

A STUDY OF RETARDATION  
in the  
PUBLIC SCHOOLS  
of  
EUGENE, OREGON

BY

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Master's Thesis, 1922.

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### PURPOSE.

A twofold purpose obtained in making the following study. The first purpose, which guided the greater part of the work, was that of determining the extent, causes and cost of retardation in a typical larger sized Oregon town. The second purpose was to determine what measures will reduce the present rate of retardation.

### OCCASION.

The policy adopted by the Oregon State Survey of Mental Defect, Delinquency and Dependency called for, first, a general investigation of these conditions as found in Oregon, and, second, a number of rather intensive studies of various related problems. The following report is the result of one of these intensive studies. The problem of school children being over-age for their grade, or in other words, retarded, is very closely related with the problems of the defective, the delinquent and the dependent. It is often found that over-age for grade children are defective, either mentally or physically, and it is almost always true that the delinquent and dependent classes are recruited from those who when at school age were unable to make normal progress--that is, one grade per school year. Since retarded children

are seen to be social liabilities there is easily recognized the social and economic importance of any study which gets at the fundamental causes of their retarded condition and makes any feasible suggestions regarding treatment or prevention.

#### MEANING OF TERM "RETARDATION."

The term retardation first came into use when Seguin concluded that feeble-mindedness was the result of arrested mental development, and spoke of the feeble-minded as being retarded mentally. When the first efforts were made to enforce compulsory education laws it was discovered that some children who were not feeble-minded could not make normal progress in the ordinary day schools. The term came then to be applied to these children. Witmer (20) in the Psychological Clinic in 1910 defines the term as follows:\* "We may . . . say that any child, the functions of whose brain are not developed up to the normal limit for his age, is suffering from retardation, and a youth who arrives at the age of maturity with his brain below the level of functional development which it might have attained, had other methods been employed, will carry through life a permanent arrest of mental and moral development." Witmer speaks of this as "psychological retardation."

\* Witmer, Lightner: What is Meant by Retardation. Psychological Clinic, 1910, Vol IV, pp 121-131.



For purposes of school statistics, children who are over-age for their grade are usually spoken of as being pedagogically retarded. It is in this sense that the term is used in this study except where a different use is so specified. Two years of chronological age are allowed for each grade. Thus a child in the first grade is at-age if his chronological age is six or seven years, in the second grade if seven or eight years, etc. This seems only fair since the data for this study was gathered in the spring near the end of the school year, and many pupils who were not permitted to enter the public school until after their sixth birthday had already passed their seventh birthday by the end of the school year.

#### LOCATION.

The city of Eugene was chosen for this study. Being one of the larger sized towns in Oregon it was believed that conditions affecting retardation here were similar to those in most any part of the state, except the city of Portland and possibly the rural sections. However since many children in the schools of Eugene have at one time attended rural schools in this state and their retardation has in many cases come about because of distinctly rural conditions, it may be said that this is a study of general causes of retardation as found throughout the state except in the city of Portland

### THE GROUP

In the town of Eugene 258 children were reported by their teachers as being retarded, or let us say, over-age-for-grade, one or more years. These children constitute the group upon whom this report is based. They come from four schools of the first six grades each, two schools of the first eight grades each and a Junior High School composed of the 7th, 8th and 9th grades. This Junior High School is of a semi-public character, and is not a part of the city system. No cases were taken from the City High School (of four years) or from the Catholic Parochial School, or from the one or two small private schools in the town. The average enrollment of those below the ninth grade in the city schools at the time this study was made was 1140.8. There were 48 teachers in grades below the ninth, making the average number of pupils per teacher 25.8 in the city schools. In the Junior High School comprising the 7th, 8th and 9th grades there were about 150 pupils enrolled. Assigned to the instruction of these pupils were: 5 full time teachers, 4 half-time teachers and practice teachers whose combined teaching was equal to the work of one full time teacher. The average number of pupils per instructor is thus seen to be approximately 18.75, a comparatively small number. The instruction and equipment in this school was of such



a nature as to make normal advancement of pupils the rule, were instruction and equipment the only factors which might affect school progress.

In gathering data on retarded children every effort was made to insure accuracy and completeness. The specially prepared data card prepared for use in the Survey was used in this study, a copy of which card is included in this report. Teachers were visited in their school rooms by the investigator and the Survey cards fully explained. In some cases the cards were filled in by the investigator, the teacher furnishing the information. However, in spite of all these efforts, some data proved very meager due to the teachers failing to know or to record all the information they did have on the subjects. In some cases the teacher's judgment was not accurate, possibly because of a lack of training in observation. To supplement information given by the teachers, records of the school nurse and of the City Superintendent were consulted. The mental tests were given by students of Dr. B. W. DeBusk, head of the Department of Educational Psychology, and were supervised by Dr. DeBusk and Miss Ruth Montgomery, Graduate Assistant in Education.

The school system in which this study was made was one of the better systems of the state. Special instruction has been given for years in the grade schools

The University of Oregon, directed by the U. S. PUBLIC HEALTH SERVICE, requests your cooperation in filling out this card for any case of mental defect, dependency or delinquency which comes under your observation. Please return promptly to Extension Division, University of Oregon, Eugene, Oregon

Name: Surname Given name Birthplace Age Single Divorced Occupation Alias, Reaction to  
(Specify county Married Separated (or that of father if any sex matters  
if in Oregon) Widowed Common Law if under 14)

Legitimate Illegitimate Illegitimate children

RESIDENCE: County Address, street Village, town How long How long Citizen of Religion Race  
or R.F.D. or city in U.S. in Oregon what state  
or country

PHYSICAL STATUS Specify physical Blind-one eye both Specify Venereal Wasserman  
(Specify diseases) handicaps, as Deaf--one ear both diseases, Reactions taken  
Crippled or deformed if any

EMOTIONAL FIELD Stable Unstable Periodic upsets Over-valuation Shut-in or Frank, open Other types  
(Temperament) (Tantrums) (Variation of of ideas seclusive type type  
moods) Enthusiasms

|   |                    |         |  |   |                               |               |                 |
|---|--------------------|---------|--|---|-------------------------------|---------------|-----------------|
| PERSONAL HISTORY<br>(Check known facts) | Truant             | Liar    | Attended school (check where)            | Steady worker                                     | What                          | Weekly wage   | Self-supporting |
|   | Cruelty-Animals    |         | City, villiage (under 2,000)             | Intermittent "                                    | What                          | Weekly income | Self-supporting |
|   | Crimes--Property   |         | Rural                                    | Partial dependent                                 | Public funds                  | Private funds | Cause           |
|   | Crimes-Persons     |         | PRESENT GRADE                            | Complete "  | Public funds                  | Private funds | Cause           |
|   | Sex pervert        |         | How many school grades retarded for age? | Condition: Affluent, Comfortable                  | Poor                          | Squalid       | Tramp           |
|   | Sex offender       |         | grade repeater 1, 2, 3, 4, times         | No anti-social conduct                            | Delinquent, never apprehended |               |                 |
|   | Pyromania          |         |  | Apprehended but not convicted                     | Sentenced                     |               |                 |
|   | Homicidal          |         | No progress in grades                    | Sojourn in any institution-give dates and details |                               |               |                 |
|   | Ungovernable child |         | Education: None reads reads and writes   |   |                               |               |                 |
|   | Family deserter    |         | Grammar school High school               |   |                               |               |                 |
| Illicit consorts                        |                    | College |  |   |                               |               |                 |



Does this person show symptoms of (feeble-minded) Check--Idiot Imbecile Moron Borderline Subnormal

MENTAL DEFECT

If Psychometric tests were made specify findings

Intelligence Quotient Mental Age

Is he ALCOHOLIC? (regular) (irregular) Epileptic Insane (Diagnosis) Drug addict (specify)

HEREDITY

|  |                                     |   |                    |
|--|-------------------------------------|---|--------------------|
| Father's name  | Birthplace                          | Mother's maiden name                    | Birthplace         |
| Father a citizen of what country   | Has he first naturalization papers? | Has he completed naturalization papers? |                    |
| Father's mentality   | Temperament                         | Successful                              | Anti-social record |
| Mother's mentality   | Temperament                         | Successful                              | Anti-social record |
| The family of this subject is composed of brothers and sisters, of whom males and females are living |                                     |   |                    |
| Specify all mental and nervous disorders ANY relative of the family ever developed                   |                                     |   |                    |

CAUSES: State what you believe to be the cause of the subject's trouble

SUGGESTIONS as to needs:

DATE OF THIS RECORD

REMARKS; (Write additional information on the back of this card)

in art, music and physical education. Some work in domestic science and manual training has also been given. Teachers in order to enter the system must meet certain definite requirements in professional training and successful experience, with the result that the teaching force has been above the ordinary in the quality of service rendered.

Certain measures have been taken with the end and aim of eliminating retardation. New pupils are subjected to a physical examination upon entering school. Where remedial defects are found recommendations are made to parents as to proper medical treatment and health practices for the child. A record is kept of the diseases from which the child has suffered. A school nurse is employed whose duty it is in part to advise parents as to treatment to be given children absent from school because of illness. The relation of the teachers and the work of the school nurse is shown by the following letter sent to all the teachers the first day of school.

EUGENE PUBLIC SCHOOLS  
EUGENE, OREGON.

Mrs. ----- has been employed as school nurse to serve every afternoon of the school days through the year. Each teacher is expected to be responsible for the pupils who are absent from her room. If the pupil has a telephone, find out on the first day why he is absent. If the pupil has no telephone, look up the pupil within three days. If the absence is truancy, ask the principal to notify the truant officer at once, telephone ---. If



the absence is caused by serious illness, or if the teacher thinks there is a possibility of the illness being a contagious disease, notify the school nurse at telephone number ---. If the teacher believes the illness to be only slight, do not notify the nurse for three days. If the illness continues for three days, the nurse should be notified.

If when a child returns to school after a slight illness, the teacher is in doubt, the nurse asks that the teacher take the child's temperature. If it is above normal, the child should be sent home, and the nurse be notified. Each school will be furnished with a clinical thermometer which should be kept in a solution of Lysol.

Yours very truly,

-----  
Superintendent.

For the assistance of teachers in dealing with cases of infectious disease there has been supplied to them the following chart (shown as Chart I in this report) explaining the quarantine regulations as specified by Oregon State Law. An effort is made to enforce strictly all existing quarantine laws.

