1.5- 1.9	2.- 2.4	2.5- 2.9	3.- 3.4	3.5- 3.9	4.- 4.4	Total
1			: 1 :							1
2	5	2	: 6 :	1	1	1			1	17
3	2	4	: 3 :	5		1	1		1	17
4	5	10	: 7 :	5	2	1	2	2	1	35
5	4	5	: 8 :	4	2	1	2	4	1	31
6	5	7	: 8 :	3	4	2	1	1	1	33
7		4	: 2 :	1	6		1			14
8	2	2	: 1 :	1	1					7
9		2	: :		4	1	4			11
10		1	: 1 :	2						4
11		1	: :							1
Total	23	38	: 37 :	22	20	7	11	7	5	170

$$r = .11 \pm .05$$

$$oy = 2.07$$

$$ox = 2.1$$

Table No.13

Chronological age grade progress of school children studied by Strayer² in 352 cities as compared with that of the clinic group. (See Charts Nos.1,3,4,5 and 6)

	: Overage					:Tot.:Nor:		Underage					:Tot.
	:5	4	3	2	1:	:	:	1	2	3	4	5:	
% of Strayer group	0	1.3	3.7	9.5	19	335	57						4.85
No. of clinic cases	7	8	16	55	89	175	217	145	36	4	0	1	186
% of clinic cases	1.3	1.3	2.7	9.5	15.4	30.3	37.5	24.7	6.3	.6	0	.1	32.3
No. of white clinic cases	6	7	10	41	79	143	169	134	34	2	0	1	171
% of white clinic cases	1.3	1.6	2.2	8.9	15.9	30.8	33.9	27.7	7	.4	0	.3	35.3
No. of Negro clinic cases	1	1	6	7	13	27	44	20	2	2	0	0	24
% of Negro clinic cases	1	1	6.3	7.4	12.6	28.3	46.4	20	2.1	2.1	0	0	25.3
No. of boys in clinic group	4	6	14	39	51	114	118	65	12	2	0	0	79
% of boys in clinic group	1.3	1.9	4.5	12.5	16.4	36.5	38.9	20.5	3.8	.6	0	0	24.9
No. of girls in clinic group	3	2	2	16	38	61	91	88	24	2	0	1	115
% of girls in clinic group	1.1	.7	.7	6	14.2	22.7	35.1	32.9	8.6	.7	0	.3	42.3

Table No.14

Mental age grade progress of the clinic cases. (See Charts Nos. 2, 7, 8, 9 and 10)

Number of years	: Overage					:Tot.Nor.:					Underage					:Tot.
	:5	4	3	2	1:	:	:	:	1	2	3	4	5:			
No. of clinic cases	1	3	13	44	83	143	181	143	74	30	5	1	254			
% of clinic cases	.1	.5	2	76	143	247	312	247	128	52	1	1	439			
No. of white clinic cases	1	3	13	43	68	128	173	117	46	16	2	1	182			
% of white clinic cases	.2	.6	27	89	14	265	358	242	95	33	4	2	376			
No. of Negro clinic cases	0	0	0	1	9	10	17	26	25	14	3	0	68			
% of Negro clinic cases	0	0	0	1	94	105	173	273	263	147	31	0	715			
No. of clinic boys	1	1	7	20	46	75	104	86	32	12	2	0	132			
% of clinic boys	.3	.3	22	64	148	241	334	276	102	38	6	0	424			
No. of clinic girls	0	2	6	24	37	69	77	57	42	18	3	1	121			
% of clinic girls	0	.7	22	89	137	257	288	213	157	67	11	3	453			

Note: Strayer's age grade standard was used to classify the clinic cases.

CHAPTER V

INTERPRETATION OF DATA.

A. Age, school grade, mental stage of development, race and sex of the clinic cases.

Is any one school grade, chronological age, stage of mental development, race or sex outstandingly represented in the clinic group? Chart No.1 shows that the clinic cases range in school grade, from the Kindergarten to the eighth grade inclusive; and in chronological age, from five to seventeen years inclusive. Chart No.2 indicates that the mental age of the clinic group ranges from three to seventeen years inclusive.

There are 578 cases of which 53.7 per cent is boys, 46.2 per cent is girls; 83.4 per cent is of the White race and 16.6 per cent is Negro. (Table No.1) Practically one seventh of the Lawrence public school population was Negro when this study was made. Virtually the same proportion of the clinic cases is Negro. In proportion to school population, the Negroes have no more problem cases than has the White race, as evidenced by these data. The reasons for the slightly larger per cent of boys than girls can not be definitely determined from the data that are available. A few causes are conjectured. The relatively large number of

boys, may be explained by the theory that boys are more variable in intelligence than girls and that pupils of extreme high or low intelligence are more likely to be mal-adjusted to school environment. Since the University of Kansas is not located near the Lawrence public schools, it may be that teachers hesitate more about sending the girls than they do about sending the boys. Society grants more freedom to boys than to girls; hence, they are more likely to be conduct disorders.

An inspection of Charts Nos. 1 and 2 shows that no one chronological or mental age is outstandingly represented in the clinic group. Chronological ages 10, 11, 12, 13 and 14 and mental ages, 8, 9, 10, 11 and 12 occur most frequently. Sixty-four and nine tenths per cent of the clinic group range in chronological age from 10-14 years inclusive. Sixty-six and seven tenths per cent of the clinic cases range in mental age from 8-12 years inclusive. A study of the mental and chronological age distributions of the races and sexes reveals: that for the Negro clinic cases chronological ages 12, 13 and 14, and mental ages 8, 9, 11, 12 and 14 are most frequently represented; for the White clinic cases, chronological ages 10, 11 and 12, and mental ages, 8, 9, 10, 11 and 12 occur most frequently; for the boys in the clinic group, chronological ages 8, 9, 10, 11, 12, 13 and 14 and mental ages, 8, 9, 10, 11 and 12 occur most frequently; for the girls of the clinic group, chronological ages 10, 11, 12 and 13 and mental ages, 9, 10, 11, 12 and 14 are most frequently represented. The chronological and mental ages that are most frequently

represented in the chronological and mental age distributions of the clinic group or of the group divided according to sex and race, range in general from 8-14 years inclusive. Ages that appear to be rather outstandingly represented are ages 13 and 14 in the chronological age distribution of the Negro; age 12 in the chronological age distribution of the girls and age 11 in the mental age distribution of the Negroes. If no other selective factors than maladjustment were active, these data indicate, that during the years covered by this study, the per cent of pupils in the Lawrence public schools that had difficulty in adjusting themselves to school environment was less for the mental and chronological age groups, 5,6,7,15,16 and 17 respectively, than for any other mental or chronological age group. The fact that teachers often exhibit more patience with children in the lower grades, may account for there being relatively few clinic cases that are 5,6 and 7 years of age (mentally and chronologically). The fact, that there is a comparatively small number of pupils in the grades that are 15,16 and 17 years of age (mentally and chronologically) may account for the relatively few clinic cases, that are 15,16, and 17 years of age (mentally and chronologically). See Charts 1,2,3,4,5,6,7,8, 9 and 10.

The grade distribution of the clinic group, (Chart No.1) shows that the seventh is most frequently represented. The seventh grade occurs most frequently in the grade distribu-

tions of the boys, girls, Whites and Negroes. The number of Negro problem cases in the seventh grade is entirely out of proportion to the number in the preceding grades. More than half of the Negro clinic cases are in the seventh and eighth grades. Thirty per cent of the seventh grade and 37 per cent of the eighth grade clinic cases are Negro. On the assumption that other selective factors than maladjustment may be disregarded, the seventh grade of the Lawrence public school, during the years covered by this Study, had more pupils than any other grade, who found difficulty in adjusting themselves to the school environment. However, during the first two years of the existence of the Psychological Clinic, the number of pupils sent from the seventh and eighth grades of the Lawrence Central School by teachers in sympathy with the work of the clinic was out of proportion to the number sent from the other grades. The excessive number sent from the seventh and eighth grades the first two years of the existence of the clinic is somewhat offset by the fact, that seventh and eighth grade problem cases in the Lawrence public schools during the school year 1923-1924 were sent to the Lawrence High School Clinic instead of to the Psychological Clinic of the University of Kansas. Some of the factors that may have been especially active in effecting maladjustment in pupils of the seventh grade are the onset of adolescence and inability to handle the abstract

subject matter which is liberally offered in the seventh and eighth grades. However, the cause for the relatively large number of problem cases in the seventh grade can not be determined from the data that are available. The children of Lawrence have been required to attend the Kindegarten only since 1921. This fact and the type of work offered may account for the relatively few cases sent from the Kindegarten.

B. Physical status of the clinic group.

Many studies have been made of the relationship of physical to mental development. Scientific study of gifted children has disproved the belief that mentally superior children are physically inferior. Baldwin³¹ has shown that physical and mental precocity tend to accompany each other. Yates,³² Terman, Rost and Woodrow have found that mentally superior children show earlier physical development than normal children.