For a number of years mental tests have been given to some of the children in the various schools of the city of Eugene. It has been the aim to give a mental examination to each child but due to a limited corps of examiners the testing has been largely confined to children whose conduct had caused the teachers some special concern, or children who were not making normal progress in their class work. The examination most generally used was the Stanford Revision of the Binet-Simon

EUGENE PUBLIC SCHOOLS -- DEPARTMENT OF HEALTH  
Regulations concerning Infectious Diseases based upon Oregon State Law

|                | Incubation Period           | Date of definite illness when the eruption                |                | Quarantine required after latest exposure to infection | Members of family in school system  | Infection Ceases   |
|----------------|-----------------------------|---|----------------|--|---|--|
|                |                             | Appears   | Begins to Fade |  |   |  |
| Chickenpox     | 10 to 20 days               | 1st day and 3 following days                              | About 4th      | 14 days  | Children having had disease may attend providing no contact with patient or sick room | When every scab has fallen off   |
| German measles | 7 to 18 days or even longer | 2nd to 4th  | 4th to 7th     | 10 days  | Children having had disease may attend providing no contact with patient or sick room | In not less than ten days from appearance of rash  |
| Measles        | 7 to 14 days                | 4th day Highly infectious for 2 days before rash appears. | 5th to 7th     | 10 days  | Children having had disease may attend providing no contact with patient or sick room | In not less than one week from appearance of rash  |
| Mumps          | 10 to 25 days               | Contagion occurs before appearance of any symptoms        |                | 14 days  | Children having had disease may attend providing no contact with patient              | In not less than 3 weeks and only when one week has elapsed since subsidence of all swelling     |
| Influenza      | 2 to 5 days                 |   |                | 2 weeks or until quarantine is removed                 | Absolute Quarantine   | After fever, cold and cough gone.  |
| Diphtheria     | 1 to 7 days                 |   |                | 14 days  | Absolute Quarantine   | In four weeks if no discharge and if bacteriological examination of nose and throat be negative. |

Chart 1.



|                         |                                   |  |                 |             |   |   |
|-------------------------|-----------------------------------|--|-----------------|-------------|---|---|
| • Scarlet Fever •       | • 1 to 8 days<br>usually 3 to 5 • | • 2nd •  | • 5th •         | • 30 days • | • Absolute Quarantine<br>• Persons exposed outside of family isolated for ten days. • | • When desquamation sore throat and albuminuria disappear but not less than six weeks. •                  |
| • Whooping cough •      | • 4 to 14 days •                  | • Whooping may not begin for 3 weeks but infectious before • | • •             | • 21 days • | • Persons having had disease may attend school. •                                     | • In 5 weeks from the commencement, provided all spasmodic coughing and whooping have ceased two weeks. • |
| • Smallpox •            | • 12 to 14 days •                 | • 3rd or 4th •   | • 9th or 10th • | • 21 days • | • Absolute Quarantine •   | • When every scab has disappeared •   |
| • Ringworm •            | • •                               | • •  | • •             | • •         | • Other members of family may attend school •   | • When examination reveals no broken off diseased hairs. •  |
| • Impetigo Contagiosa • | • 0-2 •                           | • •  | • •             | • 2 weeks • | • Other members of family may attend school •   | • Under skin lesions clear up •   |

Any pupil who has been absent 3 days or more must obtain a certificate from the School Health Officer, Health Director or family physician before returning to school.

Intelligence Tests, although in certain of the 7th and 8th grades the Army Alpha was given. Knowledge of intelligence ratings of pupils often proved of great assistance to teachers in outlining work and making promotions. Much greater use could be made of intelligence tests by requiring that they be given to every pupil. The use of them in the city of Eugene has been sufficient to easily prove their value in any school system.

Promotions are now made twice each year, when there are pupils ready to advance. For some time there has been an attempt made to arrange classes so that promotions would occur but once every school year, but this system is now abandoned. Such a method was seen to hold back many children who were ready to advance before the end of the school year, and thus increased the rate of retardation. As yet little use has been made of pedagogical tests. No special classes have been formed for over-age or defective pupils, although there is a movement now on foot for the formation of such classes.

The first investigation made of these 258 over-age children was one of their nativity and early residence, the aim being to discover to what extent their retardation had occurred because of conditions they had experienced in Oregon. Table 1 shows the nativity of the children studied. Table 2 shows the length of residence in Oregon of those born elsewhere. The foreign child in Table 2 who had lived in the U. S. 5 years is in the 8th grade.



Considering the difficulty of mastering a new language, her record is remarkable. The tables show that most of the causes of the retardation of these children are to be sought in Oregon, since approximately 51% of all children reported have spent their entire lives in this state and since about 66% of the school life of the others was in Oregon.

Table 1. NATIVITY OF CASES.

|                              |           |    |      |
|------------------------------|-----------|----|------|
| Born in Oregon               | 112 cases | or | 43%  |
| Born in other states         | 102 cases | or | 40%  |
| Born in foreign countries    | 5 cases   | or | 2%   |
| Place of nativity not stated | 39 cases  | or | 15%  |
| Total                        | 258 cases | or | 100% |

Dividing the 39 whose place of birth is not known according to the proportion of the 112 to 102 probably 20 of these were born in Oregon and 19 elsewhere, swelling the number born in Oregon to 132 or 51% of the whole, and those born in other states to 121 or 47%.

Table 2. RESIDENCE OF CHILDREN BORN OUTSIDE THE STATE OF OREGON.

|   |          |
|---|----------|
| Stated how long they had lived in Oregon  | 38       |
| Average age of these 38 children  | 14½ yrs. |
| Average number of years lived in Oregon   | 5½ yrs.  |
| Per cent of school life spent in Oregon,<br>(considering that each child entered school<br>at 6 yrs.) | 66%      |
| ----- 0 -----   |          |
| Of those born in foreign countries number who<br>stated how long they had lived in Oregon             | 1        |
| Age of this child   | 16 yrs.  |
| Number of years lived in U. S.<br>(in Oregon)   | 5 yrs.   |

In describing the group studied, a word should be said about the economic and social status of the children.

But little could be ascertained from the information given by the teachers regarding economic conditions. In but 48 cases did they say anything whatever on this subject. 23 cases were said to be in comfortable circumstances, 22 were poor and 3 were dependent. In response to the notation "affluent", none were marked. It may be assumed however that the majority at least of all children reported are in comfortable circumstances. That is, they do not want for food, clothing or shelter, and their parents are able to provide medical attention when needed. While a certain per cent of the populace is of the drifting, shiftless type, a fair degree of prosperity exists among those who will work. More light on the economic and social status of these retarded children may be gained from Table 3 which shows the occupations of the parents of about 50% of the children. It may be taken that this occupational classification is representative of the whole group.

Table 3. OCCUPATION OF PARENTS.

|                       |     |       |        |
|-----------------------|-----|-------|--------|
| Professional          | 2   | or    | 1.8%   |
| Farmers               | 29  | or    | 26.1%  |
| Merchants             | 10  | or    | 9.0%   |
| Clerks                | 4   | or    | 3.6%   |
| Skilled Laborers      | 22  | or    | 19.8%  |
| Unskilled Laborers    | 44  | or    | 39.7%  |
| Total reported        | 111 | or    | 100.0% |
| Occupation not stated | 110 |       |        |
| *Boys over 14         | 37  |       |        |
| Total                 | 258 | cases |        |

\*In case of boys over 14 years of age the occupation was not stated.



## DISTRIBUTION AND AMOUNT.

In the preliminary analysis of the data, several tables have been prepared which show well some of the more important general facts about the group. The first three show facts relating to the amount and distribution of retardation. Table 4 is an age-grade scale showing the grade location of the 258 retarded children. The per cent of the total enrollment which the figures in this table represent could have been given had the 258 cases reported been the only retarded children in the city of Eugene. Figures relative to the per cent of total enrollment retarded are not available. Tables 5 and 6 are but explanatory tables of the material given in table 4. Table 5 shows the amount of retardation in each grade and the per cent it represents of the cases reported. Table 6 shows the amount of retardation as distributed among the different ages represented.

Table 4. AGE-GRADE DISTRIBUTION OF 258 RETARDED CHILDREN IN THE CITY OF EUGENE.

| Age    | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Totals | %     |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|-------|
| Grade  | 13 | 4  | 1  |    |    |    |    |    |    |    |    |    | 18 |        |       |
| 1      | 10 | 3  | 1  |    |    |    |    |    |    |    |    |    | 14 | 32     | 12.4  |
| 2      |    | 19 | 4  | 5  |    |    |    |    |    |    |    |    | 28 |        |       |
|        |    | 12 | 2  | 5  |    |    |    |    |    |    |    |    | 19 | 47     | 18.2  |
| 3      |    |    | 5  | 7  | 4  | 1  |    | 0  |    |    |    |    | 17 |        |       |
|        |    |    | 2  | 8  | 4  | 1  |    | 1  |    |    |    |    | 16 | 33     | 12.8  |
| 4      |    |    |    | 8  | 6  | 2  | 4  |    |    | 0  |    |    | 20 |        |       |
|        |    |    |    | 2  | 5  | 2  | 1  |    |    | 1  |    |    | 11 | 31     | 12.0  |
| 5      |    |    |    |    | 2  | 6  | 3  | 2  |    |    |    |    | 13 |        |       |
|        |    |    |    |    | 6  | 4  | 1  | 0  |    |    |    |    | 11 | 24     | 9.3   |
| 6      |    |    |    |    |    | 6  | 5  | 5  | 0  |    |    |    | 15 |        |       |
|        |    |    |    |    |    | 6  | 2  | 1  | 1  |    |    |    | 10 | 25     | 9.7   |
| 7      |    |    |    |    |    |    | 7  | 11 | 2  | 0  |    | 0  | 20 |        |       |
|        |    |    |    |    |    |    | 5  | 5  | 4  | 1  |    | 1  | 16 | 36     | 14.0  |
| 8      |    |    |    |    |    |    |    | 6  | 3  | 2  | 1  |    | 12 |        |       |
|        |    |    |    |    |    |    |    | 1  | 5  | 1  | 0  |    | 7  | 19     | 7.4   |
| I      |    |    |    |    |    |    |    |    | 3  | 1  |    |    | 1  | 5      |       |
|        |    |    |    |    |    |    |    |    | 3  | 3  |    |    | 0  | 6      | 11    |
| Totals | 13 | 23 | 10 | 20 | 12 | 14 | 19 | 24 | 8  | 3  | 1  | 0  | 1  | 148    |       |
|        | 10 | 15 | 5  | 15 | 15 | 13 | 9  | 8  | 13 | 6  | 0  | 1  | 0  | 110    | 100.0 |
|        | 23 | 38 | 15 | 35 | 27 | 27 | 28 | 32 | 21 | 9  | 1  | 1  |    | 258    |       |

The age and grade are those of the child at the time he was reported as retarded. Numbers in upper left hand corners are boys, in lower right hand corners are girls. Underlined spaces indicate those for at--age for grade children.