(a) Physical development of the clinic cases.

Are the clinic cases as well developed physically as the norms studied by Baldwin³⁰ or as a group of students in the Horace Mann School of Columbia University,²⁶ New York? In Table No. 2 is shown the weight and both standing and sitting height of 7, 8, 9, 10, 11 and 12 year old clinic cases and of 7, 8, 9, 10, 11 and 12 year old norms, reported by

Baldwin³⁰ Because physical examination records appear most frequently in the data of the 7,8,9,10,11 and 12 year old clinic cases, these chronological age groups have been selected for study. However, the number of clinic cases in these chronological age groups is insufficient for a proper sampling. (Tables A.B.C. Appendix) The weight of the norms reported by Baldwin does not include the weight of the clothing that they wore, when weighed. The height of the norms was measured after their shoes were removed. Baldwin estimates that .75 of a kilogram is the average weight of a child's clothing and that the average of the differences between height with and without shoes is 2 centimeters. The weight of the clinic cases includes the weight of their clothing. The height of the clinic cases includes the height of the heels of their shoes. Table No.2 shows that the 7,8,9,10,11 and 12 year old clinic cases are in general as well developed in weight and both standing and sitting height as norms of the same chronological age. Although the 7,8,9 and 12 year old clinic cases do not quite measure up to the sitting height of 7,8,9 and 12 year old norms, the differences are so slight as to be negligible.

The mental age of the clinic cases was correlated with the following developmental traits; standing height, weight and lung capacity. Table No.3 shows that there is a significant but in no case a very high relationship between the mental and physical development of the clinic cases.

Studies have been made of unselected groups to determine the relationship existing between their physical and mental development. Since the correlations in these studies have not been expressed quantitatively, they are of little value for comparison. Gates²⁶ correlated various physical traits of fifty seven Horace Mann students with their mental ages. Chronologically the pupils averaged nine years, but mentally they were accelerated more than two years. The correlation between the physical and mental development of the Horace Mann group is approximately zero. (Table No.3)

The results of these two comparative studies seem to indicate that physical retardation was not a factor in the production of maladjustment in the clinic group.

(b) Relation of physical and functional defects to I.Q.

Do the clinic cases with physical and functional defects have a lower I.Q. than the clinic children that are not afflicted in a similar manner? In the clinic group teeth were designated defective if one or more were carious. Vision was designated defective if there were indications of myopia, hyperopia or astigmatism. Tonsils were called defective if they were pitted or inflamed; adenoids, if they were enlarged; hearing if it tested less than perfect. Speech was called defective if any speech peculiarities were exhibited. Of 499 cases who had throat condition recorded, 48 had had their tonsils removed and 23 had had their adenoids removed. There is a marked difference in the

median I.Q. of those with defective and nondefective tonsils, vision and speech respectively. The I.Q.'s of the nondefectives were considerably higher in each of these instances. For the other physical and functional traits the difference in median I.Q. of the two groups is negligible. The clinic cases possessing defective speech, vision and tonsils are definitely inferior mentally to the clinic cases not so afflicted. (Table No.4)

(c) Physical fitness of the clinic group compared with that of an unselected group.

Do four physical defects occur more frequently in the clinic group than in an unselected group? Although there are records from which the frequency of speech defects, carious teeth, defective adenoids, tonsils, vision and hearing in the clinic group may be determined, the number of physical defects considered in this part of the study is limited to four. Data showing the prevalence of more than this number, in both the clinic group and in an unselected group, were not available. The Salt Lake City Survey directed by Cubberly²⁷ in 1915, contains a table showing the per cent of unselected school children having carious teeth, speech defects and defective vision and hearing. A comparative study of the prevalence of these four particular defects in the clinic and Salt Lake City groups, shows that with the exception of carious teeth, they occur much more frequently in the clinic group than in an unselected group. This difference or a part of it may be

due to the standards of physical fitness adopted by the testers of the clinic group and the testers of the Salt Lake City²⁷ children. Carious teeth probably impede school progress less than any one of the other three defects. The physical defects of many of the clinic children were too slight to affect the quality of school work. Table No.5 shows the striking difference in the prevalence of physical defects in the two groups. The fact that particular physical defects occurred with so much greater frequency in the clinic group than in an unselected group may have been an important factor in producing maladjustment to school situations. However, it is granted that there are other physical defects, not considered in this study which may hinder school progress. Barbee,³³ in a study of physically defective children of Kansas City, discovered that school work improved as the defects were removed or ameliorated in corrective gymnastics.

(d) Summary.

In summarizing this chapter, the following facts present themselves. With the exception of carious teeth, the physical and functional defects considered in this study, occurred much oftener in the clinic group than in an unselected group. However this difference, or a part of it may be due to a difference in standards of physical fitness, adopted by the testers of the two groups. The clinic children with defective speech, tonsils and vision are definitely inferior mentally to the clinic cases not possessing these defects.

The difference between the I.Q.'s of the clinic cases having defective adenoids and hearing and carious teeth, and the clinic cases not having such defects was insignificant. The results of two comparative studies appear to indicate that physical retardation was not a factor in the production of maladjustment in the clinic group.

C. A study of the I.Q., mental and chronological age distributions of the clinic group and the I.Q. distribution of 1000 school children reported by Terman.²⁵

This part of the study will be devoted to a consideration of the quantitative differences between the I.Q. distributions of the clinic and Terman groups. It will indicate whether the differences in the I.Q. distributions of the clinic and Terman groups appear to be significant enough to cause maladjustment and if they are to be found in the I.Q. distributions of particular chronological age groups, race or sex.

(a) I.Q. distributions of the clinic cases compared with that of 1000 unselected children studied by Terman.²⁵

Is the clinic group superior or inferior in intelligence to an unselected group? Terman,²⁸ Procter³⁴ and others have shown that there is a positive correlation between school success and mental ability. ($r = +.545 \pm .046$). Since there is a positive correlation between school success and mental ability, as it is measured by standardized tests, a study

will be made of the mental equipment of the clinic group. A comparison of the I.Q. distributions of the clinic group and an unselected group of 1000 cases reveals several marked differences. (See Graph No.1, Table No.5) The clinic group has 6 per cent more feeble-minded; 7 per cent more borderline; 6.7 per cent more very superior and 1.5 per cent more genius than an unselected group. The unselected group has 20 per cent more cases of normal intelligence than the clinic group. The fact that there is a relatively limited number of the clinic group, who on the basis of Terman's social classification, have normal intelligence, was undoubtedly one of the factors producing maladjustment. Psychological tests show that children of very superior ability are likely to be misunderstood in school. Hollingworth⁴² states that pupils with an I.Q. below 80 are made miserable by the abstract subject matter of arithmetic, grammar, etc. Psychologists²³ are quite generally agreed that the children who are feeble-minded and of borderline intelligence have an added tendency toward conduct disorders. The mean I.Q. of the clinic group, which is 96.5 indicates that on an average it is slightly inferior to the intelligence of an unselected group. To determine the reliability of the difference between two medians, the formula $\frac{D.}{S.D. diff}$ may be used. By this formula the reliability of the difference between the median I.Q.'s of the clinic and Terman groups is $\frac{5.6}{1.1}$ or 3.2. Three and six tenths is the difference between the median I.Q.'s of the clinic and Terman groups.

One and one tenth is the standard error of the difference between the two medians. Three and two tenths indicates that the chances are 9993 out of 10,000 that the obtained difference between the median I.Q.'s of the clinic and Terman groups represents a true difference greater than zero and that nine times out of ten the median I.Q. of any unselected group will be higher than the median I.Q. of the clinic group. Charts Nos.1 and 2 show that the clinic group is mentally retarded .74 of a year.

Graph No.1 shows that when fourteen years, instead of sixteen, is used as the chronological age for those clinic cases who are fourteen years or more of age to determine their I.Q., the per cent of feeble-minded is slightly reduced. Pintner²⁵ and other recent psychologists believe that mental growth approximately ceases at the age of fourteen and therefore use fourteen years as the chronological age in determining the I.Q. of those who are fourteen or more years of age.

(1) Median I.Q. and mental age of particular chronological age groups.

Do the I.Q.'s of particular chronological age groups within the clinic group account for the differences existing between the I.Q. distributions of the clinic cases and an unselected group? Does the median mental age of particular chronological age groups account for the differences between the mental and chronological age distributions of

the clinic group? Table No.9 indicates that there is a marked difference between the median I.Q.'s of the younger and older chronological age groups. The lowest I.Q. of the five year old group is 106; the lowest I.Q. of the six year old group is 102 and the highest I.Q.'s of the fifteen and sixteen year old groups are 102 and 85 respectively. Half of the five and six year old children is very superior. Half of the sixteen year old group is feebleminded. The difference in the I.Q. distributions of the clinic group and an unselected group, at the lower end of the curve is accounted for, materially, by the presence of fifteen, sixteen, and seventeen year old cases in the clinic group and by a lack of representation for these ages in Terman's group. The I.Q.'s of the younger chronological age groups indicate the source of the relatively high per cent of very superior and genius in the clinic group.

The median mental age of both the six and seven year old clinic children is eight years. The median mental ages of the twelve, thirteen, fourteen and fifteen year old children are 12, 12.8, 12.4 and 12.2 years respectively. None of the fifteen, sixteen, or seventeen year old cases is mentally fifteen years of age. (Table No.9.) A study of the median mental ages of the various chronological age groups shows that the difference between the mental and chronological age distributions of the clinic group is due, particularly, to the mental retardation of the older children (14, 15 and 16 years of age) many of whom are Negroes. Because the

younger children (5,6 and 7 years of age), who are mentally accelerated tend to equalize the retardation of the older children, the mental retardation of the group is not marked.

(2) I.Q., mental and chronological age distributions of the White and Negro clinic cases.

Do the I.Q. distributions of either race account for the differences existing between the I.Q. distributions of the clinic group and an unselected group? Does either race account for the differences between the chronological and mental age distributions of the clinic group? Barnes³⁵ in his thesis entitled, "The Intelligence of Negro Children" states that there are types of mental activity in which the Negro child functions less adequately than the White child: That a large per cent of Negroes in the seventh and eighth grades of the Lawrence public schools are taught in the slow section. That the Negro is chronologically older in these grades than the White child and that in the Terman group test, his score is lower than the score for Whites.

The intelligence curve (Graph No.2) showing the I.Q. distribution of Negro clinic children is skewed perceptively more to the lower end than the I.Q. curve for White clinic children. The per cent of Negro children in the feeble-minded class is 5.9 greater and in the superior, very superior and genius classes, it is 20.3 less than that found in corresponding classes for the White children. This statement does not conflict with the facts stated concerning

the intelligence of chronological age groups, as 38 per cent of the fourteen year old cases, 43 per cent of the fifteen year old cases and 50 per cent of the sixteen year old cases are Negro. The I.Q.'s of the Negroes account much more than the I.Q.'s of the Whites for the difference between the I.Q. distributions of the clinic and Terman groups at the lower end of the curve. The I.Q.'s of the Whites explain the differences between the I.Q. distributions of the clinic and Terman groups at the upper end of the curve. The median I.Q. of the Whites is attained or exceeded by 17.9 per cent of the Negroes.

Pintner²⁵ states, "All studies of the Negro show him to be decidedly inferior to the White in standard intelligence tests. Results point to a racial difference in intelligence. The most liberal estimate seems to be that at most 25 per cent of the colored reach or exceed the median intelligence of the Whites. No qualitative difference in intelligence between the two races can explain this marked quantitative difference."

The Negro children average two years older chronologically than the Whites, but mentally they average only three tenths of a year older. Charts Nos. 3 and 4 indicate the reason for the Negro clinic cases averaging much older chronologically than the Whites. This graph shows that the Negro race in proportion to its school population sends fewer cases to the clinic below the seventh grade than the

White race, but the number sent from the seventh and eighth grades is entirely out of proportion to the number sent from the preceding grades. The Negroes are retarded mentally 1.7 years while the retardation of the Whites is .6 of a year. The Negroes more than the Whites account for the difference between the mental and chronological age distributions of the clinic group.

(3) I.Q., chronological and mental age distributions of the sexes.

Does the I.Q. distribution of either of the sexes account for the differences existing between the I.Q. distributions of the clinic group and an unselected group? Does either sex account for the difference between the mental and chronological age distributions of the clinic group? It will be noticed in Graph No.3 and Table No.8 that the differences in the I.Q. distributions of the sexes are not marked. The girls' I.Q. distribution has a little greater variability than that of the boys and their I.Q. averages 2.4 points higher. The I.Q.'s of the girls account slightly more than the I.Q.'s of the boys for the differences between the I.Q. distributions of the clinic and Terman groups at the upper end of the curve. The I.Q.'s of the boys account more than the I.Q.'s of the girls for the differences between the I.Q. distributions of the clinic and Terman groups in that part of the curve representing frequencies for the interval, 70-110.

The boys are mentally retarded one year. The girls are mentally retarded five-tenths of a year. The boys, more than the girls are responsible for the difference between the mental and chronological age distributions of the clinic group. Terman,³⁶ in a study of sex differences of 1000 unselected school children found a small but fairly constant superiority of the girls up to the age of thirteen years in intelligence. This theory may give an explanation for a part or all of the mental superiority of the girls, since 71 per cent of the clinic cases are under thirteen years of age. In another study made by Terman⁴⁵ of 1000 gifted children, he states that the male appears to be more variable in intelligence than the female. This fact may account for the relatively large number of boys sent to the clinic. However the boys in the clinic group have a smaller per cent of cases at the upper and lower ends of the intelligence curve than the girls in the clinic group.

(4) Summary. In summarizing this phase of the study, the following facts present themselves.

The median I.Q. of the clinic group is 96.5. The I.Q.'s of the unselected group are concentrated significantly more about the measure of central tendency than the I.Q.'s of the clinic group. This condition was obviously one of the factors producing maladjustment in the clinic group. The clinic group is mentally retarded .74 of a year. The I.Q.'s of the 14, 15, 16 and 17 year old groups, in which there are

many Negroes account to a large degree for the difference between the I.Q. distributions of the clinic and Terman groups at the lower end of the curve. The I.Q.'s of the younger chronological age groups, (5,6 and 7 years of age) account to a large degree for the difference between the I.Q. distributions of the clinic and Terman groups at the upper end of the curve. The older chronological age groups (14,15,16 and 17 years of age) are very much retarded mentally. The younger chronological age groups (5,6 and 7 years of age) are mentally accelerated. The I.Q.'s of the Whites account almost entirely for the difference between the I.Q. distributions of the clinic and Terman groups at the upper end of the curve. The I.Q.'s of the Negroes account much more than the I.Q.'s of the Whites for the difference between the I.Q. distributions of the clinic and Terman groups at the lower end of the curve. The Negroes, more than the Whites account for the difference between the mental and chronological age distributions of the clinic group. The differences between the I.Q. distributions of the boys, and of the girls are not marked. The boys, more than the girls are responsible for the difference between the chronological and mental age distributions of the clinic group.

D. Analysis of the Stanford Binet test data.

Psychologists are undecided as to whether general

intelligence is a single innate capacity or if it is a large number of more or less closely related innate capacities. However, for the purpose of this study it makes little difference whether there is a general intelligence or various kinds of general intelligences. The aim of this part of the study will be to show if there are types of mental ability in which the clinic group functions more or less adequately than an unselected group. In other words, an attempt will be made to discover if the clinic group is superior or inferior to an unselected group in memory span, ability to handle symbols, imagination, perceptive capacity, etc.

(a) Performance of 6,7,9,10,12 and 14 year old norms and of clinic cases the same chronological age in separate tests of the Stanford Binet Scale with subsequent comparison.

On the supposition that the test performance of two chronological age groups selected from each period of childhood--early, later and adolescent--will give a fair representation of the performance of the remaining chronological age groups of the period, this study will be limited to a consideration of the test performance of chronological age groups, 6,7,9,10,12 and 14.

Graph No.4 and Table No.10 shows that the per cent of successes of the six year old clinic cases in the separate tests of the Stanford Binet Scale is in general much higher than that of six year old norms. Relatively, the most difficult tests for the six year old clinic cases are; test one of year seven--description of three pictures; and test

four of year four--length of two lines. However, in these tests the clinic group is superior to six year old norms. The performance of the seven year old clinic cases is in general superior to that of seven year old norms. Four exceptions occur; test four of year six--counting thirteen pennies; test one of year five--comparison of the weight of two cubes; test five of year six--time orientation; and test four of year eight--ball in the field. The superiority of the norms in the time orientation test is not marked and in the other three tests it is negligible. (Graph No.5)

The accomplishment of the nine year old clinic cases is in general superior to that of nine year old norms. The one test in which the nine year old clinic group is significantly inferior is test one of year ten--repetition of digits. (Graph No.6) The performance of the ten year old norms is significantly superior to that of the ten year old clinic cases in only two tests; test five of year ten--vocabulary; and test three of year twelve--dissected sentence. The relatively easy tests for the ten year old clinic cases are; test four of year eight--ball in the field; test four of year nine--arranging five weights; test three of year ten--reproducing designs from memory; and test five of year twelve--vocabulary. However, in most of the tests the differences between the performance of the ten year old clinic cases and ten year old norms are inconsiderable. (See Graph No.7) The same statement may be made concerning the accomplishment of twelve year old clinic cases and the

accomplishment of twelve year old norms. The performance of the twelve year old clinic group is significantly superior to that of twelve year old norms in only two tests; test four of year nine--arranging five weights; and test three of year sixteen--enclosed box problem. The tests, relatively difficult for the twelve year old clinic cases are; test three of year twelve--dissected sentence; test five of year twelve--vocabulary; test four of year fourteen--clock problem; and test one of year sixteen--repeating sentences. (Graph No.8)