Table 5. AMOUNT OF RETARDATION IN EACH GRADE.

| Years Retarded. | 1  | 2  | 3 | 4 | 5 | 6 | 7 | %    |
|-----------------|----|----|---|---|---|---|---|------|
| Grade           |    |    |   |   |   |   |   |      |
| 1               | 13 | 5  | 2 |   |   |   |   |      |
|                 | 9  | 4  | 1 |   |   |   |   | 12.4 |
| 2               | 17 | 6  | 5 |   |   |   |   |      |
|                 | 12 | 2  | 5 |   |   |   |   | 18.2 |
| 3               | 5  | 7  | 4 | 1 |   | 0 |   |      |
|                 | 2  | 8  | 4 | 1 |   | 1 |   | 12.8 |
| 4               | 8  | 6  | 4 | 2 |   |   | 0 |      |
|                 | 2  | 4  | 3 | 1 |   |   | 1 | 12.0 |
| 5               | 2  | 6  | 3 | 2 |   |   |   |      |
|                 | 6  | 4  | 1 | 0 |   |   |   | 9.3  |
| 6               | 4  | 6  | 5 | 0 |   |   |   |      |
|                 | 6  | 2  | 1 | 1 |   |   |   | 9.7  |
| 7               | 7  | 11 | 2 | 0 |   | 0 |   |      |
|                 | 5  | 5  | 4 | 1 |   | 1 |   | 14.0 |





## THE COST.

All attempts to accurately measure the cost of retardation have failed. It is generally realized that in most cases retarded children cause an actual outlay of money by the taxpayer, but there seems to be no very satisfactory way of discovering just how much that outlay is. It is sometimes true that extra teachers must be employed because school-rooms are over-crowded by children who are repeating grades. While the actual cost cannot be computed it must always be remembered that there is a cost, and that the cost does not always end with the repetition of one grade by a child. Often these retarded children will fail again and again, and with every failure of promotion and consequent repetition of a grade there may be additional cost. A few of these children have not the physical or mental ability ever to become self supporting, with the result that they may become public charges. With others, their school failure is but a symptom of socially unacceptable modes of behavior, which if continued might make of them wards of the public, in reform school, penitentiary, almshouse or other public or charitable institution.

In addition to these costs which, could they be estimated would be expressed in dollars and cents, there are to both society and the individual other far greater costs which even more successfully defy all attempts at approximate measurement. There is often an endless waste



of time and energy on the part of the teacher in attempts to teach those who are unable to learn. The over-age pupil, if he be defective, has a deadening effect on the activities of the class-room, thus holding back the work of those who are able to profit by school instruction. In cases in which retardation might have been prevented, the cost is made greater yet because the individual is never trained so as to be able to do his fullest amount of work in the world. This lowering of human efficiency, while immeasurable, is a tremendous loss to both the individual and society in general.

#### THE CAUSES.

In compiling the data for this study the foremost aim has been to discover the primary or fundamental causes of retardation with a view toward their removal. The tendency on the part of most students of the problem of retardation has been to fail to make any very thorough analysis of the causes. Ayres (2) in 1909 in his book "Laggards in Our Schools", spoke of some definite conditions in the schools which caused children to make poor progress, and made recommendations for their removal. However, in some respects he failed in his analysis of the causes. For instance, he enumerates irregular attendance as being a prominent cause of failure of promotion, and of this in turn as a chief cause of retardation, but he makes no attempt to analyze the conditions which cause irregular attendance. Teachers in reporting retarded

pupils assign as causes the more evident conditions preceding or leading to retardation. It was so in this study. Cubberley ( 6 ) in his Salt Lake City survey lists some ten causes given by teachers, but upon analysis he found that these could be reduced to three which produced practically all the retardation in the city, (a) mental deficiency, (b) physical ailments, and (c) poor home conditions.

Smiley Blanton ( 4 ), of the University of Wisconsin, in 1917 made a study in Madison of children retarded three years or more. He eliminated (a) those who had been absent from school because of illness, or (b) made poor progress because of illness, even though they had not been absent, (c) those who had lived in the country where schools were lacking or poor, and (d) those who had traveled and lost time. While teachers attributed the over-age-ness of the remaining 105 cases to laziness and lack of application, or to the parents' lack of interest in the child's school work, he found upon careful study that retardation had resulted from: (a) Feeble-mindedness, (b) Mental dullness, (c) Backwardness due to some abnormality of internal secretions, (d) Specialized defects, or (e) Neuroses, which prevented the child from adjusting himself to the school curriculum.

In this study of the children in the city of Eugene an effort will be made to distinguish between the



more evident precipitating causes and the less easily arrived at fundamental, primary conditions producing retardation. Comparison of judgements is made in a few cases to illustrate what may be called fundamental causes as distinguished from precipitating causes.

Case No. 147 is a girl 12 years old, in the 3rd grade. She is thus retarded 3 years. The card as filled out by the teacher gives the following information:

"Nervous and self conscious--Retarded 3 years--Subnormal mentality." The teacher then goes on to state her belief as to the cause of the subject's trouble: "Had bad case of adenoids. I have seen Mother. She seems very frail and flighty." On the back of the card the teacher continues her remarks about the child. "-----seems unable to learn. She can write and recognize only a few simple words. She is very nervous and her attention wanders. Father and Mother are separated. Mother does housework." It happened that this girl had a brother, Case No. 194, in another grade whose conduct in school was similar. The teacher's comments about the cause of this pupil's retardation are: "Lack of proper care at home. ----is very inattentive, perhaps due to irregular attendance." In the latter case the teacher has stated exactly the precipitating cause. In the former she has stated it to be a bad case of adenoids. The real or fundamental cause is poor heredity. The mother undoubtedly comes from poor stock. She lacks the ability to be constant

in her attentions to her family. Being of a "frail and flighty" disposition her children's environment is not favorable to the development of sound physical or mental health. One child is nervous and self conscious. The other is inattentive. Neither physical nor "social" heredity favor normal school progress.

Another example is Case No. 85, a boy 13 years old, in the 5th grade, 2 years retarded and the son of a laborer. This boy is checked as being of a shut in, seclusive disposition and very slow in his school work. The reason which the teacher gives for his retardation, which in this case is the precipitating cause, is, "Does not like books." The teacher then suggests that his work be "presented in such a way that it connects with the things he is interested in" and states that he is "very fond of machinery." But Case No. 14, a brother, 17 years old, in the 8th grade, 3 years retarded, sheds some light on No. 85's troubles. The precipitating cause in this older boy is "Inability to learn", but in reality he is mentally dull. His mental age is 2 years below his chronological age, giving him an intelligence quotient of 89. His actions are, however, of such a nature that the examiner judged him as feeble-minded. While he is able to pass many of the tests in the Stanford-Binet examination, he has much of the silliness of action that characterizes the behavior of



some feeble-minded. Viewing his lack of stability of character and his general failure to act intelligently in the ordinary affairs of life one is inclined to accept the judgement of the examiner and to consider him as a borderline case at least. The parents are said by their neighbors to be very peculiar people, somewhat secretive and overly particular about small matters of conduct. The real cause of retardation in these two boys is undoubtedly a mental one, in the one boy, merely dullness, while in the other borderline deficiency. Coupled with this may be peculiarities of personality which interfere with school progress. It may with a fair degree of safety be surmised that there is some strain of mental defect in this family, for while evidenced only in the parents by peculiarities of character, it appears in a more definite form in at least one of the children. Studies which have been made by Goddard (11, 12, 13), Davenport (7), and other authorities on the subjects of both mental defect and inheritance tend to bear out any such conclusions as this.

The following pages attempt to show the fundamental or primary causes although of necessity frequent mention must be made of the precipitating and contributory causes. No satisfactory table can be prepared showing the relative values of fundamental causes, such as inferior

hereditary stock or physical defect and disease. Discussions only may be made, drawing from such tables as are possible and from studies of individual cases for information. However, an attempt has been made to list the predominating causes, and where possible designate fundamental causes. This has been done in Table 7 as well as possible from data given on the survey cards by the teachers. To illustrate how one may interpret data, arriving at fundamental causes from the evident causes, one has but to refer to the heading, Economic Causes, under which is listed "moved from place to place." In this case the children often came from families that are known as "drifters." Their parents move from place to place seeking work and never finding anything at which they will stay for any great length of time. Had more definite information regarding these children been available it is altogether possible that the fundamental cause of their retardation would have been found to be Heredity and Constitutional Inferiority. In other words, the conduct of their parents show that they are of poor mentality or else lack the ability to adjust themselves to an environment. Upon such failure to succeed or to adjust, they seek a new environment by moving to another town or job. In the popular parlance they are "poor stock."



Table 7. PREDOMINATING CAUSES OF RETARDATION.

|   |             |      |             |    |     |
|---|-------------|------|-------------|----|-----|
| I. Heredity and Constitutional                    |             |      |             |    |     |
| Inferiority.....                                  | 16 cases or | 6.2% | 16 cases or | 6  | .2% |
| II Mental.....                                    | 83          | "    | "           | 32 | .1% |
| 1. Mental Defect.....                             | 32          | "    | "           |    |     |
| 2. Affective deviation.....                       | 16          | "    | "           |    |     |
| 3. Psychopathic personality                       | 4           | "    | "           |    |     |
| 4. Chorea.....                                    | 1           | "    | "           |    |     |
| 5. Dullness.....                                  | 24          | "    | "           |    |     |
| 6. All other neuro-mental.. disorders.....        | 6           | "    | "           |    |     |
| III. Economic.....                                | 24          | "    | "           | 9  | .4% |
| 1. Poor home and living conditions.....           | 8           | "    | "           |    |     |
| 2. Child had no opportunity                       | 1           | "    | "           |    |     |
| 3. Child works outside of home.....               | 1           | "    | "           |    |     |
| 4. Moved from place to place.....                 | 13          | "    | "           |    |     |
| 5. Service in army.....                           | 1           | "    | "           |    |     |
| IV Environmental.....                             | 44          | "    | "           | 17 | .0% |
| 1. Entered late for Various reasons.....          | 14          | "    | "           |    |     |
| 2. Foreign born-foreign language dif.....         | 1           | "    | "           |    |     |
| 3. Poor, dangerous roads-mountains.....           | 1           | "    | "           |    |     |
| 4. No school available.....                       | 5           | "    | "           |    |     |
| 5. Lack of opportunity to attend school.....      | 4           | "    | "           |    |     |
| 6. Lack of adequate instruction.....              | 6           | "    | "           |    |     |
| 7. Loss of one or both parents.....               | 1           | "    | "           |    |     |
| 8. Lack of home training...                       | 7           | "    | "           |    |     |
| 9. Child not kept in school                       | 5           | "    | "           |    |     |
| V Temperamental.....                              | 4           | "    | "           | 1  | .6% |
| 1. Bad habits; bad conduct; lazy.....             | 1           | "    | "           |    |     |
| 2. Poor application; dreamer other interests..... | 3           | "    | "           |    |     |
| VI Physical.....                                  | 78          | "    | "           | 30 | .2% |
| 1. Undeveloped.....                               | 1           | "    | "           |    |     |