The performance of the fourteen year old clinic group is inferior to that of fourteen year old norms in all tests except two in which the per cent of successes of the two groups is the same. The tests in which the fourteen year old clinic cases function reasonably well are; test one of year twelve--interpretation of pictures; test three of year fourteen--problem of implied fact; test three of year sixteen--enclosed box problem; test one of year eighteen--repetition of digits in order; test two of year eighteen--upper level of paper cutting test; test three of year eighteen--bringing water from the river; and test four of year eighteen--repetition of digits in reversed order. The per cent of successes of the fourteen year old norms is much higher than that of the fourteen year old clinic cases in the following test; test two of year twelve--ball and field at superior level; test three of year twelve--reconstruction of dissected sentence; test four of year twelve--definition of abstract

words; test five of year twelve--vocabulary; test one of year fourteen--repetition of digits in order; test two of year fourteen--lower level of paper cutting test; test four of year fourteen--reasoning the clock problem; test five of year fourteen--vocabulary; test one of year sixteen--definition of abstract terms; test two of year sixteen--classifying familiar objects; test four of year sixteen--digits in reverse order; and test five of year sixteen--vocabulary. (Graph No.9)

(b) Test performance of fourteen year old clinic cases compared with the test performance of Negro children studied by Barnes.³⁵

Do Negro mental traits appear to be perceptible in the test performance of the fourteen year old clinic cases? Since twenty eight per cent of the fourteen year old clinic group is Negro, their performance in the separate tests of the Stanford Binet Scale will be compared with that of the Negroes studied by Barnes.³⁵ Barnes states that the Negro is particularly inferior to the White race in repetition of digits in reversed order, vocabulary tests, description of pictures, arithmetic reasoning, definition of abstract words, dissected sentences, classifying familiar objects and clock problem. He also found that the Negro mind functions with a reasonable degree of efficiency in the detection of absurdities, interpretation of fables, implied fact, ball and field at superior level, comprehension in the second degree and paper cutting tests.

The performance of fourteen year old clinic cases is not graphically shown in the detection of absurdities, interpretation of fables and comprehension tests because the performance of fourteen year old norms in the separate tests of the Stanford Binet Scale below the mental age of twelve is not recorded. A comparative study of the test performance of the fourteen year old clinic cases and of the Negroes studied by Barnes seems to indicate that the Negro is not present in sufficient numbers to perceptibly modify the per cent of successes of the fourteen year old clinic group. It is apparent that the fourteen year old clinic group is not particularly inferior in the tests that were especially difficult for the Negro nor are the tests in which the two groups function reasonably well, identical.

(c) Summary.

The types of mental activity required in the tests that are particularly easy or difficult for the various chronological age groups are not discussed because it is very evident that the clinic group is not inferior in the types of mental activity involved in the tests which are difficult for the fourteen year old clinic group or superior in the types of mental activity involved in the tests which are easy for the six year old clinic cases. There does not appear to be any types of mental activity in which the clinic cases as a group are superior or inferior to an unselected group. The differences between the performance of ten year old clinic

cases and that of ten year old norms are insignificant in most of the tests. The same statement may be made concerning the twelve year old clinic cases and twelve year old norms. The general marked superiority of the younger clinic cases (6,7 and 9 years of age) gradually decreases until just the reverse is true of the fourteen year old clinic cases. The fourteen year old clinic cases are with a few exceptions distinctly inferior in their performance in the Stanford Binet Scale to that of fourteen year old norms.

The low I.Q.'s of the fifteen and sixteen year old clinic cases suggest that their performance would be more inferior to the accomplishment of norms than is that of the fourteen year old clinic group. However the performance of fifteen and sixteen year old norms is not available for comparison. Negro mental traits do not appear to be perceptible in the test performance of the fourteen year old clinic group.

E. Evidences of psychopathy in the clinic group.

Since individuals that are definitely psychopathic, are almost invariably problems in school as well as at home, this part of the study will attempt to determine if psychopathy has been an important factor in the production of maladjustment in the clinic group.

(a) Psychopathy defined.

Mateer³⁷ says, "It is not the quantity of intelligence

which determines psychopathy, but it is the pathological or abnormal way in which that quantity of intelligence works. The psychopath shows no trait that may not be recognized in individuals whom we definitely know to be normal. The difference lies in the degree to which he manifests the trait and in his inability to keep it in effective subordination to his other normal attributes. When an individual's behavior deviates so definitely from what is done by the social group, to which he belongs that it is impossible for him to live as a member of that group without definite discomfiture to the group, or without violating the social code in such a way as becomes a menace to human progress, we may say that his condition is definitely psychopathic."

(b) Prevalence of three of the traits of psychopathy in the clinic group.

Do three of the traits of psychopathy appear with equal frequency in the clinic group? To determine if an individual is psychopathic, Mateer³⁷ considers ten points. Four of the ten points which in Mateer's opinion are most indicative of psychopathy are: individual's behavior in the clinic; his story; qualitative analysis of association reactions and similar analysis of individual tests on the Stanford Binet. The three points for which the clinic cases have data available are; a range of four or more years above the basal age in the Stanford Binet Scale; a difference of four years in mental age in the Stanford Binet Scale and the Sequin Form Board; performance in the separate tests of the Stanford

Binet Scale. Three hundred eighty three or 66.2 per cent of the 578 clinic cases have a range of four or more years above basal age. (See Table No.11) Five cases or 3 per cent of the 170 cases that have mental ages on the Sequin Form Board recorded, have a difference of four or more years in mental age on the Sequin Form Board and the Stanford Binet Scale. The last statement is subject to error because of the fact that the Sequin Form Board is only one of five or six standardized performance tests that are usually given to determine mental age. The correlation between range above basal age and the difference between mental age on the Stanford Binet Scale and the Sequin Form Board is negligible (.11 ± .05 Table No.12). The National Committee for Mental Hygiene estimates that 3.5 per cent of an unselected school population is psychopathic.

Mateer³⁷ states that a study of the performance of psychopaths in the separate tests of the Stanford Binet Scale shows that they are relatively good in rote memory, comprehension, absurdities and use of abstract terms. They are relatively poor in rhymes, reaction time and 60 words, weights, constructing sentences from three words, memorial content and solving enclosed box problem. An analysis of the Stanford Binet test data of the clinic cases showed that there were no types of mental ability in which the clinic cases as a group are superior or inferior to an unselected group. It has been previously stated that the performance

of the 6, 7 and 9 year old clinic groups, in separate tests of the Stanford Binet Scale is superior to that of norms of the same age; that in most of the tests the differences between the performance of ten and twelve year old clinic cases and that of ten and twelve year old norms is insignificant; and that the fourteen year old clinic group is inferior in test performance to fourteen year old norms.

Table No. 10 shows that the performance of the five year old clinic group is outstandingly superior to that of norms; that the eight year old clinic group is in general more efficient than Terman's eight year old group and that the performance of the thirteen year old clinic group is in general inferior to that of the thirteen year old norms. The only test in which the eight year old clinic group is especially inferior to norms is, test one of year seven--description of pictures. The only test that is significantly easy for the thirteen year old clinic group is, test three of year sixteen--the enclosed boxes problem. Although a study of the test performance of chronological age groups shows that there are tests in which particular chronological age groups are superior or inferior to norms of the same chronological age, it also shows that the performance of these groups bear no resemblance to that, which Mateer thinks is characteristic of psychopaths.

On the basis of qualitative differences in mental ability, which Mateer considers as one of the important

aspects of psychopathy, neither the clinic group nor particular chronological age groups are psychopathic. The low correlation between two of the minor traits of psychopathy indicates that either one or the other and possibly neither is a very reliable symptom of psychopathy. Meager and conflicting evidence make it impossible to determine the prevalence of psychopathy in the clinic group.

F. School grade progress of the clinic cases.

Since the ability to do the work of a particular school grade depends on mental age, more than on any other single factor, this part of the study will emphasize the mental age grade progress of the clinic cases. It will indicate whether the differences between the mental age grade distribution of the clinic cases and Strayer's standard of gradation is significant enough to be an important factor in the production of maladjustment. It will show if particular chronological age groups, race or sex account for the differences between the mental and chronological age grade distributions of the clinic group and Strayer's² standard of gradation.

(a) Chronological age grade progress of the clinic group.

Are the clinic cases chronologically overage, at grade or underage for their school grade classification? Approximately one third of the clinic group is chronologically at grade, one third overage and one third underage according to Strayer's standard of gradation.

In his investigation of the chronological age grade progress of children in 352 cities, Strayer² found that only 4.25 per cent were underage and that 68.2 per cent were chronologically at grade. The clinic group has 28 per cent more cases that are chronologically underage for grade than an unselected group. (Table No.13)

(b) Mental age grade progress of the clinic group.