Table 7. Predominating causes of retardation (Con.)

|  |    |       |    |       |
|--|----|-------|----|-------|
| 2. Undernourished.....                       | 6  | cases | or | 2.3%  |
| 3. Tuberculosis.....                         | 2  | "     | "  | .8%   |
| 4. Defective hearing.....                    | 1  | "     | "  | .4%   |
| 5. Defective vision.....                     | 9  | "     | "  | 3.5%  |
| 6. Defective teeth.....                      | 2  | "     | "  | .8%   |
| 7. Defective speech.....                     | 1  | "     | "  | .4%   |
| 8. Adenoids, tonsils, throat<br>trouble..... | 7  | "     | "  | 2.7%  |
| 9. Ill health.....                           | 49 | "     | "  | 18.9% |

VII Miscellaneous..... 9 cases  
or

|                                 |     |   |   |        |       |
|---------------------------------|-----|---|---|--------|-------|
| 1. Cause not differentiated.... | 3   | " | " | 1.2%   | 3.5%  |
| 2. No cause assigned.....       | 6   | " | " | 2.3%   |       |
|                                 | 258 | " | " | 100.0% | 258 " |

The following is a consolidation of the Predominating Causes:

|  |     |       |    |        |
|--|-----|-------|----|--------|
| Mental Defect and Dullness..                   | 83  | cases | or | 32.1%  |
| Disease and Physical Defect.                   | 78  | "     | "  | 30.2%  |
| Poor Heredity and Improper<br>Environment..... | 60  | "     | "  | 23.2%  |
| Economic and Other Causes...                   | 37  | "     | "  | 14.5%  |
| Total.....                                     | 258 | "     | "  | 100.0% |

That there are predominating influences acting to cause retardation implies that there are other influences which contribute. Table 8 lists all the contributing causes mentioned by teachers. These, with few exceptions, are but symptoms of more fundamental causes, although each contributing condition plays its part in the retarding process. In the total of causes mentioned, it is seen that many causes are mentioned for each case, just as one physical ailment may have many symptoms. In this table the per cents show only relative importance of causes as contrasted one with another.

100.0%



Table 8. CAUSES STATED BY TEACHERS AS CONTRIBUTING TO RETARDATION

|  |     |       |    |       |                |      |
|--|-----|-------|----|-------|----------------|------|
| I. Mental and Nervous Inferiority..... |     |       |    |       | 119 times or 1 | 1.8% |
| 1. Mental defect.....                  | 41  | times | or | 5.1%  |                |      |
| 2. Mental dullness.....                | 53  | "     | "  | 6.6%  |                |      |
| 3. Nervousness.....                    | 25  | "     | "  | 3.1%  |                |      |
| II. Physical.....                      |     |       |    |       | 288 " " 3      | 5.9% |
| 1. Defective sight.....                | 26  | "     | "  | 3.2%  |                |      |
| 2. Defective hearing.....              | 7   | "     | "  | .9%   |                |      |
| 3. Defective teeth.....                | 12  | "     | "  | 1.5%  |                |      |
| 4. Defective speech.....               | 4   | "     | "  | .5%   |                |      |
| 5. Adenoids, tonsils, etc....          | 44  | "     | "  | 5.5%  |                |      |
| 6. Nasal deformities.....              | 1   | "     | "  | .1%   |                |      |
| 7. Crippled.....                       | 3   | "     | "  | .4%   |                |      |
| 8. Tuberculosis (possibly)...          | 3   | "     | "  | .4%   |                |      |
| 9. Malnutrition.....                   | 15  | "     | "  | 1.9%  |                |      |
| 10. General bodily weakness..          | 7   | "     | "  | .9%   |                |      |
| 11. Illness of various sorts.          | 166 | "     | "  | 20.6% |                |      |
| III. Environmental.....                |     |       |    |       | 53 " "         | 6.6% |
| 1. Entered late.....                   | 21  | "     | "  | 2.8%  |                |      |
| 2. Foreign language.....               | 1   | "     | "  | .1%   |                |      |
| 3. Schools too far from home           | 24  | "     | "  | 3.0%  |                |      |
| 4. Inadequate instruction...           | 7   | "     | "  | .9%   |                |      |
| IV. Economic.....                      |     |       |    |       | 51 " "         | 6.3% |
| 1. Poverty of parents.....             | 25  | "     | "  | 3.1%  |                |      |
| 2. Stayed out to work.....             | 3   | "     | "  | .4%   |                |      |
| 3. Works after school hours.           | 4   | "     | "  | .5%   |                |      |
| 4. Moved from school to school.....    | 18  | "     | "  | 2.2%  |                |      |
| 5. Service in Army.....                | 1   | "     | "  | .1%   |                |      |
| V. Delinquency.....                    |     |       |    |       | 71 " "         | 8.8% |
| 1. Truants.....                        | 22  | "     | "  | 2.7%  |                |      |
| 2. Liars.....                          | 14  | "     | "  | 1.7%  |                |      |
| 3. Criminal (persons or property)..... | 7   | "     | "  | .9%   |                |      |
| 4. Cruelty.....                        | 1   | "     | "  | .1%   |                |      |
| 5. Ungovernable.....                   | 7   | "     | "  | .9%   |                |      |
| 6. Sex perverts.....                   | 4   | "     | "  | .5%   |                |      |
| 7. Need discipline.....                | 7   | "     | "  | .9%   |                |      |
| 8. Lack home training.....             | 1   | "     | "  | .1%   |                |      |
| 9. General lack of ideals...           | 3   | "     | "  | .4%   |                |      |
| 10. Actual delinquent (court)          | 5   | "     | "  | .6%   |                |      |

Table 8. Causes stated by teachers as contributing to retardation

|  |          |    |        | (Con.)        |
|--|----------|----|--------|---------------|
| VI. Emotional Disturbances(affective deviation)..... 116 times |          |    |        | or 14.5%      |
| 1. Unstable.....   | 20 times | or | 2.5%   |               |
| 2. Periodic upsets.....  | 23       | "  | 2.9%   |               |
| 3. Over-valuations.....  | 16       | "  | 2.0%   |               |
| 4. Seclusive.....  | 37       | "  | 4.6%   |               |
| 5. Overly frank and open.....                                  | 15       | "  | 1.9%   |               |
| 6. Stubborn.....   | 1        | "  | .1%    |               |
| 7. Sullen.....   | 3        | "  | .4%    |               |
| 8. Blase'.....   | 1        | "  | .1%    |               |
| VII. Parental..... 87 "  |          |    |        | 10.8%         |
| 1. Poor heredity.....  | 39       | "  | 4.85%  | (10.8%)       |
| 2. Poor home influence and care.....                           | 39       | "  | 4.85%  |               |
| 3. Parents divorced.....                                       | 7        | "  | .9%    |               |
| 4. One or more parents dead..                                  | 1        | "  | .1%    |               |
| 5. Parents prohibit medical treatment.....                     | 1        | "  | .1%    |               |
| VIII. Miscellaneous..... 13 "                                  |          |    |        | 1.6%          |
| 1. Laziness, lack of applica-<br>tion.....                     | 12       | "  | 1.5%   |               |
| 2. Dislike of school.....                                      | 1        | "  | .1%    |               |
| IX. No cause given..... 6 "                                    |          |    |        | .7%           |
|  | 804      |    | 100.0% | 804 or 100.0% |

The remainder of this report will attempt an explanation of some of the most important causes to which can be attributed the present retarded condition of these 258 pupils.

#### 1. MENTAL DEFECT AND MENTAL DULLNESS.

Reference to Tables 7 and 8 shows mental defect and dullness to be one of the most important of all causes of retardation. The data in the next few Tables that follow are a comilation of the results of mental examinations given to 160 of the retarded children who were the subjects of this study. Table 9 shows the grade distribution of thes 160 children according to their mental ages. Quite a variance is seen between mental age



and chronological age, as is shown in Tables 10 and 11, there being a strong tendency for pupils chronologically over-age for grades to be mentally under-age for grade. In both Table 10 and 11 the chronological ages are those at the time of the mental examination, and are thus not the same in every case as at the time the child was reported to the survey as retarded. The underlined spaces in Table 9 show the mental ages for grade which children should have to be classed as normal. That is, the mental age of a normal child is the same as his chronological age. The data in these charts seem to bear out the statement made by Ruch ( 18 ), which in substance is that pupils retarded on the basis of chronological age are often accelerated on the basis of mental age. A good illustration of the statement is in Case No. 84. This child has a chronological age of 14 years, and is in the 5th grade for which grade the normal chronological and mental age is from 10 to 11 years. No. 84 has a mental age of 7 years, 3 months. In respect to chronological age this child is retarded 3 years, but in respect to mental age, which really determines school progress, he is accelerated almost 3 years.





Table 11. RELATION OF MENTAL RETARDATION TO  
PEDAGOGICAL RETARDATION.

| Years of<br>Ped. Retard. | Average<br>Chrono.<br>Age | Average<br>Mental<br>Age | Average<br>Mental<br>Retard. |
|--------------------------|---------------------------|--------------------------|------------------------------|
| 1                        | 10 yrs. 7 mos.            | 9 yrs. 10 mos.           | 9 mos.                       |
| 2                        | 12 yrs. 2 mos.            | 11 yrs. 4 mos.           | 10 mos.                      |
| 3                        | 13 yrs. 1.5 mos.          | 10 yrs. 2.5 mos.         | 2 yrs. 11 mos.               |
| 4 and over               | 15 yrs. 10.5 mos.         | 10 yrs. 7.5 mos.         | 5 yrs. 3 mos.                |

It is to be noted that as the number of years of retardation increases the difference between chronological and mental age becomes greater. This is but an illustration of the fact that mental defect and dullness is a retardation - a slackening, if not a complete stop- of the normal mental growth of the child. Groszmann ( 15 ) likens the mental development of children to the development by the race of various civilization or culture levels. This development has been gradual, some races making more rapid progress than others. So also has this been true of families and individuals. He says:\*

"We are dealing with different civilization levels," and that "each individual represents mental and moral attitudes characteristic of one or several of these levels." Further, he says, "every large community of this present time contains many elements of primitive constitution, of a retarded mental development which has been behind contemporary

\*Groszmann, M. P. E.: The Exceptional Child. Scribners, 1917. P. 35 ff.

progress ever since time began. Here we have a problem entirely different from that of deterioration. Instead of degeneration - which is a condition of falling from a high to a low state - a condition of low development confronts us, a development which has never reverted, but has ever risen - very, very slowly, it is true but nevertheless representing an upward, even though greatly retarded movement. A closer study of individual evolution convinces us with increasing force that primitive or retarded development, in the sense here described, is far oftener the cause of failure in life under present day conditions than has been suspected. And this retardation must not be confused with pathological retardation, or with feeble-mindedness."