Are the clinic cases mentally overage, at grade, or underage for their school grade classification? Mentally 43.9 per cent of the clinic group are underage for their grade. (Table No.14) In other words 43.9 per cent are too far advanced in school for their mental level. The fact that 68.6 per cent of the clinic cases are not in the grade corresponding to their mental age must have been an important factor in producing maladjustment to school environment. The pupil that is mentally underage usually finds it very difficult to meet the requirements of his grade. Where-as the pupil mentally overage for grade works no harder than it is necessary for him to keep up with his class. The rest of his time is often idled away in a manner that is detrimental to the school.

(c) Chronological and mental age grade progress of each race.

Is either race responsible for the differences between the mental and chronological age grade distributions of the clinic group and Strayer's standard of gradation? The chronological age grade distributions of the Negro and White clinic cases show that the Negroes have 14.7 per cent more

chronologically at grade and 11.1 per cent less chronologically underage for grade than the Whites. (Table No.13) The table showing the mental age grade progress of the Negroes reveals another factor that has been very active in the production of maladjustment. Nearly three-fourths of the Negroes are mentally underage for their grade. As a group they are too far advanced in school for their intelligence level. (Table No.14)

Approximately only a third of the Whites are mentally at grade. The fact, that almost two-thirds of the White children are not in the grade corresponding to their mental age, undoubtedly accounts for a considerable part of their maladjustment to school life. (Table No.14) The Negroes more than the Whites, account for the underage difference between the mental age grade distribution of the clinic group and Strayer's standard of gradation. The mentally overage for grade in the clinic group are Whites (except ten cases).

(d) Chronological and mental age grade progress of each sex.

Is either sex responsible for the differences between the mental and chronological age grade distributions of the clinic group and Strayer's standard of gradation? Table No.13 shows that the boys have 13.8 per cent more chronologically overage for grade than the girls and that the girls have 17.3 per cent more chronologically underage for grade than the boys. The mental age grade distributions of the boys and girls are quite similar to each other and to the mental age grade distribution of the clinic group. The

boys, slightly more than the girls account for the underage difference between the mental age grade distribution of the clinic group and Strayer's standard of gradation. The girls, slightly more than the boys account for the overage difference between the mental age grade distribution of the clinic group and Strayer's standard of gradation.

(e) Median school grade of particular chronological age groups.

Does a study of the median school grade of particular chronological age groups explain the difference between the mental and chronological age grade distributions of the clinic group and Strayer's standard of gradation? Table No.9 shows that the 13,14 and 15 year old cases have the same median school grade classification--seventh grade. The median school grade for both the seven and eight year old cases is the second grade. A study of the median school grade of each chronological age group shows that the older children (14,15,16 and 17 years of age) are in general chronologically overage for their grade and that the younger children (7,8,9,10,11 and 12 years of age) are, in the main, chronologically underage for their grade. A study of the median mental age of each chronological age group reveals that many of the 14,15,16 and 17 year old groups are mentally underage for grade and that many of the 6 and 7 year old groups are mentally overage for their grade.

(f) Summary.

On the basis of Strayer's standard of gradation, 63 per cent of the clinic group are chronologically not at grade

and 68.6 per cent are mentally not at grade. The fact that less than a third of the clinic cases is mentally at grade must have been the cause underlying much maladjustment.

Forty three and nine tenths per cent of the group is mentally underage for their school grade. In other words, nearly half of the group is not mentally capable of doing the work of its grade. The differences between the mental age grade distributions of the boys and of the girls are not significant.

The per cent of Negroes mentally underage for grade is almost twice that of the Whites. The per cent of Whites mentally overage for grade is almost three times that of the Negroes. The mentally underage for grade are principally the younger children (6 and 7 years of age). The mentally overage for grade are primarily the older children (14, 15, 16 and 17 years of age) many of whom are Negroes.

CHAPTER VI

SUMMARY.

1. There were 578 clinic cases; three hundred eleven (53.7%) boys; two hundred sixty seven (46.3%) girls. Four hundred eighty three (83.4%) were of the White race, and ninety-five (16.6%) of the Negro race.
2. The clinic cases ranged in chronological age from five to seventeen years and in mental age, from three to seventeen years.
3. In the clinic group, chronological ages, 10,11,12,13 and 14, and mental ages 8,9,10,11 and 12 occur most frequently. No particular chronological or mental age is outstandingly represented in the clinic group. In general ages (mental and chronological) 8,9,10,11,12,13 and 14 occur most frequently in the chronological and mental age distributions of the boys, girls, Whites and Negroes, constituting the clinic group.
4. The clinic cases came from all of the school grades--Kindergarten to eighth grade inclusive. The seventh grade occurs most frequently in the grade distribution of the clinic group and in the grade distributions of the boys, girls, Whites and Negroes. However, the number of Negro clinic cases in the seventh grade is entirely out of proportion to the number from the six preceding grades.
5. The clinic cases do not appear to be retarded in their

physical development.

6. The clinic cases possessing defective vision, adenoids and speech are inferior mentally to the clinic cases not afflicted in a similar manner.

7. With the exception of carious teeth, certain physical and functional defects are more prevalent in the clinic group than in the Salt Lake City children.

8. The I.Q.'s of the clinic cases ranged from 46 to 154.

9. For Terman's group of unselected children, the median I.Q. = 100.5. S.D. = 13.

10. For the clinic group the median I.Q. = 96.9. S.D. = 19.5
The median and mean chronological age of the clinic cases is 11.64 years. S.D. = 2.5 years.

The median and mean mental age of the clinic group is 10.9 years. S.D. = 2.5 years. On an average the clinic cases are mentally retarded .74 of a year.

11. The clinic group has 6 per cent more feeble-minded; 7 per cent more borderline; 6.7 per cent more very superior and 1.5 per cent more genius than an unselected group. The unselected group has 20 per cent more cases of normal intelligence than the clinic group.

12. Sixty-three and six-tenths per cent of the unselected group equal or exceed the median I.Q. of the clinic group.

Forty-one and eight-tenths per cent of the clinic group equal or exceed the median I.Q. of Terman's group.

13. There is a marked difference between the median I.Q.'s of the younger and older chronological age groups, within the clinic group. The I.Q.'s of the 15, 16 and 17 year old clinic cases to a large degree account for the difference in the I.Q. distributions of the clinic and unselected groups at the lower end of the curve. The I.Q.'s of the younger chronological age groups, (five, six and seven years) account to a large degree for the difference in the I.Q. distributions of the clinic and unselected groups at the upper end of the curve. The difference between the mental and chronological age distributions of the clinic group is due particularly to the mental retardation of the 14, 15 and 16 year old clinic cases. The 5, 6 and 7 year old clinic cases are mentally accelerated.

14. The median I.Q. of the Whites is 99.3. S.D. is 19.7. The median I.Q. of the Negroes is 88. S.D. is 14.6.

15. Seventy-seven and seven-tenths per cent of the Whites equals or exceeds the mean I.Q. of the Negroes. Nineteen and seven-tenths per cent of the Negroes equals or exceeds the mean I.Q. of the Whites.

16. The median chronological age of the Negroes is 13.2 years. S.D. is 2.2 years. The median mental age of the Negroes is 11.4 years. S.D. is 2.1 years. On an average

they are retarded 1.8 years.

The median chronological age of the Whites is 11.3 years. S.D. is 2.5 years. The median mental age of the Whites is 10.7 years. S.D. is 2.6 years. The Whites are mentally retarded .6 of a year.

17. The I.Q.'s of the Negroes account more than the I.Q.'s of the Whites for the difference between the I.Q. distributions of the clinic and Terman groups at the lower end of the curve. The I.Q.'s of the Whites almost entirely account for the difference in the I.Q. distributions of the clinic and Terman groups at the upper end of the curve. The Negroes more than the Whites account for the difference between the mental and chronological age distributions of the clinic group.

18. The median I.Q. of the boys is 95.9. S.D. is 18.2. The median I.Q. of the girls is 98.3. S.D. is 20.7. Fifty-three and five-tenths per cent of the girls equal or exceed the median I.Q. of the boys. Forty-four and three-tenths per cent of the boys equal or exceed the median I.Q. of the girls.

19. The median chronological age of the boys is 11.5 years. S.D. is 2.6 years. The median mental age of the boys is 10.5 years. S.D. is 2.5 years. The boys are mentally retarded one year.

The median chronological age of the girls is 11.8 years. S.D. is 2.4 years. The median mental age of the girls is

3.5 years. The girls are mentally retarded .6 of a year.

20. The differences between the I.Q. distributions of the boys and girls are not marked. The boys, more than the girls are responsible for the difference between the mental and chronological age distributions of the clinic group.

21. An analysis of the performance of the clinic cases and norms of the same chronological age, in the separate tests of the Stanford Binet Scale discloses that the clinic group does not function more or less adequately in certain types of mental activity than an unselected group.