Intelligence quotients for the 160 children examined were derived by dividing mental age by chronological age. The classification of degrees of mental ability in terms of intelligence quotients as suggested by Prof. L. M. Terman (19), of Leland Stanford Jr. University, has been used in this study. Table 12 gives his classification. Table 13 shows the intelligence of the children examined in this study while Table 14 shows the relation between intelligence and varying amounts of retardation. Graph 1 compares the distribution of intelligence quotients of 160 retarded children with those of 905 unselected children tested by Terman. This graph is an attempt to show the intel-



ligence of a group of retarded pupils as contrasted with a larger group of pupils of all mental levels, such as one would find in one whole school or school system.

Table 12. TERMAN'S CLASSIFICATION OF THE INTELLIGENCE QUOTIENTS.

| Quotient       | Classification   |
|----------------|--|
| Above 140..... | "Near" genius or genius.   |
| 120-140.....   | Very superior intelligence.  |
| 110-120.....   | Superior intelligence.   |
| 90-110.....    | Normal, or average intelligence.   |
| 80- 90.....    | Dullness, rarely classifiable as feeble-mindedness.                                    |
| 70- 80.....    | Borderline deficiency, sometimes classifiable as dullness, often as feeble-mindedness. |
| Below 70.....  | Definite feeble-mindedness.  |

Table 13. INTELLIGENCE CLASSIFICATION OF 160 OVER-AGE-FOR-GRADE CHILDREN.


| I.Q.           | Classification    | No.     | %       |
|----------------|-------------------|---------|---------|
| Above 140..... | Genius.....       | 0.....  | 0       |
| 120-140.....   | Very superior.... | 0.....  | 0       |
| 110-120.....   | Superior.....     | 9.....  | 5.625   |
| 90-110.....    | Normal.....       | 71..... | 44.375  |
| 80- 90.....    | Dull.....         | 41..... | 26.625  |
| 70- 80.....    | Borderline.....   | 22..... | 13.75   |
| Below 70.....  | Feeble minded.... | 17..... | 10.625  |
|                |                   | 160     | 100.000 |


Table 14. INTELLIGENCE OF 160 OVER-AGE-FOR-GRADE CHILDREN IN RELATION TO THE AMOUNT OF THEIR RETARDATION.

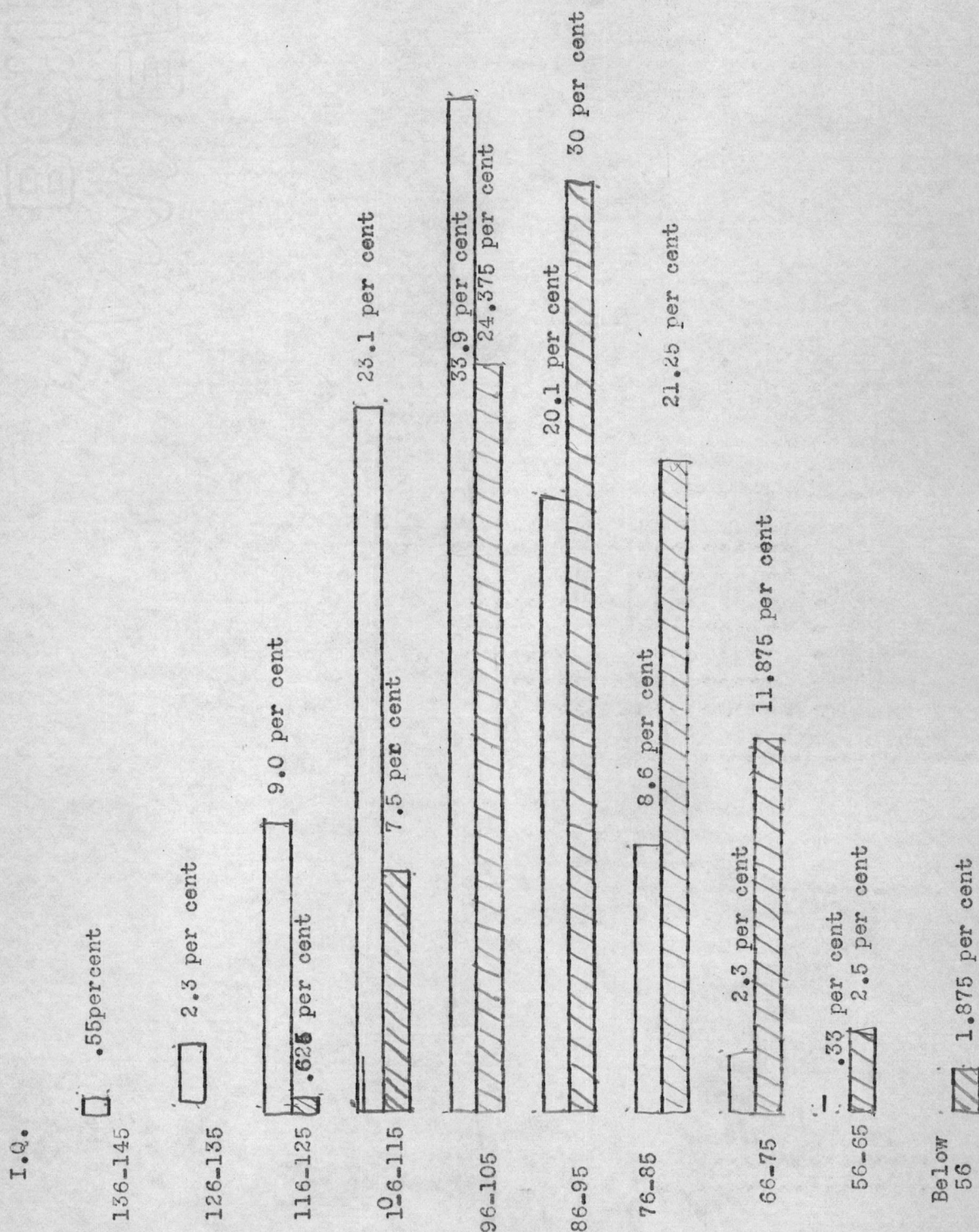
| Amount of retardation. | 1 year | 2 years | 3 years | 4 years<br>or more |
|------------------------|--------|---------|---------|--------------------|
| Intelligence Quotient. |        |         |         |                    |
| 110-120                | 8      | 1       | 0       | 0                  |
| 90-110                 | 36     | 29      | 5       | 1                  |
| 80-90                  | 18     | 15      | 7       | 1                  |
| 70-80                  | 5      | 10      | 4       | 3                  |
| Below 70               | 4      | 2       | 8       | 3                  |

Average Intelligence Quotient (160 cases).....88.375  
Median Intelligence Quotient (160 cases).....90.2

Graph 1. COMPARISON OF INTELLIGENCE QUOTIENTS OF  
RETARDED AND UNSELECTED CHILDREN.

 Intelligence Quotients of 905 unselected children tested by Terman (19).

 Intelligence Quotients of 160 retarded children in the public schools of Eugene, Oregon.





The preceding tables and graph have shown very plainly the part played by mental defect and dullness in retardation. The fact that 17% of retarded pupils have a mental age lower than that which is normal for their grade; the fact that these retarded pupils have an average mental age more than 2 years less than their average chronological age; the fact that over 10% of these retarded children are definitely feeble-minded, over 13% borderline cases and 25% fall into the dull group, all point to the enormous part mental defect and dullness play as causes of children becoming over-age-for-grade in school. Only about 50% of all the children retarded do not have some mental dullness or defect entering into the causes of their retardation. It must be remembered throughout that other causes contribute to the retardation of these children, but in certain cases mental inferiority of some degree predominates. One may say with absolute certainty that this is true in the case of the 10% feeble-minded and the 13% borderline deficiency. It may be mentioned in passing, that in regard to the whole number of cases submitted, the teachers stated that mental defect was a cause of retardation 41 times and mental dullness was a cause 53 times, as is shown in Table 8. These figures represent but the teachers' judgements and are not to be taken as accurate, since they are not the result of scientific examination. However, they may be taken as indicative of the great prominence of mental defect and dullness as a cause

contributing to school children becoming over-age-for-grade, and of the need of consideration of this factor in any attempted means of preventing retardation.

Mental defect and dullness, and consequent retardation in school progress is a sociological as well as an educational problem. This is easily recognized from the fact that there is a strong tendency for retarded pupils to drop out of school at the earliest possible date. This is especially true of those retarded because of some mental disability. In an experimental group of 653 unselected men in the army there was found by mental examination (Stanford Revision) that there is a close relationship between the intelligence of a man and the amount of his education and vice versa. The following table, derived from the report of the work of the Division of Psychology of the Medical Corps of the U. S. Army during the recent war,\* shows how the number of years a man remained in school was determined by his mental ability.

Table 15. RELATION OF INTELLIGENCE OF SOLDIERS  
AND THEIR AMOUNT OF SCHOOLING.

| Years of schooling. | Mental Age.     |
|---------------------|-----------------|
| 4.....              | 10 yrs. 5 mos.  |
| 5.....              | 11 yrs. 4½ mos. |
| 6.....              | 11 yrs. 7 mos.  |
| 7.....              | 13 yrs. 2 mos.  |
| 8.. ..              | 13 yrs. 8 mos.  |
| 9.....              | 14 yrs. 4 mos.  |
| 12.....             | 16 yrs. 2 mos.  |
| 16.....             | 17 yrs. 10 mos. |

\*Memoirs of National Academy of Sciences. Vol XV, 1921.  
Washington Gov't Printing Office.