22. Twenty-eight per cent of the fourteen year old clinic group is Negro. However, Negro mental traits do not appear to be perceptible in the test performance of the fourteen year old clinic group.

23. Meager and conflicting evidence make it impossible to determine the number of psychopaths in the clinic group.

24. On the basis of Strayer's standard of gradation, only 31.4 per cent of the clinic group is mentally at grade. Forty-three and nine-tenths per cent of the group is mentally underage for its grade classification. The per cent of Negroes mentally underage for grade is approximately twice that of Whites. The per cent of Whites mentally overage for grade is approximately three times that of the Negroes. The older chronological age groups (14, 15, 16 and 17 years of

age) are chiefly responsible for the underage difference between the mental age grade distributions of the clinic group and Strayer's standard of gradation. The younger chronological age groups account to a large degree for the overage difference between the mental age grade distribution of the clinic group and Strayer's standard of gradation. The differences between the mental age grade distributions of the boys and girls is not marked.

Chronologically, only 38 per cent of the clinic group is at grade.

CHAPTER VII
CONCLUSIONS.

What factors were potent in the production of maladjustment in the clinic group? Differences between the clinic and unselected groups seem to indicate that the following factors have been active in effecting maladjustment in the clinic group.

1. Certain physical defects, that interfere with school progress appear to be much more prevalent in the clinic group than in an unselected group.
2. A comparison of the I.Q. distributions of the clinic and unselected groups, shows that the I.Q.'s of the clinic group are not concentrated about the measure of central tendency as are the I.Q.'s of the unselected group. The clinic group has a larger per cent of I.Q.'s at the upper and lower ends of the intelligence curve than the unselected group.
3. On an average the Negro clinic cases rank much lower than the White clinic cases or than an unselected group in intelligence. Lack of intelligence, or the type of intelligence measured by the Stanford Binet Scale, may account for many of their troubles.
4. On the basis of Strayer's standard of gradation, only 31.4 per cent of the clinic group is mentally at grade. Nearly half of the group is too far advanced in school for

its mental ability.

5. There may have been other factors operating to produce maladjustment in the clinic group, but only those mentioned above appear to be evidenced in the data that are available.

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APPENDIX

Table A

Correlation between mental age and standing height.
(clinic group)

Standing Height	Mental Ages										Total.	
	5	6	7	8	9:	10:	11	12	13	14		15
170-174						1:	1					2
165-169					1:	3:	2	1				4
160-164				1	3:	1:		1				6
155-159				1	3:	3:	4					11
150-154			1	1	6:	4:	2	3	3	2		22
145-149			1	1	5:	8:	8	7	5	3	1	39
140-144				1	11:	7:	10	5	4	3	1	42
<u>135-139</u>		1	1	4	8:	10:	6	5	1	1		<u>37</u>
130-134			5	4	3:	6:	4		2	1		25
125-129	1	5	3	5	8:	5:	3		1	2		33
120-124	1	1	5	14	5:	3:	1					30
115-119	1	1	5	2			1					10
110-114		5										5
105-109	1											1
Total	4	13	21	34	53:	48:	42	22	16	12	2	267

$$r = 48 \pm .03$$

$$oy = 2.52$$

$$ox = 2.10$$

Note: Standing height is expressed in centimeters.

Table B.

Correlation between mental age and weight.
(clinic group)

Weight	Mental Ages										Total.	
	5	6	7	8	9	10	11	12	13	14		15
60-64								1				1
55-59					1	1	3					5
50-54					3	2	1	1				7
45-49					4	2	1	1	1	1		10
40-44			1	2	6	6	5	2	2	4		28
35-39		1	1	4	11	12	8	11	6	2	1	57
30-34		1	4	4	13	13	15	5	4	2	1	61
25-29	2	4	6	8	10	12	5		1	2		50
20-24		7	8	17	5	2	3		2	1		45
15-19	1		2							1		3
Total	3	13	22	35	53	49	41	21	16	12	2	267

$$r = .38 \pm .02$$

$$s_y = 1.7$$

$$s_x = 2.09$$

Note: Weight is expressed in kilograms.

Table C.

Correlation between mental age and lung capacity.
(clinic group)

Lung Cap.	Mental Ages.											Total.	
	5	6	7	8	9	10	11	12	13	14	15		
3750-3999						1	:	:				1	
3500-3749							:	1	:			1	
3250-3499							:	:	1			1	
3000-3249							:	:	1	1		2	
2750-2999					1		:	:	1	1		3	
2500-2749					3	4	:	3	1	1		12	
2250-2499				1	5	5	:	7	6	3	1	28	
2000-2249			2	4	9	9	:	8	5	4	7	48	
<u>1750-1999</u>			<u>2</u>	<u>1</u>	<u>10</u>	<u>10</u>	:	<u>7</u>	<u>6</u>	<u>1</u>	<u>1</u>	<u>38</u>	
1500-1749		3	3	12	11	13	:	8	1	3	2	1	57
1250-1499			8	6	7	3	:	5		1			30
1000-1249	2	6	5	8	3	1	:	1			1		27
750- 999		1		2			:	1					4
500- 749		2					:	:	1				3
Total	2	13	20	34	49	46	:	41	23	15	11	2	255

$$r = .47 \pm .03$$

$$cx = 3.04$$

$$cy = 2$$

Note: Lung capacity is expressed in cubic centimeters.

Table D.

I.Q. distributions of 905 unselected children, 5-14 years of age and 578 clinic cases, 5-17 years of age. (Terman, "The Measurement of Intelligence." p.66)

I.Q.'s	Terman Group		Clinic Group	
	No.	%	No.	%
46-55	0	0	5	.8
56-65	2	.33	21	3.6
66-75	21	2.3	50	8.6
76-85	78	8.6	86	14.8
86-95	182	20.1	116	20.
96-105	306	33.9	117	20.
106-115	209	23.1	80	13.8
116-125	81	9.	61	10.5
126-135	21	2.3	25	4.3
136-145	5	.56	13	2.2
146-	0		4	.7
Total	905	100.	578	100
Mean	100		96.5	
Median	100.5		96.9	
S.D.	13		19.5	

Table E.

I.Q. distributions of the boys, girls, Whites and Negroes constituting the clinic group.

I.Q.'s	Boys		Girls		Whites		Negroes	
	No. 2	% .6	No. 3	% 1.	No. 3	% .6	No. 2	% 2.1
46- 55								
56- 65	10	3.2	11	4.1	16	3.2	5	5.2
66- 75	27	8.6	23	8.6	39	8.	11	11.5
76- 85	54	17.2	32	12.	64	12.8	22	23.
86- 95	63	20.5	53	19.5	85	17.6	31	32.6
96-105	67	21.4	50	16.8	103	21.3	14	14.7
106-115	39	12.5	41	15.4	73	15.1	7	7.3
116-125	35	11.2	26	9.7	60	12.4	1	1.5
126-135	7	2.2	18	6.8	23	4.7	2	2.1
136-145	5	1.6	8	3.1	13	2.6		
146-155	2	.6	2	.7	4	.8		
Total	311	100.	267	100.	483	100.	95.	100
Median I.Q.	95.9		98.3		99.3		88.4	
S.D.	18.2		20.7		19.7		14.6	

THE STANFORD BINET POINT SCALE

Name

No.

Nationality

Race

Sex

Date of birth

School grade

Social standing

Credits

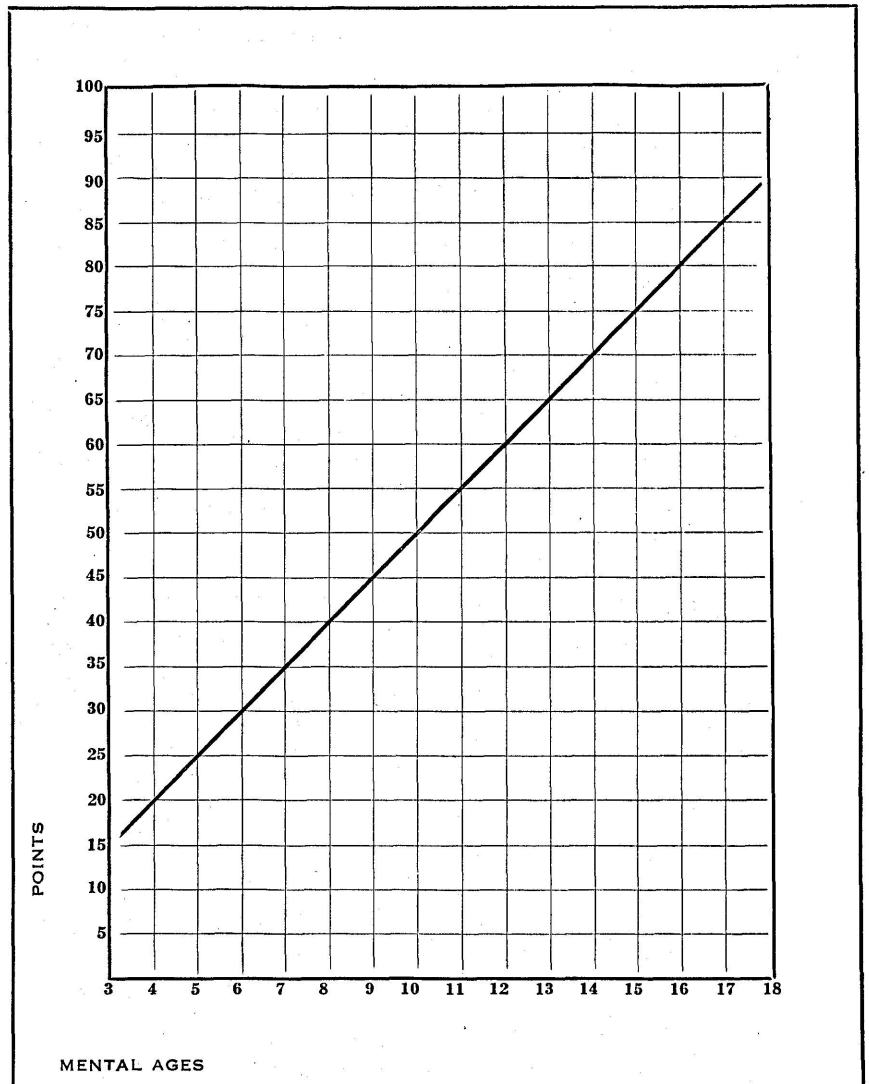
Mental age

I. Q.

Deviation from normal =

points Age when tested

General conclusions



Tested by

Date

Conditions of test

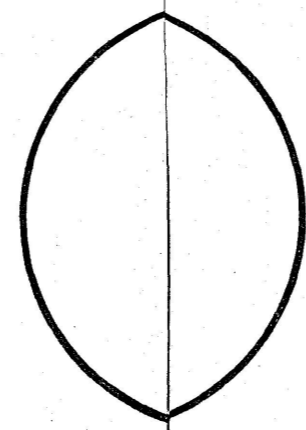
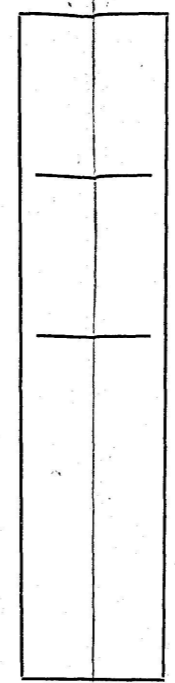
VISUAL MEMORY: SPAN	QUALITY	
SUGGESTIBILITY: HAT	LIGHT	CAT
ATTACK		
FREE ASSOCIATION		
1st	=	4th =
2d	=	5th =
3d	=	6th =

THE UNIVERSITY OF KANSAS
FIELD RECORD FORM OF EDUCATION

SPECIAL OBSERVATIONS	
1. SPEECH PECULIARITIES	
2. LANGUAGE FACILITY	
3. UNDERSTANDING	
4. ATTITUDE	
5. MOTILITY	
6. NERVE SIGNS	

A SYNOPSIS OF THORNDIKE BINET SCALE
Abbreviated and Point-Scale Use

TEST	CREDITS
1. Reaction to three Binet pictures. (a) Enumerates at least three objects in one picture (3), or (b) Describes three pictures at least one-half in terms of scenes or actions (4), or (c) Interprets 3 of 4 pictures (6). Credit only the highest test passed.	(31) (71) (121)
2. Self-orientation. (a) Points to 3 of 4: eyes, nose, ears, mouth. (3) (b) On request gives either family name, or sex. (3) (c) Shows right hand, left ear, right eye. (3 of 3 or 5 of 6)	(32) (33) (61)
3. Repeats without error: (In general one correct passes.) (a) The dog runs after the cat. (3): (3 sentences, 1 correct) (b) The boy's name is John. He is a very good boy. (1) (2 with 1 error each) (c) Yesterday I saw a pretty little dog in the street. He had curly brown hair, short legs, and a long tail. (2) (1 of 2)	(34) (41) (161)
4. Repeats digits in order. (a) 641 352 837 (3) (1 of 3) (b) 2759 8425 1962 (1) (1 of 3) (c) 59317 42583 59617 (1) (1 of 3) (d) 527618 948371 (1) (1 of 2) (e) 8247596 6195738 (2) (1 of 2) (f) 59384726 25179384 13792658 (2) (1 of 3)	(35) (42) (72) (101) (141) (181)
5. Copies figures. (a) Square. (1) (Pencil, 1 of 3) (b) Diamond. (1)	(43) (73)
6. Compares correctly. (a) Lines differing by 1 cm. in length. (1) (2 of 3 trials correct) (b) Weights of 3 and 15 grams. (3 trials, 2 correct.)	(44) (51)
7. Comprehends obligation. (a) First intention. (1) When you are tired. (2 of 3 correct.) When you are cold. When you are hungry. (b) Second intention. (1) Raining when you start to school. (2 of 3) Find your house on fire. Miss your train. (c) Third intention. (1) Broken something. (2 of 3) Late to school. Struck by playmate.	(45) (62) (81)
8. Chooses prettier pictures. (All correct.) 1. 2. 3. (1)	(52)
9. See that pictures lack. (3 of 4) (1) Arms, (2) Nose, (3) Mouth, (4) Eye, (1)	(63)
10. Defines concrete words. (a) In terms of use or better. (1) (3 of 4) (1) Chair. (2) Horse. (3) Fork. (4) Doll. (b) In terms better than use. (1) (2 of 4) (1) Balloon. (2) Tiger. (3) Football. (4) Soldier.	(53) (82)
11. Concrete problems: (a) Divided rectangle. (1) (2 of 3 trials, 1 min. each) (b) Three commissions in order. (1) (No error) (c) Correctly counts 13 pennies. (1) (1 of 2) (d) Names correctly in this order all six coins. (1) (Alternative for 15a) .25—.01—.50—.05—1.00—.10. (e) Correct change twice in three trials. (1) 10—4= ; 15—12= ; 25—4= (f) Gives value of stamps: 3×2+3×1. (1) (1 of 2)	(54) (55) (64) (84) (91) (92)
12. Time orientation. (a) Morning or afternoon. (1) (b) Names of the days of the week in order. (1) (1 of 2; 15") (c) The date correct to three days. (1)	(65) (74) (93)
13. Names differences from memory. (a) One real difference in each of two of the following. (1) (1) Fly and butterfly. (2) Stone and egg. (3) Wood and glass. (b) Differences between abstract terms. (2) (3 of 4) (1) Laziness and idleness. (2) Evolution and revolution. (3) Poverty and misery. (4) Character and reputation.	(75) (162)
TOTAL,	



TEST	CREDITS
14. Counting backward. 20-0, one error, 40 seconds. (1) Time =	(83) 14
15. The problem of the ball in the field. (a) Inferior plan. (1) (Alternative, see 11d) (b) Superior plan. (2) (Alternative, see 26a)	(84) (122) 15
16. Arranges weights in order. Five weights, three trials, 2 correct. (1)	(94) 16
17. Constructs sentence. Not over two coordinate clauses. (2 of 3; may be oral.) (1) (1) Boy, river, ball. (2) Work, money, men. (3) Clouds, rivers, lakes.	(95) 17
18. Discovers absurdity. (4 of 5 correct.) Spontaneous correction allowed. (1) (Alternative list) (1) Road to and from the city. (1') Three brothers. (2) The more cars the faster. (2') Not a serious wreck. (3) The body of the girl. (3') Remove the last car. (4) The unfortunate cyclist. (4') Swinging a cane. (5) Guide-post directions. (5') Will write again.	(102) 18
19. Reproduces designs from memory. One correct, one-half correct. Exposure 10". (1)	(103) 19
20. Gives 60 words in three minutes. (Note method followed, and indicate rate above.) (1)	(104) 20
21. Reconstructs dissected sentences. (2 of 3 correct; 1 minute each.) (2) (1) (2) (3)	(123) 21
22. Defines abstract words. (3 of 5 correct.) (2) (1) Pity. (2) Revenge. (3) Charity. (4) Envy. (5) Justice.	(124) 22
23. Induction from paper cutting. (a) Rule by sixth folding. (2) Passed at (b) Draws creases and shape of opening. (2)	(142) (182) 23
24. Problems of implied fact. (2 correct.) (2) (1) Man walking in the woods near a city. (2) Neighbor has visitors. (3) White man walks sitting down.	(143) 24
25. Problems of sustained reasoning. (a) Reversed clock-hands. (2) (2 of 3; 4 min. each; error of 4 min.) (1) 6.22 = Time = (2) 8.08 = Time = (3) 2.46 = Time = (b) Enclosed boxes. (2) (3 of 4; 30 seconds each) (1) 2 smaller, 1 inside each = (2) 2 smaller, 2 inside each = (3) 3 smaller, 3 inside each = (4) 4 smaller, 4 inside each = (c) Bring water from river. (2) (2 of 3; 5 minutes for each) (1) 7 pints with 3 and 5 pint vessels. (Start with 5 pints.) (2) 8 pints with 5 and 7 pint vessels. (Start with 5 pints.) (3) 7 pints with 4 and 9 pint vessels. (Start with 4 pints.)	(144) (163) (183) 25
26. Digits in reversed order. (1 of 3.) (Order entirely correct.) (a) 39518 72649 27584 (2) (Alternative for 15b) (b) 471952 295837 753826 (2) (c) 7258493 1462597 7359428 (2)	(122) (164) (184) 26
27. The Vocabulary test. (a) 20 words defined. (1) (b) 30 words defined. (2) (c) 40 words defined. (4) (d) 50 words defined. (6) (e) 60 words defined. (8) (f) 75 words defined. (10)	(85) (105) (125) (145) (165) (185) 27
TOTAL,	