The study of the family trees of feeble-minded persons leads one to the conclusion that feeble-mindedness is hereditary. It is ordinarily true that people do not recognize heredity in its full light as a cause of an individual's poor mental equipment, for the tendency is to consider some incident in the life of the subject, or of the subject's mother, as the cause. Goddard ( 11 ) listed the causes assigned by parents or physicians in 173 cases of feeble-mindedness. Forty-two causes were given, but upon examination he found the actual cause in every case to be heredity. In speaking of this he says:\*

"In these cases it is evident from the charts themselves that we are dealing with a condition of mind or brain which is transmitted as regularly and surely as color of the hair or eyes."

Lapage (16 ), of the University of Manchester, agrees with this when he classifies the causes of feeble-mindedness as primary (inherited causes affecting the parental germ plasm before conception of the child) and as secondary (acquired causes affecting the embryo of the child after birth.) In regard to the first of these he says:\*\*"A family trait of mental deficiency, insanity or epilepsy, constituting what is known as the Neuropathic Inheritance, is the underlying cause of primary feeble-mindedness (90 per cent of all cases)."

\*Goddard, H. H.: Feeble-mindedness. Its Causes and Consequence. MacMillan, 1914. P. 437.

\*\*Lapage, C. Paget: Feeble mindedness in Children of School Age. Longmans, Green, London 1920, P. 188.

Both Goddard and Davenport speak of feeble-mindedness as a recessive hereditary trait. By such a statement it is meant that the Mendelian law of inheritance applies to the mental capacity of humans as well as to their physical traits. When once a strain showing mental defect is mated with a strain of pure blood, there may be expected among the descendants a certain definite per cent of individuals showing mental defect, who will always produce mental defectives. Another definite per cent will be normal and will produce normals, while still a larger per cent than either of these two will appear normal but a certain proportion of whose children will be either defective themselves or carriers of the defect.

All that has been said about the heritability of feeble-mindedness applies equally well to all ranges of mental ability. A recessive trait implies the lack of certain determiners in the germ plasm. If that recessive trait be feeble-mindedness the implication is that feeble-mindedness results merely because of a lack of those determiners of intelligence in the germ plasm.

The only way the problem of mental defect can be adequately solved is by the gradual elimination from the human race of those of an inferior mental caste. Scientific stock breeding eliminates those strains which are characterized by undesirable qualities and through years of such breeding in many localities the inferior strains have either been over-balanced by more desirable



strains or else have been allowed to pass out of existence. In the human race, the problem is infinitely more complex and difficult, for it would be, to say the least, undesirable to direct the propagation of the human race as one would a breed of cattle. However, prohibition of the mating of all those who are not mentally and physically fit should result in the elimination of those families marked by constitutional inferiority of either a psychopathic or physical nature. With a view to race betterment, movements are on foot in many states to make more stringent the laws regulating marriage. The segregation and possibly sterilization of all cases of actual mental defect is suggested by such authorities as Abbot ( 1 ), Fernald ( 9 ), and Goddard (11 ). Such severe measures are only necessary for the elimination of strains characterized by actual mental defect, and would be entirely out of place for all others. However, the race could surely be greatly benefitted were it possible to prevent propagation of the mentally unfit for even one generation. As regards those who are inferior in some respects, but who are not defective, the mating of the strong with the weak will assist in eliminating undesirable qualities, providing this is kept up for generation after generation. The new blood which is brought into the family should always have the dominant or positive trait which is desired in order that the recessive trait may gradually be replaced by a better one. All this can only be brought

about by a general education of the people to a knowledge of the facts of heredity and to the general principles of eugenics.

## 2. PHYSICAL DEFECT AND DISEASE.

The influence of physical defect and disease as factors causing retardation cannot be overlooked. As a fundamental cause, these rank high, Table 7 showing that in 78, or 30% of all the cases reported, physical causes were predominant. In addition, Table 8 shows that physical causes were mentioned as contributing to retardation 288 times. This number is 35.9% of all the contributory causes mentioned. Table 16 names the diseases with which these children had been afflicted. It was impossible to learn how many times a child had had some of these diseases, but it is probable that in some cases children had suffered many times from the same malady. One is impressed at once with the fact that the diseases most frequently mentioned are all preventable. That children have suffered in such great numbers from measles, whooping cough, influenza, chicken pox, mumps, tonsillitis and scarlet fever all bespeak inadequate protection against such unnecessary diseases. Strictly enforced quarantine and intelligent treatment of these diseases would largely prevent their spread. The so frequent occurrence of small pox is a blot upon the intelligence of the people of an enlightened western



world. It is said that in certain countries of the Orient which have not adopted modern preventive medical practice the only individuals who survive to manhood or womanhood are those who have been able to weather the ever present epidemic of small pox. In most sections of the United States, the disease has been practically wiped out by compulsory vaccination. In Oregon, however, the disease due to wholly inadequate vaccination laws has a free field and the result is shown in that 10.5% of a group of 180 school children have at some time had the disease.

The cost of these diseases cannot be estimated with any degree of accuracy. Each case of illness has resulted in some absence from school, varying from a few days to a month or more. Some children have lost more than others, for some have had but one or two of the diseases mentioned while others have had as many as eight. If we consider that in each case of disease the amount of time lost from school is equal to the period of quarantine required, or to the average duration of the disease, in the case of those which are not quarantined, the first eight diseases, which represent the bulk of cases, would have resulted in an absence of 5469 school days. But these absences are not the only ones. Other children in the family must also be quarantined in many cases, and their absence from school is often almost as long as though they themselves had been ill. In the case of small pox and some other diseases, there must be

excluded from the school sometimes many children (as many as a whole grade or more) who have been exposed, until preventive measures are taken. There is no method of estimating the amount of absence from school because of disease in the families of those pupils who have not themselves been ill. When we attempt to determine the cost of absence of children from school because of diseases, we find a task just as much impossible as correctly estimating the cost of retardation in dollars and cents to a school district. That there is a great loss we cannot deny. Teachers could do much more effective work were all their pupils present every day. Repetition of instruction for the benefit of children who had been absent would not occur nearly as frequently as it does now. The general tone and atmosphere of the school-room, the attitude of the children, would be much more conducive to the best school work could all be present regularly. However, the greatest cost of diseases among school children is not to the taxpayer nor to the teacher but to the children who have been afflicted with the diseases from which they should have been protected. This cost to them can never be estimated nor can it ever be repaid. A loss of dollars and cents to the city can be recovered, but the loss in time in a child's life, never. Furthermore, to a child it is more than a loss of so many days of instruction. Permanent physical weakness laying the foundation for other more serious diseases sometimes results. Any very lengthy absence



from school in most cases means retardation, and this inevitably means discouragement which may go with a child through life, hampering his progress in all things, lowering his productiveness to society and limiting his enjoyment and satisfaction in living.

Table 16. DISEASES MENTIONED FROM WHICH CHILDREN HAD SUFFERED.

(This table relates to 180 children, since no record was available for 78 cases.)  
Table shows approximated time lost from school because of most frequent diseases.

| Disease                 | Times mentioned |    | %     | Quarantine                   | Total Quarantine |
|-------------------------|-----------------|----|-------|------------------------------|------------------|
|                         |                 |    |       |                              | time             |
| Measles                 | 117 times       | or | 22.1% | 10 days                      | 1170 days        |
| Whooping Cough          | 96              | "  | 18.1% | 21 "                         | 2116 "           |
| Influenza               | 93              | "  | 17.6% | 14 "                         | 1302 "           |
| Chicken Pox             | 75              | "  | 14.1% | 14 "                         | 1050 "           |
| Mumps                   | 55              | "  | 10.4% | 14 "                         | 770 "            |
| Tonsillitis             | 20              | "  | 3.8%  | 14 "                         | 280 "            |
| Scarlet Fever           | 19              | "  | 3.6%  | 30 "                         | 570 "            |
| Small Pox               | 19              | "  | 3.6%  | 21 "                         | 399 "            |
| Headaches               | 6               | "  | 1.1%  | Total 7657 days              |                  |
| Goitre                  | 5               | "  | .9%   | One school week              |                  |
| Typhoid Fever           | 4               | "  | .7%   | is 5/7 of one calendar week. |                  |
| Catarrh                 | 3               | "  | .6%   | Total school                 |                  |
| Diphtheria              | 3               | "  | .6%   | days absence-5469            |                  |
| Earache                 | 2               | "  | .4%   |                              |                  |
| Diseased Mouth and Gums | 2               | "  | .4%   |                              |                  |
| Rickets                 | 2               | "  | .4%   |                              |                  |
| Heart Trouble           | 1               | "  | .2%   |                              |                  |
| Itch                    | 1               | "  | .2%   |                              |                  |
| Kidney Trouble          | 1               | "  | .2%   |                              |                  |
| Malaria                 | 1               | "  | .2%   |                              |                  |
| Infantile Paralysis     | 1               | "  | .2%   |                              |                  |
| Scarletina              | 1               | "  | .2%   |                              |                  |
| Diseased Throat         | 1               | "  | .2%   |                              |                  |
| St. Vitus Dance         | 1               | "  | .2%   |                              |                  |
| Total 529 times         |                 |    |       | or 100.0%                    |                  |

The figures and explanations point to certain very definite needs in Oregon, that the health of our school children and the populace at large might be protected from

disease. Teachers of all grades need to be trained in the recognition of diseases and physical defects common to children. They should also know something about treatment so as to be able to correctly advise parents when necessary or take the matter of treatment into their own hands when emergency demands. There is a great need for a system of thorough medical examination of all school children at regular intervals of time. This should be accompanied by a system of school nursing in which the nurse not only examines children who show signs of defect or disease, but also visits the home and directs mothers in the care of their children. Many cases of malnutrition which are not evident under our present system of examination or no examination would be discovered and proper foods could be prescribed by the nurse. It is believed that fully as many cases of malnutrition result from unintelligent feeding as from inability of parents to provide food. Surely the work of the school and the visiting nurses could do much to alleviate this condition. More adequate quarantine and vaccination laws, especially as relating to small pox are badly needed. Better trained teachers and an organized plan of school nursing would result in a more conscientious enforcement of existing laws. And further, it may be said that there is a need for more intelligent medical treatment of disease. The spread of unscientific, so-called "healers" and "doctors" and their work, and the confidence that people put in



these inadequately trained men and women does little toward the prevention or the effective treatment of school diseases. It is believed that the adoption of these suggestions would help to eliminate retardation in the public schools and would cause not only better health of school children but of the general population.

### 3. AFFECTIVE DEVIATION.

There can be but little doubt that the personality of a child has much to do with his success or failure in school, although no very definite data on the subject have been compiled. The child who is enthusiastic, industrious and persistent in his efforts usually succeeds in fair proportion to his mental equipment. But the child who is unreliable in his disposition, or the stability of whose conduct under varying conditions cannot be forecasted is seldom crowned with success either in school or in life. Woodrow ( 21 ) in a recent book states that in a child's intelligence and character, referring to this element of personality or disposition,\* "We find ourselves facing unquestionably the main causes of failure in school, insofar as these causes lie within the child." Children who are unstable in their emotional reactions to life; who deviate from the normal in their affective tone (using the term in its psychological sense), we usually classify as "queer" or "odd," or as "cranks". In order to have a term which we can apply to such children to distinguish them from others we might

\*Woodrow, Herbert: Brightness and Dullness in Children. P. 136-7.

well speak of their peculiarity as an "affective deviation," as has been suggested by other students of the problem.

The tendency has usually been to consider that neither affective deviates nor the conditions provoking their deviations could be understood. However in this study some attempt has been made to gather data on cases of affective deviations in conduct with the hope of shedding some little light on this perplexing problem. In 85 cases or 33% of all cases of retardation reported some affective deviation was shown. Table 17 lists the general types of deviations in the order of their frequency of mention. Since deviation of some sort is listed 122 times it is seen that there are many cases characterized by more than one peculiarity of conduct, these cases showing a more greatly marked deviation from normality of emotional tone.

Table 17. TYPES OF AFFECTIVE DEVIATIONS  
REPORTED BY TEACHERS.  
(85 CASES)

| Type of Instability                       | No. Times Mentioned. |
|---|----------------------|
| Shut-in or seclusive.....                 | 37                   |
| Periodic Upsets (variation of moods)..... | 23                   |
| Unstable (Tantrums).....                  | 20                   |
| Overvaluation of Ideas (enthusiasms)..... | 16                   |
| Frank, open type (excessive).....         | 16                   |
| Other types.....                          | 10                   |
| Total times mentioned.....                | 122                  |

Affective deviation reduced to its simplest analysis is nothing more than an inadequacy of adjustment to environment. All human conduct is under the



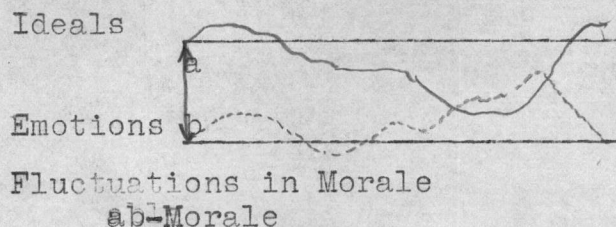
control of two factors: the intellectual or ideational, and the emotional or interpretive. Neither one can function normally without the other, and the most efficient conduct comes as a result of a correlation of both, each normally developed in relation to the other.

Dr. Guy Fernald ( 18 ) at a meeting of the Boston Society of Psychiatry and Neurology in 1918, spoke of character as\* "the emotivating, feeling, sentimental, instinctive, sustaining, energizing, executing or vetoing function of mentality." "Character," he said, "is the valid determinant of personality behavior, since what is done is more potent than what is planned. A mentality able to plan well but in which execution fails or is faulty, is inefficient or malefficient and may be regarded as showing character deviation or anomaly." He insists that mental functioning in character deviations may be treated as on a parity with both that in intelligence deficiency and that in mental diseases as fields of mentality investigation, since each in its own province contributes to defeat and accelerates the tendency to dependency, though not necessarily equally.

At a recent meeting of the American Medical Psychological Association, Dr. Donald Gregg spoke of the relation of the intellect and the emotions in

\*Fernald, Guy C.: Character as an Integral Mentality Function. Mental Hygiene. Vol II. P. 448, July, 1918.

shaping conduct. To illustrate his point he exhibited a diagram which is here reproduced.



In explanation of it he said,\* "The distance between these two lines we may think of as 'morale' and when the intellectual ideals diminish or the emotional activity increases morale becomes less, just as the separation between these lines is lessened in the chart. When the two lines converge an individual, like an army, with its morale gone is exposed to defeat. In an individual such a defeat means that the emotional activities have become dominant and are directing the individual's action, whereas normally the intellect should be the steering wheel and the emotions should serve as motive power." Throughout the consideration of affective deviation, it must be remembered that the difficulty is not one of ideation, but of emotion, and that could a normal balance between the two be preserved (could the lines in the diagram be kept nearly parallel), there would be no such thing as emotional instability or affective deviation.

The old ideas regarding education have been that the function of the school was to give the child

\*Gregg, Donald: Plots in Psychiatry. American Journal of Insanity. Vol 77. p 517. April 1921.



facts, ideas, information. That the child needed meanings to be given these ideas was entirely overlooked. The necessity for such interpretation is now recognized for without satisfactory emotional reactions to ideas and things an individual's conduct cannot be such as to make him an efficient citizen in the fullest sense of the word. In other words, a child without well developed and harmoniously balanced ideas and emotional reactions toward them cannot well adapt himself to life as he finds it. He does not have behind his ideas of right and wrong a driving force such as that common to normal people, with the result that without development of these he may withdraw from life and live in a world of fantasy all his own. He may become a "crank" holding tenaciously to some pet idea. He is usually impractical, because of his lack of touch with realities. He may become moody and be despondent without apparent cause. Or, on the other hand, he may develop the opposite trait of being overly enthusiastic and failing to have the persistence necessary for any great accomplishment. Every such mode of conduct is an example of inadequate adaptation to the realities of life.

It is but natural that a question should arise about the relation of intelligence and effective deviation to one another. As is shown by Table 18, affective deviates are found in practically every intelligence group represented by the retarded pupils. It is true

that among mental defectives one finds a greater peculiarity of conduct than among normals and thus we should expect more affective deviates among such. However, there is no corollary that affective deviates are all mental defectives. Their ailment is not ideational, but emotional. Their difficulty is not in being unable to think but to think rationally.

Table 18.           MENTALITY OF THOSE SHOWING  
                    AFFECTIVE DEVIATION

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|  |          |               |
|--|----------|---------------|
| Below 70 (I.Q.).....   | 10       | or 16.66-     |
| 70 to 79 .....   | 10       | or 16.66-     |
| 80 to 89 .....   | 16       | or 26.66-     |
| 90 to 99 .....   | 8        | or 13.33-     |
| 100 to 109.....  | 13       | or 21.66-     |
| 110 to 119.....  | 3        | or 5.00       |
|  | <hr/> 60 | <hr/> 100.00% |
| No I.Q. available.....   | 18       |               |
| No I.Q. available but teachers<br>state child to be subnormal. | 7        |               |
| Total.....   | 85       |               |
| Average I.Q. of 60 affective deviates retarded...              | 85.6     |               |
| " I.Q. of 160 unselected retarded children.                    | 88.375   |               |
| Median I.Q. of 60 affective deviates retarded...               | 90.2     |               |
| " I.Q. of 160 unselected retarded children.                    | 84.5     |               |

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Retardation caused by affective deviation is but a symptom of the real trouble. In the case of a child whose school progress is thus hindered, retardation may easily be the beginning of a life of failure. Experience with such people has shown that they are all potential liabilities to society. They compose the class from which are recruited many of our delinquents and moral offenders. Because of their lack of proper emotion-



al control, they do not behave in such a manner as to be either successful or law abiding citizens. Having an improperly balanced sense of right and wrong they break both statutes and moral laws without realizing that they are trespassing against society. In this day of industrial discontent it is especially important that there be some understanding of the affective deviate. It is he, who, because of his maladjustment to life as it is, becomes the mal-content, the agitator, the radical. This was very well brought out by a recent study by Jau Don Ball(3), in Oakland, California, which he reported in the American Journal of Insanity. A medico-psychological examination had been made of the employees of a certain firm with a view to discovering which if any of the employees might at any time be abnormal in their social conduct. A few months later a strike occurred. Concerning the strikers Dr. Ball writes,\* "According to the records every one of the strikers had something wrong with them from a nervous or mental standpoint (nearly all of them having a psychopathic history); it was noted that with three exceptions the 'strikers' cited as agitators were among those grading the highest on the intelligence scale used." Dr. Ball goes on to explain, however, that

\*Ball, Jau Don, M. D.: The Correlation of Neurology, Psychiatry, Psychology and General Medicine as Scientific Aids to Industrial Efficiency. American Journal of Insanity. 75:521, April, 1919.

"it could not be concluded from this or any other examination that all strikers, whether agitators or not, are psychopaths." It is sufficient to quote here that men whom he classifies as queer guys, eccentrics, disturbers, querulous persons, unreliable and unstable fellows, misfits, the irritable, the sullen, the socially disgruntled, unsociable, negative, conscientious, litigious, bear-a-grudge, peculiar, glad-hand, gossipy, roving, restless, malicious, lying, swindling, sex-pervert, false-accuser, abnormal-suggestibility, and mental twist types are men whose conduct cannot be forecasted. These are affective deviate types.

The relation between affective deviation and delinquency is often easily seen in the school room, since the failure to adapt often begins during school age. Affective deviates among children are almost constant offenders. It was found that in the city of Eugene, of all the children who were offenders of some sort, 41 or 73% were affective deviates. Table 19 shows the distribution of their offenses and their relation to emotional lack of control. It will be found by any study of groups of adult delinquents that in childhood they committed the same type of offenses of which these children are guilty.



Table 19. RELATION OF AFFECTIVE DEVIATION AND DELINQUENCY.

| Type of Delinquency                              | Number of times mentioned |       |       |              |       |       |
|--|---------------------------|-------|-------|--------------|-------|-------|
|  | Affective Deviates        |       |       | Not deviates |       |       |
|  | Boys                      | Girls | Total | Boys         | Girls | Total |
| Truancy  | 15                        | 1     | 16    | 4            | 0     | 4     |
| Lying  | 5                         | 4     | 9     | 5            | 1     | 6     |
| Cruelty to Animals                               | 1                         | 0     | 1     | 0            | 0     | 0     |
| Crime against Persons or Property                | 5                         | 1     | 6     | 1            | 0     | 1     |
| Sex Perversion                                   | 2                         | 0     | 2     | 2            | 0     | 2     |
| Ungovernable                                     | 5                         | 2     | 7     | 2            | 0     | 2     |
| Totals   |                           |       | 41    |              |       | 15    |
| Total number delinquents. . . . .56              |                           |       |       |              |       |       |
| Per cent who are affective deviates . . . . .73% |                           |       |       |              |       |       |

Studies made by the Eugenics Record Office show affective deviation to be a distinctly heritable trait. The Dack family described by Mrs. Finlayson (10), is a very good example of an hereditary lack of emotional control. The basis of the inheritance seems to be in an organ weakness, possibly connected with nervous development. Not much can be said as yet about the causes, although some hints may be given as to their prevention and cure. Dr. Fernald ( 8 ), insists that these cases are "salvable to economic productivity before character formation is complete." Teachers should give the best of attention to these children, trying to understand their peculiar natures if possible. Sympathy and an interest on the part of the teacher will often establish a bond which will place the child under her influence, while she, if she has wisdom and ability, can adapt classroom work and playground influences that

the child may profit most advantageously by school experiences. The conditions under which emotional instability is most prone to develop are those of disease or physical defect, improper environment or faulty educational methods. The school nurse, by a thorough examination of both the child's body and his home, can often discover aggravating causes. Improvement of health by medical treatment, where necessary, and by better habits of living, will often assist in giving a child a more normal outlook on life and reaction to it. Home influences may be changed in accordance with the manner in which the deviation has expressed itself. Nothing can better operate toward the establishing of normality of disposition in a child than good healthy, childish play with normal children, a happy home in which intelligent attention is given to the child's physical needs and in which a sane moral and social atmosphere prevails devoid of all the prudery and intolerance which so often is the cause of unhygienic mental development of a child, and school training by intelligent, sympathetic and adequately trained teachers who can present to him the realities of life in such a way as to cause him to recognize them as such. All of this will assist him in taking his place in a world of men and things with an outlook upon all life intellectually and socially normal.



#### 4. MISCELLANEOUS CAUSES.

Other causes could be mentioned as being influential in the retardation of these 258 children, as might be seen by reference to Tables 7 and 8. However, it will be seen upon analysis of ~~the~~ other causes mentioned in these tables that they have been treated under the three causes already discussed. With the exception of a few cases, the causes of retardation can be traced in the final analysis to mental defect and dullness, physical defect and disease or to an affective deviation of some sort. The case may be brought up of the 25 children whose parents are poor or poverty stricken and of the 18 children who have moved from school to school too much to permit of steady instruction (many of these latter children belong also to poor families), but let it be said that upon examination of the reasons why parents fail to succeed in life to the extent of being able to adequately support their children, it will be found that they (the parents) are usually handicapped in life by some one or more of these fundamental disabilities. In the case of those who have moved from place to place, never settling at one place for any great length of time and never holding a permanent position, investigation will show that they have neither ability nor persistence to make their services desirable to any employer for more than a very short time. They have not inherited either the mental

ability or moral stamina which are essential to successful living. Their children, while perhaps not showing actual mental defect, show either mental dulling, affective deviation or some organ weakness or proneness to disease. They become retarded and like their parents go through life failures, or at best as people of no marked ability or success. People may say that their trouble is environmental, but man determines, with few exceptions, the elements that make up his environment. If he does not make for himself an environment conducive to success, it is usually because of an inability to do so, barring of course certain unpreventable misfortunes, and these by the aid of science and increasing popular knowledge are becoming fewer day by day. Progress in education of the people and in the discovery and practice of scientific truths are proving the validity of the statement that is made of man, that he is master of his fate.

Certain causes which are not due to any one of these three widely inclusive ones deserve mention. A few children at one time lived in the mountain areas or where schools were too far distant, or where there was no school available. Others attended schools in which the teachers were not able to give proper instruction. One boy was absent from school for military service. A girl of foreign birth had difficulties due to inability to understand the English language. In the case of six children no cause could be discovered for their



retardation. The fact that there are so few cases that can be mentioned here as miscellaneous leads to the conclusion given in the preceding paragraph that there are certain final causes to which all other can be reduced.

### CONCLUSIONS

In concluding this study, certain general statements can be made regarding measures which might to some extent act toward the prevention of retardation and incidentally shed light upon means of assisting retarded children to a recovery when such is possible. Suggestions for both treatment and prevention may be of two general classes. One aims to strike at the fundamental and ultimate causes. The other seeks to remove the more evident contributing or precipitating causes. In the consideration which has been given some of the causes, certain means of treatment and prevention have already been suggested to which others might be added. The schools can do much toward solving the problem of retardation. They can and should attempt to adapt their courses of study to suit the needs and abilities of children of all ages and of all social and mental levels. Each child should be considered as an individual personality and not merely as a pupil or an insignificant unit in the school organization. Teachers, to do their part in solving the problem, need to have some understanding of the personality makeup of each pupil, of his emotional life,

his physical condition, something of his heredity, his environment at home and at play, and as well his inner reactions toward the activities of the class room. C. Macfie Campbell (5) insists, and rightly too, that "in every training school for teachers there should be a thorough course in child psychology, a psychology willing to deal with the real problems of the child, and that faces the realities of life in a frank and unembarrassed manner." And he insists further that, "No such course would be complete without some personal contact with children who have presented the typical difficulties of adjustment, and whose cases have been thoroughly analyzed." Without doubt this training alone would do much toward reducing the present rate of retardation.

Furthermore, the schools may be many other means work towards a solution of the problem. They may give special instruction to mental defectives which is suited to their limited abilities. They may establish free clinics in which physical defects of pupils are given expert medical attention. They may conscientiously enforce all existing quarantine laws and by the work of a school nurse may supervise treatment given all children suffering from disease. They may obey all the rules of sanitation and health in construction of school

\*Campbell, C. Macfie: Education and Mental Hygiene. Mental Hygiene, Vol 3, p 398. 1919.



buildings and in carrying out the school program. They may do everything suggested by the scientific study of both child welfare and school instructional problems. The result will be that the rate of retardation will be reduced, not only because of an elimination of some of the ultimate causes, but because the conditions favoring its development have been removed. However, when one aims at the ultimate elimination of the over-age-for-grade pupil, he steps from the field of social and physical welfare and that of school instruction into the field of race betterment. When this is done the problem ceases to become one for the school administrator and instructor alone. It becomes a problem in the solution of which there must be consulted the physician, the psychologist, the student of heredity, the sociologist, the economist and the law maker. Any great accomplishment in the matter of race betterment demands that the people be educated in regard to mental hygiene and inheritance. In addition they must realize the enormous economic and social loss resulting from the presence in the world of individuals who by their distinct mental incapacity are unfitted for either success or happiness in life. When the general populace becomes sufficiently informed on these matters, and a sentiment arises demanding that the mentally deficient shall not produce others of their kind, laws will be placed upon the statute books providing for

either sterilization or segregation of such mentally and socially inferior types. It will be then that some of the basic causes of school failure will be annihilated. This condition of affairs is an end to be worked for. It cannot be realized at once, and possibly not in the present generation. In the meantime, there should not be neglected any of the other methods of raising the level of work done by over-age children. The cost which these children have already occasioned is sufficient to prove the need of reducing by any possible means the number of school failures. The advances being made toward the solution of the problem are favorable, and one cannot help but forecast that the seriousness of the situation will become less and less each year. With the increasing popular interest in the problem and the efforts being launched from all angles toward a solution, it is to be expected that in the end retardation of school children will at least be very materially reduced.

#### SUMMARY.

The following summary gives the gist of this intensive study into the cost and causes of retardation as found in 258 over-age-for-grade pupils in the elementary schools of the city of Eugene, Oregon.

1. The causes for their retardation are to be sought principally in Oregon. 51% of all cases were born in this state. 66% of the school life of all the others was spent here.



2. Over 75% of cases came from the homes of unskilled laborers, farmers and skilled laborers. In very few cases was any poverty of parents reported.

3. Average retardation per pupil is 1.89 years. Total retardation of the group is 188 years.

4. While the actual cost of retardation cannot be computed, there is no doubt but that it is large. However, the greatest cost is to the children themselves in that they are not developed to their highest possible degree and are thus doomed to a less comfortable position in life, and to society in general, in that these people are not as socially productive as they could have been otherwise.

5. In analyzing the causes, an attempt was made in every case to distinguish between fundamental causes and those which merely contributed toward or precipitated retardation.

6. In the evaluation of individual cases the predominating causes were found to be: Mental defect and dullness, 32.1%; disease and physical defect, 30.2%; poor heredity and improper environment, 23.2%; economic and other causes 14.5%; total 100%.

7. From mental examinations given to 160 retarded children, the following data are given:

a. Average mental age was found to be two years and five months lower than average chronological age.

- b. Average intelligence quotient was 88.375
- c. Approximately 11% were feeble-minded. 14% were borderline cases. 25% were dull. 44% were normal. 6% were superior.
- d. Those with low I.Q. tended to be further retarded than those who were normal or just dull.

8. Mental defect is stated by Davenport (7) to be a recessive hereditary trait. No means will be effective in removing it as a cause of retardation, except one that prevents the birth of offspring of the feeble-minded.

9. Physical defect and disease were mentioned as a cause contributing to retardation 288 times, which is 35.9% of all the contributing causes mentioned.

10. Almost every case of disease mentioned can be made preventable by proper quarantine and other preventive measures accompanied by scientific medical treatment.

11. Evidence was given of a great need for an adequate system of physical examination and school nursing, and more effective quarantine and vaccination laws, especially as relate to small pax.

12. In 85 or 33% of all cases reported, emotional instability (affective deviation) was mentioned as a cause. The most frequently mentioned types were: seclusiveness, 37 times; periodic upsets, 23 times;



unstable (tantrums), 20 times; over-valuation of ideas, 16 times; frank, openness (excessive), 16 times; other types, 10 times. Affective deviation of some type was mentioned 122 times.

13. Affective deviation is inability to adjust to environment, due to an unnatural interpretation of the realities of life. It is reported as an hereditary trait and develops under faulty environmental conditions, improper school methods, or poor physical conditions.

14. Affective deviates were found to be of all mental levels represented among the retarded. Affective deviation is not caused primarily by mental defect, although mental defectives sometimes show similar peculiarities of conduct.

15. Affective deviates are particularly prone to break both moral and statute laws since they do not have the normal driving force of character behind their ideas of right and wrong. The result is that they largely compose the class who become criminals or moral offenders. Of retarded children who were school offenders (truants, liars, etc.), 73% were reported as showing some type of affective deviation.

16. Upon complete analysis, almost all causes can be classed under one of the three causes treated under summary headings 7 to 15 inclusive. But few miscellaneous causes remain.

17. The rate of retardation may be materially

reduced by adapting school work to the abilities of all pupils, and by free medical clinics, quarantine of infectious and contagious diseases, obeying rules of health and sanitation in schools and by various other means of child care through the schools.

18. Any permanent elimination of retardation must come by a demand from the people to the effect that the constitutionally unfit shall not increase their burden to the world by the further reproduction of their kind.



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