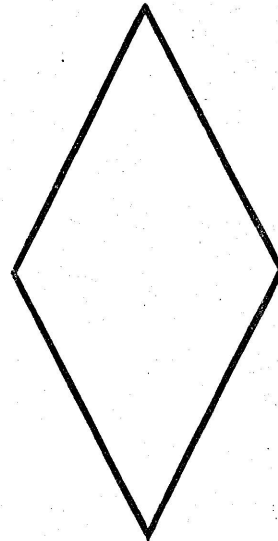
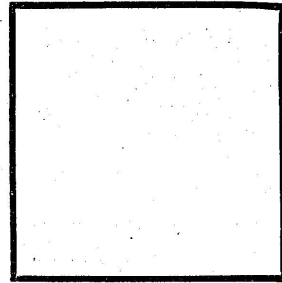
VOCABULARY

LIST I.

1. gown.....
2. tap.....
3. scorch.....
4. puddle.....
5. envelope.....
6. rule.....
7. health.....
8. eye-lash.....
9. copper.....
10. curse.....
11. pork.....
12. outward.....
13. southern.....
14. lecture.....
15. dungeon.....
16. skill.....
17. ramble.....
18. civil.....
19. insure.....
20. nerve.....
21. juggler.....
22. regard.....
23. stave.....
24. brunette.....
25. hysterics.....
26. Mars.....
27. mosaic.....
28. bewail.....
29. priceless.....
30. disproportionate.....
31. tolerate.....
32. artless.....
33. depredation.....
34. lotus.....
35. frustrate.....
36. harpy.....
37. flaunt.....
38. ochre.....
39. milksop.....
40. incrustation.....
41. retroactive.....
42. amberggris.....
43. achromatic.....
44. perfunctory.....
45. casuistry.....
46. piscatorial.....
47. sudorific.....
48. parterre.....
49. shagreen.....
50. complot.....

LIST II.

1. orange.....
2. bonfire.....
3. straw.....
4. roar.....
5. haste.....
6. afloat.....
7. guitar.....
8. mellow.....
9. impolite.....
10. plumbing.....
11. noticeable.....
12. muzzle.....
13. quake.....
14. reception.....
15. majesty.....
16. treasury.....
17. misuse.....
18. crunch.....
19. forfeit.....
20. sportive.....
21. apish.....
22. snip.....
23. shrewd.....
24. repose.....
25. peculiarity.....
26. conscientious.....
27. charter.....
28. coinage.....
29. dilapidated.....
30. promontory.....
31. avarice.....
32. gelatinous.....
33. drabble.....
34. philanthropy.....
35. irony.....
36. embody.....
37. swaddle.....
38. exaltation.....
39. infuse.....
40. selectman.....
41. declivity.....
42. laity.....
43. fen.....
44. sapient.....
45. cameo.....
46. theosophy.....
47. precipitancy.....
48. paleology.....
49. homunculus.....
50. limpet.....



NOTE: If only one list is given, multiply the number of correct definitions by 2 to get the score.

THE UNIVERSITY of KANSAS
FIELD RECORD FOR THE SCHOOL OF EDUCATION

PHYSICAL EXAMINATION

Name				No.
Born	Sex	Race	Nationality	
Age	Address			
Examined by			Date	

General Characteristics, Defects and Stigmata

(Underscore once for *moderate*, twice for *marked*, and three times for *extreme* degree.)

APPEARANCE: Expression maturity

Nutrition: fat, lean, normal.

Proportions: macroplastic, euryplastic, mixed, muscular, feminine, masculine.

SKIN; Complexion; pallid, sallow, florid, acne, eczema.

Condition: oily, moist, dry, leathery, wrinkled, baggy, scars, marks.

TEETH: Carious;

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8

 Roots: tartar, impacted;

Irregular, Rachitic, Serrated, Pointed, Pitted, Malocclusion, Gums

TONGUE: thick, pointed, large, small, furrowed, coated, enlarged papillae.

THROAT: Tonsils, enlarged, atrophied, pitted, soft, removed, inflamed.

Pharyngitis, Laryngitis, Adenoids, Cough, Mouth Breathing,

Glands, cervical maxillary thyroid

PALATE: cleft, "V" shaped, saddle-shaped, high.

LIPS: normal, thick, thin, everted, short upper, hare lip, fissured.

NOSE: deflected septum, enlarged turbinates, polipi, rhinitis, broad base, squat, cretinoid.

EYES: Pupils eccentric, irregular, unequal, immobile; Lids small palp. fissure, ptosis, oblique, epicanthus, granulated.

Control, nystagmus, strabismus, diplopia, accomodation to distance

Iris, color, R L mixed; Glasses

(Concluded on back page)

DEVELOPMENT

WEIGHT

Ponderal Index

HEIGHT Standing

Sitting

Statural Index

LENGTHS

Trunk

Arms r

Legs r

BREADTHS

Shoulders

Chest normal

Waist

Hips

DEPTHS

Chest normal

Abdomen

Pelvis

GIRTHS

Head

Neck

Chest normal

Chest con.

Chest exp.

Waist

Hips

GIRTHS

R. F. arm

R. U. arm

R. U. arm up

L. F. arm

L. U. arm

L. U. arm up

Right thigh

Right calf

Left thigh

Left calf

CRANIUM:

Index

HAIR

PHYSIOLOGICAL AGE

FUNCTIONS

REFLEXES

- Light
- Accommodation
- Ciliospinal
- Corneal
- Pharyngeal
- Scapular
- Epigastric
- Abdominal
- Cremasteric
- Lumbar
- Plantar
- Patellar
- Clonus

STRENGTHS

- Right arm
- Left arm
- Pull up
- Lung cap.
- Pulse normal
- Pulse after work

EQUILIBRIUM

TACTILITY

PAIN

TEMPERATURE

KINESTHESIA

STEREOGNOSIS

VISION: R 20/ L 20/

EYE CONTROL

AUDITORY: R L

SPEECH CONTROL

MANUAL CONTROL

FOOT CONTROL

NEURO-MUSCULAR: Tone, relaxed, flabby, tense. Corrugation, over-action of frontals.

Tremors: coarse, fine, unilateral, spastic, jerky, intermittent, rhythmical,
of what parts

finger twitches

Hand Balance: relaxed, tense, drooping, asymmetrical,

Posture: relaxed, unsteady. Head balance

Gait: normal, lively, clumsy, shuffling, spastic, ataxic, waddling.

Paralyses

Tics

Chorea

migraine

Contractures

Habit spasm

Epilepsy

Anesthesias

Fainting spells

Convulsions

Hysteria

Headache,

(Continued from first page)

EARS: acuity, R L Condition: Otitis media, R L

Impacted cerumen, perforated drum, otorrhea.

Form: Large, small, Darwinian tubercle, lobule absent, fossæ absent or irregular, pinna (size, shape) asymmetries

FACE: immobile, mobile; forehead, Bombe, receding, low or narrow; prognathous jaws, asymmetries

HEAD: hydrocephalic, macrocephalic, microcephalic, rachitic, cretinoid, asymmetries.

Hair: color coarse, dry, oily, scant, brittle. Pediculosis.

SHOULDERS: round, square, stooped, asymmetrical. Scaphoid scapula

SPINE: scoliosis C D L lordosis, C D L
kyphosis

CHEST: flat, rachitic, pigeon, funnel, barrel-shaped, asymmetrical.

Lungs: Respiration, rate character

UPPER LIMBS:

LOWER LIMBS:

Flat foot

CIRCULATION: good, poor. **Heart:** dilation, murmurs, displacements.

Pulse: volume rate rhythm pressure Veins

Arteries **Blood examination:** red corpuscles white corpuscles

hemoglobin color index Widal Wasserman

ALIMENTATION: appetite digestion abdomen stomach

intestines

hernia

GENITO-URINARY SYSTEM:

OTHER DEFECTS OR STIGMATA:

ACTIVE DISEASE PROCESSES: