SCHOOL ADJUSTMENT AND READING

DISABILITIES IN ELEMENTARY SCHOOL CHILDREN

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The responsibility of the elementary school in the teaching of reading is much greater than the lay person realizes. The teaching of reading should develop not only reading ability, but also reading habits and reading appreciation, which will enable the child to take advantage of the heritage in literature to which he is heir. There is also the utilitarian advantage in being able to read well. In order to keep up with world happenings, it is necessary to be able to read newspapers, periodicals and magazines.

Faulty reading habits or disabilities in reading may be a definite obstacle to future development and to the student who continues through high school and college. His acquisition of knowledge and his literary tastes are greatly impeded when there is a reading disability present.

If reading disabilities were fully understood and dealt with by the teachers of elementary grades, perhaps the pupil could remedy his defect early enough to avoid failures, lack of interest in books, and a lack of understanding and appreciation of the things that he reads. Early recognition of reading deficiencies, whether caused by visual defects,
by emotional upset, or other reasons may make it possible to remedy the situation and save the child from inevitable failures later in school and from conflicts arising from the feeling of inferiority because he is not able to compete with his classmates.

The purpose of this study is to see what relation there is between school adjustment and reading difficulties. This matter has come up time and again in cases handled by private social agencies and in cases which are ultimately referred to psychiatric clinics. The Children's Memorial Clinic of Richmond has been doing work during the winter of 1933-'34 on remedial training in cases of reading disability, but it has not as yet done any organized research on this problem. Considering the increasing interest in the study of reading disabilities and the relationship between reading disabilities and social adjustment in social agencies and psychiatric clinics, a study of this nature is significant.

In planning treatment for cases of this nature, it is necessary to know whether or not there is a tendency toward social and school maladjustment. Of course, each individual case must be considered as the problem arises, but if the general tendency of such cases is toward emotional maladjustment or lack of social adjustment, the set-up for training will be different from the organization for training if the tendency is toward visual defects and poor teaching as causes for the reading difficulties.
A general knowledge of tendencies enables the social agencies (family and children's agencies) to ascertain what treatment should be followed. The psychiatric clinics are used for referral at present. It would save time to know what kinds of treatment should be planned in such clinics. There is a tendency at present in some psychiatric clinics such as in Richmond to have classes in remedial training for those pupils whose main difficulty lies in poor teaching or visual defects. Of course, these same clinics also offer psychiatric treatment for those children who seem to be socially and emotionally maladjusted.

A few cities have established reading clinics in connection with the public school department. Miss Helen S. S. Wilkinson, professor of elementary education at the Boston Teacher's College and director of what is probably the best Reader's Clinic in the public school systems of America, has done a great deal of work in reading difficulties and left-handedness. The following account of her work was published in February 1934 in the Richmond Times Dispatch:
"The Dominant Side"

AMONG the causes of retarded reading is what is described as 'a lack of lateral dominance.' In the great majority of children, and adults also, one eye is the dominant eye.

"When the child looks at an object he gets his principal look at it with one eye. The other eye also views the same object, but serves as a sort of reinforcement to the dominant eye.

"Normally, where the right eye is the dominant eye the right hand is also the dominant hand. And when the left eye is the dominant eye then the child usually is left-handed. Thus this lateral dominance (that is, the dominance of one side over the other) is distinct, unmixed.

"But, in some cases in which a naturally left-handed and left-eyed child has been practically forced by his parents to become right-handed, the left eye still remains the dominant eye. Hence the natural lateral dominance of such a child is thrown out of normal balance.

"This lack of lateral dominance may, when reading is attempted, result in the child having 'mirror' or right-to-left tendencies -- which might come in handy if he were reading Chinese or Japanese characters, but not with English. A child with the right-to-left complex is likely to look at the word W-O-W and call it W-O-N. He finds it extremely difficult to follow along the printed lines.

"So there you have one of the possible results of forcing your child, in early formative years to use his right hand when he may be naturally left-handed. It is one of the reasons why teachers in the Boston public schools are prohibited from trying to force left-handed children to use their right hands."
"Testing New Pupils"

"ONE of the first tests made when a new pupil comes to the Readers' Clinic for help is designed to discover where he is naturally left-eyed or left-handed.

"'Some parents' Miss Wilkinson says, 'have an idea that to tell that their child is naturally left-handed is to suggest that he isn't normal; so they cover up the fact.'

"But tests quickly show the truth. There is the Myles Cone test, for instance. At a word from the instructor the child covers his eyes with the open base of a cone of stiff paper, the point of which has been snipped off, leaving a very small hole.

"The child sights through the hole to identify an object held by the teacher across the room -- the hole being so small and at such a distance from the eyes that both eyes cannot be focused through it upon the subject. So one eye only can be used.

"The pupil uses the naturally dominant eye, which can instantly be detected by the angle at which the cone is held. There are other tests of a similar nature.

"There are equally simple and effective tests for left or right handedness. The child is asked to transfer a set of pegs from holes in one board to holes in another, with one hand -- and is carefully timed. Then the same thing with the other hand, this operation also being timed. Then the child is called upon to do the same thing, but accelerate speed -- a sort of race. One hand racing against the other.

"Return to Left Side.

"In some cases children found to lack lateral dominance have been relieved of their difficulties in reading by being induced to go back to using their left hand."
"Other causes for deficiency in reading are:

- Attempting to teach reading to children too young or otherwise immature.
- Physical handicaps.
- Unbalanced personality.
- Emotional interferences.

"The trouble with trying to get some young children to read is that they simply don't know what it is all about. They lack vocabularies, and personal experiences and contacts upon which vocabularies are built.

"Here is Miss Wilkinson's advice to mothers:

'Postpone entrance to the first grade until the children have learned to live with other children and until they are sufficiently mature to tie oral symbols to their experiences.'

"She points out that scientific tests show that fewer children with kindergarten experience are handicapped in reading than are those who come to the first grade right from the home."

With the growing interest in this problem of reading difficulties, it is necessary to know what general organization should be used in dealing with the cases. If the problem is to be handled by the psychiatric clinics, the social worker should know whether to refer the child
for remedial training or for full psychiatric study. If the public schools establish clinics for treating these cases, provision must be made for both types of training. The other alternative is one of division of labor. The remedial training might be handled by the school clinics and the psychiatric training by the psychiatric clinics. In either case, the social worker needs to know something of general tendencies of such cases so that she may deal with them adequately in the referral.
CHAPTER I

Development of the Study of Reading Difficulties

Thirty years ago it was generally believed that every normal child could be taught to read. When it was discovered that some normal children could not be taught easily to read, they were often referred to oculists and ophthalmologists on the grounds that there were some sensory defects present. In some cases, no visual abnormalities could be found, so the term word-blindness began to be used as a descriptive term.

In 1896, Morgan stated that word-blindness was due to the lack of development of a certain portion of the brain. Hinshelwood, an ophthalmologist, stated in 1917 that non-readers suffered from some congenital, pathological structure of the brain. Fernald


Kelly called attention to the part played by kinesthetic factors in the reading process. They contended that lip and hand are the essential links between the visual cue and the associations which give it word meaning. They thought it necessary for the child to develop a certain kinesthetic background before he could appreciate the visual sensations for which the printed words form the stimulus.

At about the same time, Doctor Bronner described several cases of reading blocks that she studied by methods of psychological analysis. She said that when there are reading deficiencies present in children of normal sensory capacities and intelligence, the reading difficulty may be related to special deficiencies in making visual associations or auditory associations.

Dr. Bronner in her Psychology of Special Abilities and Disabilities has a good discussion of reading defects. This begins with a short resume of what had been done in this field. Much had been done in an experimental way on the part played by the eye, or the physical aspects of reading. Investigations of eye movements and of the economics of perception had been made. It had been shown that

in reading the eye moves along the page, pausing frequently. It is during these pauses that we perceive. The length and number of the pauses influence the reader's rate of speed in covering printed pages. The formation of motor habits, the influence of the size of the print, the length of the line, the facility in grouping certain words together, all influence reading and the rate of comprehension of printed material. Many other authorities have made contributions in the field. Among them are such well known authorities as Cattell, Erdmann and Dodge, Mesmer, Dearborn, Hamilton, Husy, Pintner and others.

2. Erdmann and Dodge, Psychologische untersuchungen uber das lesen, 1898.
5. Hamilton, Francis, "The perceptual factors in reading." From Archives of psychology, Columbia contributions to philosophy and psychology, 17, 1907.
Much less had been done, Dr. Bronner found, to analyze the mental processes used in reading. Although Huey's work contains much that is valuable, he scarcely touches the essential psychological phases of reading and the major part of his pedagogical advice is based upon the physiological aspect in reading. Meumann goes a step farther than Huey. He mentions both the physiological factors and the ideational factors. He says that words and the mental content which they represent are presented to the reader through sensory symbols. These symbols must be both seen and interpreted by the reader. There must be a recognition of individual letters and an association with sounds. Finally whole words and phrases are recognized. These are then associated with meaning so that reading represents a complex activity based upon both analytical and synthetic processes. Perception and interpretation of symbols, memory -- both recognition and recall of immediately preceding ideas --, comprehension, motor processes, emotion and complex associations are all involved in the process.

The relationship of inner speech (the exercising of the vocal chords in silent reading) to ease and speed of reading is another question bearing on the general subject. Pintner has done some investigation on this and announced his results
in an article entitled "Inner Speech during Silent Reading," published in the Psychological Review in 1913.

One of the aspects of reading which is measurable by tests is the ability to reproduce the meaning of what has been read. In order to reproduce what has been read one must be able to grasp the thought and to interpret it in the light of experience. Inability to do this is quite different from inability to master the pure mechanics of reading. For acquiring the latter, Meumann believes that teaching should be adapted to the various types of children. Among these he included the child who is unable to read because of strongly fluctuating attention. These children need a great deal of practice to acquire sharper visual impressions. According to Meumann, further differentiation of teaching methods might be considered necessary for those who use different types of imagery -- visual, auditory, and motor. However, Meumann believes that since vision, audition and motor processes are all involved in reading, it is not necessary to be too concerned about imagery types.

So little scientific data concerning the methods of teaching reading have been published that it is difficult to discuss methods in general. A specific discussion of the methods used by the teachers in the Richmond Public School System will be given in a subsequent chapter.
By way of summary, Dr. Bronner says that:

"... analysis of the reading process shows that there are involved (2) perception of form and sound, and discrimination of forms and sounds; (b) association of sounds with visually perceived letters, of names with groups of symbols, and of meanings with groups of words; (c) memory, motor, visual and auditory; and (d) the motor processes as used in inner speech and in reading aloud. Reviewing the whole process, we see that in the actual performance of reading there must be finally some synthetic process uniting all the separate elements. This is a point that has been little emphasized by students of the psychology of reading, but its validity and importance seem clearly established through our analysis of cases of special difficulty in reading."

As early as 1896, Richard Baerwald in his book, Theorie der Begabung, included the "synthetic" aspect of reading. He called synthesis in reading a mental function which deals with the meaning of words and the relationship of ideas. He differentiated synthesis from both association and apperception. Today, however, the word synthesis is usually used to mean the binding together of the various elements in the mechanics of reading.

Neurologists and ophthalmologists have dealt more with the question of reading disabilities than have psychologists. The former have reported and analyzed cases of so-called congenital word-blindness. Perhaps it would be wise to review briefly some of the cases reported.

In 1896, Morgan told of a boy fourteen years old who, despite his thorough instruction, could read only very simple words, could not take down dictation accurately and who even made mistakes in writing his name. After long hours of teaching he could read the letters of the alphabet, but he had no trouble at all in reading numbers. In mathematics problems were easy for him. He came from an intelligent family and with the exception of his reading disability was thought to be on an intellectual par with his school mates. In this case Morgan thought that the child's reading difficulties were caused by some congenital defect in the cortical center so that his visual memory of words and letters was hampered.

Following the publication of Morgan's article, there was an increase in the interest taken in reading problems. Ophthalmologists reported a number of cases which had come to them for examination. Hinshelwood has written a book on the subject and also two articles which contain four case-studies. The cases include: (1) A boy eleven years old who could not read letters, words or numerals, but re-


2. Hinshelwood, James, Letter -, word -, and mind-blindness, 1902.

membered pictures and could recognize them later. His auditory memory was so keen that he learned his reading lesson verbatim. (2) A boy ten years old, who was said to be intelligent, could read numbers, but could read only a few simple words. (3) A girl of ten years was able to read the text for the first grade with difficulty. It required nine months to teach her to recognize the letters of the alphabet. She, too, had a good auditory memory and could take dictation, spell and work simple problems in mathematics. (4) A boy of seven attended school for three years without being able to read. He could repeat the letters of the alphabet orally but could not recognize the letters in reading. After three months of daily instruction, he was able to recognize the letters of the alphabet and read simple sentences. Hinshelwood stated that when there is no ocular difficulty and where there is no lack of general intelligence, the diagnosis is one of congenital word-blindness. On the basis of the above cases he concluded that "visual memories of words, letters and figures are deposited in different areas of the cerebral cortex." In treatment, he advocates the use of blocks in training, thereby developing "muscle memories," to take the place of "visual memories."
1. Nettleship reported a case of a boy of eleven who could easily acquire information which was presented orally. He could pronounce words spelled to him and could spell them orally. He enjoyed carpentry, played games well, but could read only simple words. The details about the boy's educational opportunities were not stated. This author presented many similar cases. One of his cases was particularly outstanding, in that the boy concerned, nine years after his examination, was able to read fluently, and, in fact, had become a lawyer.

2. In 1904, Sidney Stephenson presented other cases similar to those given above. C. J. Thomas, an English writer, regarded as definitely localized, four special places in the brain, which are known as speech centers or word-centers. These he called the auditory speech-center, the visual speech-center, the motor speech-center, and the writing-center. He held that in word-blindness it was the visual speech-center that was imperfectly developed or which had some defect. Word memories could not be made and it was

1. Nettleship, E., "Cases of congenital word-blindness or inability to read," From Ophthalmic review, 1901.


therefore difficult to learn to read, write and spell. The
cases discussed by Thomas lead us to conclude that he be-
lieved that the inability to write from dictation frequently
involved defects in three of the speech-centers. These were
the auditory, the visual and the writing. Thomas pointed out
from the cases he studied that even when visual memory for
words is defective, visual memory for all else may be
normal or surpass normal.

In 1911, McCall 1 reported very briefly a case which
resembled those already briefly described, but she designated
it as an instance of congenital aphasia. More recently
Whipman 2 described cases similar to those discussed by
previous writers.

Besides the work done in this field by English writers,
some few other cases have appeared in various journals.
Otto Wernicke, 3 of Buenos Aires, described the case of a
girl nineteen years old who seemed to be of normal intelli-
gence. She spoke two languages and could read numbers, but
could not read words unless she spelled them first and even

1. McCall, Eva, "Two cases of congenital aphasia in chil-
dren," From British medical journal, 'May 1911.


3. Wernicke, Otto, "Congenital word-blindness," From Central-
blatt fur praktische augenheilkunde,
September 1903.
then her reading was extremely slow in rate. Madame Dejerine is quoted by Dr. Bronner in *The Psychology of Special Abilities and Disabilities*, as believing that the term word-blindness should be confined to those who are suffering from some cortical lesion which causes the inability to read. She considered it unwise to confuse the loss of a function with the absence of a function. Brisaud and other French authorities uphold Madame Dejerine in his view. This is the opinion of practically all neurologists. It will be noted here that even C. Wernicke in his article on disturbances of written language, did not mention congenital word-blindness.

Ladd and Woodworth define word-blindness as "inability to read, occurring, of course, in a person who previously could read and who has not become blind." They state

1. Bronner, Augusta F., *The psychology of special abilities and disabilities*, 1926. pp. 84


that the idea of localization in word-blindness has been asserted but not proven, because "negative and mixed cases have sufficient weight to prevent a general acceptance of this localization." 1.

McCready 2. said that there is a distinct hereditary influence in cases of reading deficiency. He tried to strengthen this stand by citing numerous cases in which children having reading difficulties have come from neuropathic families. He also added to this other causes such as defective intra-uterine development, injuries at birth, acute infectious diseases in infancy, and defective post-natal development.

Witmer 3. used the term amnesia visualis verba lis in describing the case of a boy fourteen years old, whose abilities and disabilities were as follows: (1) general intelligence equal to or above the average; (2) normal ability to express himself in spoken language; (3) good memory for sounds; (4) good visual memory for color, simple geometrical

1. Ladd and Woodworth, Elements of physiological psychology, 1911.


forms and separate letters; (5) visual memory for words defective—he could not read; (6) spelled correctly only such words as can be spelled from component sounds. This boy was found to be suffering from diplopia (the seeing of single objects as double). To this was attributed his reading difficulty rather than to congenital word-blindness.

The discussion to which this case led illustrates the need for both differential psychological as well as physiological diagnosis. Witmer did not feel that McCready gave an adequate explanation. If the boy could draw well and recognize numerals, it would seem that there was not a visual defect. This particular case was never settled, but led to a discussion that brought about reflection and further experimentation.

In reviewing the work on reading disabilities, we are impressed by the inadequacy of the experiments. From a psychological point of view, the cases were poorly analyzed. Until 1910 no psychological tests were used and there was no standard for gauging the general intelligence of the patients studied. Dr. Bronner says that up to that time "the evidence in favor of a congenital defect localized in a definite visual center for words rests solely on the inability to read, an interpretation based on a supposed analogy to disabilities due to known cerebral lesions."

14.

When we stop to consider the complexities involved in reading problems, we begin to think of the inadequacy of the term word-blindness which appears to be little more than a blanket term, easy to apply, but of little value in understanding and treating cases.

Dr. Bronner concluded her discussion of the historical aspect of the reading problems by saying:

"If inability to read can be due to inadequate functioning of other mental processes, such as the synthesizing faculty already dwelt upon, there is left no support for the alleged fact of narrowly localized cerebral insufficiency, though this does not mean that some central defect does not exist. The definite criteria formulated for diagnosis, particularly by McCready, cannot be regarded as scientifically established. He states: 'Given a child of school age, intelligent in other respects, not backward in other studies, who has difficulty in learning to read and who constantly makes mistakes, who has normal vision or refraction corrected by glasses, there should be no hesitancy in attributing the trouble to congenital word-blindness.' At the present stage of our knowledge there is no establishing by symptoms the facts of congenital localized neural lesions or defects analogous to acquired lesions, and our case-histories show that inability to learn to read may rest upon a basis of various powers."

The methods used by authorities before the time of Dr. Bronner are doubtful, because from a psychological point of view the cases were not adequately studied and analyzed.

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1. Bronner, Augusta F.; op. cit. 1926, pp.87
what is needed now is a more complete understanding of the mental processes involved in reading and a thorough analysis of the results obtained from complete study and treatment of such cases. The analysis must reveal not only the defective processes, but also the capacities that may be used as compensatory measures in training.

1. In an article by Orton, "An Impediment to Learning to Read -- A Neurological Explanation of the Reading Disability," which was published in School and Society, Vol. XXVIII, September 8, 1928, he has discussed rather fully his stand in connection with reading difficulties. He was strongly impressed from the beginning of his work that retarded readers formed a homogeneous group who differed only in the degree of their handicap and not in type. He thinks that the explanation of the cause of the handicap rests on well-known facts of brain anatomy and brain pathology. In explaining the physiology of sight and hearing, he says that in order to enable proper response it is important that a single object or a single sound shall give rise to only a single impression and not to a separate sensation of the messages from each eye or each ear as in the case of the touch-messages which a person gets from a touch on the thumb. Each eye is connected with both hemispheres and

thus, whether an image falls on either retina or on both, its message is immediately relayed to both hemispheres of the brain. A comparable situation exists in hearing. Orton says that the impression of sounds is brought about by the fusion of the sound effect on both ears. His point of view has been supported by physiological studies and also by observation of cases in which a portion of the brain had been destroyed. Orton says that:

"When one motor area is destroyed a paralysis in one half of the body (hemiplegia) results, but when one visual area or one auditory area in the brain is destroyed there is no loss of central vision or hearing. Thus we must assume that either half of the brain alone is competent for sight and hearing."

Orton restricts the foregoing statements to simple material brought in by sight and hearing, because in the more complicated processes which underlie understanding of written and spoken language, there is still another type of relationship between the two hemispheres. Speaking, writing, understanding the spoken word and understanding the written word seem to be controlled, according to Orton, exclusively from one hemisphere. He supports this by saying that the destruction of certain areas of one hemisphere may cause the loss of one or more of these

functions while an identical injury to the other hemisphere gives no demonstrable results.

"This striking difference in functional importance of the two hemispheres in the more complex functions underlying language constitutes the problem of cerebral dominance, and while much of the older view of the exact pigeonholing of these functions into restricted areas, predestined for that particular purpose, is under change today, yet the general view of control of these functions from one hemisphere is practically universally accepted." 1.

Although the two hemispheres differ in these functional aspects, there is no such striking structural difference between the two hemispheres.

"The two halves of the brain, however, while alike in size and design, are reversed in pattern, that is, the left hemisphere bears the same relation to the right hemisphere that the left hand does to the right hand. It seems logical, therefore, to conclude that the records (or engrams, as they are called) of one hemisphere would be mirrored copies or antitropes of those in its mate. If there should be failure in establishment of the normal physiological habit of using exclusively those of the hemisphere there might easily result a confusion in orientation which would exhibit itself as a tendency toward an alternate sinistrad and dextrad direction in reading and in a lack of prompt recognition of the differences between pairs of words which can be spelled backwards or forwards such as was and saw, not and ton, en and no, etc." 2.

2. Ibid., p. 288.
Orton believes that the conception of the group of readers, resting as it does on a physiological basis, offers a more constructive approach to training than do the previous theories of disease, brain defect and inherent psychological type. The errors that children make in a test situation serve both to indicate the severity of the disability and give clues as to what methods of retraining should be used. Orton states that it has been shown by experimentation that it is easier to make rapid progress in remedial reading cases when the child's disabilities are discovered when he is very young.

One big factor in the process of retraining, according to Orton, is the earnest cooperation and willingness of the children when they realize that they are no longer under suspicion of being "dumb-bells" or of not working. The cooperation of the parents of these children is always helpful during the retraining period.

A study of a number of children with reading difficulties was made possible by the Behavior Research Fund, and by the Institute for Juvenile Research in Chicago, Illinois. The results of this study were published in 1932 by Marion Monroe in "Children Who Cannot Read."
In summing up some of the causative factors in reading defects, a full quotation from this book will aid in understanding the statistical data presented in this thesis.

*CAUSATIVE FACTORS IN READING DISABILITIES*

I. Difficulties related to the visual aspects of reading.

1. Lack of clear-cut retinal images, due to defects in the refractive mechanisms of the eye, may impede progress in reading.

Manifestations in reading.

The child shows evidences of eyestrain and confuses similarly shaped letters such as o, e, c, or b, h, n, etc. Reading errors consist of confusion of words such as "eat," "cat," "eat," or "hand," "band," "hard," etc.

2. Lack of precision in discrimination of complex visual patterns may impede progress in reading. The difficulty in discrimination of patterns in some cases may be associated with hemianopsia, or with injury to optic tracts or cortex. The difficulty in other cases may be due to poor acuity of the peripheral retina so that the child must bring small parts of the pattern successively into focal vision. The difficulty in still other cases may be due, not to sensory defects, but to difficulties in correlating the visual impressions with language through functional, rather than organic, deviations.

Manifestations in reading.

The child seems unable to react to words as units. He reads slowly, by spelling out the letters. He sometimes tries to identify
patterns by tracing over them with the finger. His reading errors consist of omissions of sounds and filling in words by guessing from one or two recognized letters, thus producing vowel and consonant errors.

3. Lack of discrimination of the spatial orientation of patterns may impede progress in reading. Space perception is usually developed through motor reactions to objects, by looking at, reaching for, or manipulation of the objects in positions up, down, right, left, near, far, etc. A confusion in the directional movements of the hands, or of the hand and eye, may result in confusion of the right or left positions of patterns.

**Manifestations in reading.**

The child confuses the patterns which are alike in shape, but which are placed in different positions, as b, d; p, q; u, n; m, w; f, t; "was," "saw;" "en," "no;" etc. He confuses the sequence of words and is often a fluent mirror-reader or mirror-writer. He sometimes traces the words or letters with his finger in order to determine their position. He slides his finger along the text in order to give a cue to direction. His reading errors consist of reversals, repetitions, and sometimes, because of correlating the sequence of sounds with the reversed sequence of letters, of consonant and vowel errors.

II. Difficulties related to the auditory aspects of reading.

1. Lack of auditory acuity due to partial deafness may impede progress in reading.

**Manifestations in reading.**

The child omits endings and non-stressed syllables because he does not hear them. He confuses some of the consonants and vowel sounds.
2. Lack of precision in the discrimination of speech sounds may impede progress in reading. Difficulty in discrimination may be due to a defect in the auditory mechanism for some ranges of pitches and sound qualities. The difficulty is often associated with articulatory speech defects. The articulatory speech defect may result from the lack of precision in auditory discrimination, or if no sensory defect is present, may cause the lack of discrimination. In cases of articulatory defects, the words as presented to a child by himself and others are different in auditory pattern and yet become so closely associated in the common response as to be inseparable in discrimination.

**Manifestations in reading.**

The child confuses words composed of similar words, such as "send," "sand," "hit," "bet," "sashing," "Catching," etc. He has difficulty in forming visual-auditory associations. Reading errors consist of vowel and consonant errors, additions and omissions of sounds.

3. Lack of precision in the discrimination of the temporal sequence of sounds may impede progress in reading. The difficulty in discrimination of sequence of sounds may result from inability to discriminate the separate sounds of the pattern. The child who cannot tell the difference between the separate sounds of the word cannot very well distinguish which sound comes first. The difficulty may be due to poor retention of auditory patterns so that the patterns cannot be held in mind long enough for temporal analysis.

**Manifestations in reading.**

The child has difficulty in applying phonics as a method of word-recognition. He may be able to give the separate sounds for each of the letters composing a word but cannot blend the sounds to get the
complete word. He often reverses the sequence of sounds, in attempts at blending, as "p-a-r-t-y," blended to make "pottery." Reading errors consist of vowels, consonants, reversals, additions and omissions of sounds.

III. Difficulties related to motor aspects of reading.

1. Lack of precision in the motor control of the eyes may impede progress in reading. Children who cannot direct the eyes accurately to the printed words and maintain the motor adjustment for a period of time usually have difficulty in attending to visual symbols with sufficient persistence to form the necessary associations.

Manifestations in reading.

The child frequently loses the place in reading. He skips lines and words. He often follows the text with the finger as a means of keeping the place. Reading errors consist of omissions of words, omissions of sounds, reversals, and repetitions.

2. Lack of precision in motor control of speech may impede progress in reading. Articulatory speech defects due to cleft palate, partial paralysis, clumsy movements of the speech-motor mechanism, or failure to establish proper motor habits of speech offer an impediment to precise auditory discrimination of speech sounds, and to the formation of speech-reading associations. Stuttering also presents an impediment to reading either as a disruption of motor speech or in association with other motor functions affecting reading.

Manifestations in reading.

The child confuses words in reading which contain the confused sounds of speech. Frequent errors found in cases of articulatory defects are vowels, consonants, additions and omissions of sounds, and, in cases of stuttering, reversals and repetition.
3. Lack of precision in directional motor responses may impede progress in reading. Left-handed or left-eyed children, whose most facile direction of movement is toward the left rather than toward the right, have to make a motor adjustment which is opposite in direction from that of right-handed or right-eyed children. In trying to imitate the motor patterns set by social custom, left-handed or left-eyed children may become confused in directional responses. Children whose hand-and-eye preferences are mixed may also develop confusion in direction. In those cases in which the directional motor responses are inconsistent, difficulties in discrimination of spatial orientation of patterns may result.

Manifestations in reading.

The child shows the manifestations described under failure to discriminate the spatial orientation of patterns.

IV. Difficulties related to conceptual aspects of reading.

1. Lack of vocabulary may impede progress in reading. Children who have not acquired the verbal symbols which are to be associated with the visual symbols are often delayed in progress in reading.

Manifestations in reading.

The child fails to comprehend the meaning of the text. He cannot utilize context in giving cues to words since his vocabulary is too meager to suggest possibilities for the unknown words.

2. Lack of facility in the organizations of language may impede progress in reading. Verbal responses are organized and manipulated in many ways. Sometimes the relationships are simple, such as subject-predicate, adjective-noun, etc. Sometimes the relationships are complex, such as sentences
containing dependent clauses, metaphors, contrasts, etc. Some individuals may manipulate a small vocabulary in complex organizations and meanings. Other individuals may manipulate a larger vocabulary in very simple organizations of meanings. Children whose facility in the organization of language is limited may become confused in reading even though they possess adequate vocabularies.

Manifestations in reading:

The child skips periods, or inserts pauses at illogical positions in the sentence. He fails to comprehend the meaning of text. The substitutions of words guessed from context are irrelevant or absurd.

V. Difficulties related to methodological aspects of reading.

1. Overstress of speed of reading may develop habits which impede progress in reading.

Manifestations in reading.

The child becomes breathless, excited. Reading errors of all kinds are increased, particularly omissions of sounds and words. Mannerisms to gain time appear, such as clearing voice between words, inserting "ah," repeating portions of sentences before hard words while the words are studied under cover of repetition. Many substitutions and illogical words, guessed hurriedly from context, appear. The child fails to give an accurate account of the content after reading.

2. Overstress of some methods of word-recognition may develop habits which impede progress in reading.

Manifestations in reading.
Overstress of contextual cues to new words produces improvised or picture reading, substitutions, addition of words, and omissions of words. Overstress of some systems of phonetic analysis such as explosive sounding (guh for g, puh for p, etc.) prevents sound-blending. Phonetic systems of rhyming, such as "cat," "hat," "sat," "pat," etc., may stimulate reversals if the child looks first at the ending to identify the family and then makes a regressive movement to the beginning of the word. Unwise selections of word lists may develop confusions, for example, "can," "cat," "cap," "car," "call," in a list to represent the sound of short a. Mechanical emphasis without attention to context may lead the child to ignore meaning.

VI. Difficulties related to environmental aspects of reading.

1. Among the environmental factors which impede progress in reading may be mentioned the following: foreign language, illiterate parents, truancy and poor school attendance, frequent moves from school to school, number of siblings or ordinal position of child among siblings, etc.

VII. Difficulties related to emotional aspects of reading.

1. Among the personality and emotional factors which may impede progress in reading may be mentioned the following: attentional instability; resistance to reading; fear, timidity, embarrassment; withdrawal, etc. In some cases the emotional factors may be due to constitutional instability or poor habit-training. In other cases the emotional factors may result directly from the failure
to learn to read due to other reasons, and then in turn aggravate the disability."

This outline compiled by Marion Monroe on the basis of her research is full and adequate, and will be of value in the interpretation of the data which follow.

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CHAPTER II.

The Research Department of the Richmond Public School System and its Recent Work in Reading Disabilities.

The Department of Research of the Richmond Public Schools has made several studies concerning reading disabilities among Richmond Public School pupils. Group and individual reading tests have been made by this department and recommendations given in the form of mimeographed material to the teachers of the elementary schools. Some of the work done in this field by the Research Department will be reviewed briefly so that it may throw some light upon the writer's own material which was collected from seven of the elementary schools which have been worked by the Research Department.

This Department is composed of a head and two workers. One of the workers gives all of the individual tests and the other worker devotes her time wholly to group testing. The children who are deficient in reading are usually referred by the teacher to the principal, who in turn refers the children to the Department of Research for testing. Each child is given a Stanford Revision of the Binet
intelligence test. He is then tested for reading ability with Gray's Oral Reading Test. The psychometrist keeps a record of the results in the office of the schools in which the various pupils are registered. Her recommendations for the children tested are generally based upon the test records and the causative factors are not entered into very deeply. Occasionally there are comments concerning a pupil's lack of adequate vocabulary or his slow rate of reading, but this is always a rather superficial report with no definite statement of the child's problem entailed.

For the past several years the Department of Research has emphasized reading in the first and second grades from several different points of view. This Department has emphasized the importance of the effect of the mental age of the pupil on learning to read. From the reports of authorities in this field and from the findings of the Department itself, it has been concluded that until a child has reached a mental maturity of six years or more, he is not able to cope with reading satisfactorily. A number of authorities agree that it is better to wait until a child has reached six years and six months before teaching him to read. The Research Department has also emphasized the importance of reading as a factor which, to a large degree, determines the achievement of a pupil
throughout his school life in those subjects which are directly dependent on reading. It has tried also to bring about an objective standard for reading from the first grade up and to supply remedial training beginning with the first grade rather than later when a reading deficiency shows up as a failure in some school subject directly dependent on reading.

The teachers of the children who showed reading deficiencies were sent the records of the children. Each teacher was instructed to familiarize herself with the difficulties of the pupils and proceed on the basis of this to teach remedial reading.

A booklet was published in 1933 by Josephine H. Holloran of the Department of Research of the Richmond Public Schools called "Causes of Deficiencies in Reading and Exercises Suggested as Aids in Improving These Conditions." This booklet is based upon the "Manual of Directions for Gates Primary Reading Tests." The following data are quoted from Miss Holloran's booklet:
"CAUSES OF INADEQUATE READING VOCABULARY
or
DEFICIENCY IN WORD RECOGNITION.

I. Inferior Mental Capacity.
(1) The remedial procedure consists both in adjusting expectations of achievement to the level of intellect found, and in providing more extensive, varied, and explicit exercises.

II. Lack of General Experience or of Experience in Using Oral English.
(1) The child whose earlier life has provided neither rich nor varied contacts with life or whose conversation has been limited in amount or variety or largely to foreign tongue will need special types of word study.

III. Study Limited to Unusual Vocabulary.
(1) Sometimes pupils are taught unusual words merely to make up large phonetic families. Sometimes such a vocabulary is the result of some freakish scheme of teaching primary reading. No matter what words a pupil may know if he can not read such words as those in the Primary Word List* he will be handicapped in his efforts to read the more representative and more important children's material.

IV. Lack of Training in Word Recognition.
(1) Insufficient time spent in training.
(2) Lack of application during study.

* A reading vocabulary for the primary grades by Arthur I. Gates
V. Inappropriate Methods of Perceiving Words and Deficiencies in Methods of Learning to Read New Words.

(1) Children of all levels of intelligence, bright as well as dull, despite abundant drill and hard application sometimes fail to acquire the essential technique of learning and consequently develop inappropriate habits of perception and word analysis.

* * * * *

EXERCISES TO EXTEND VOCABULARY

I. Recognising Words from the Context.

(1) The method of trying to recognize an unfamiliar word by deriving its probable meaning from the context, with or without special analysis of the word-form itself is a thoroughly desirable method. If used exclusively or excessively, however, it may result both in distortion of the thought and in practicing errors in word recognition. Each pupil needs material graded to his ability, material that expresses a clear idea with one or a few unfamiliar words in the sentence. This procedure places comprehension foremost.

II. Phonetic Devices.

(1) Skill in recognizing the phonetic elements in unfamiliar words is helpful in recognizing the word as a whole.

(2) Limiting the pupil's technique to the phonetic attack is undesirable. The pupil should have several methods of attack.
The phonetic elements most frequently found in the words commonly used by primary pupils alone need to be taught. Instead of utilizing one general type of phonograms, any type which appears with great frequency should be used.

It is not necessary to teach specifically all phonograms, even the more common ones. What the pupil needs is the knack of identifying word elements.

The pupil should learn to utilize the context to the utmost while observing the unfamiliar word in such a manner as to see and recognize its phonetic elements.

III. Other Analytic Devices.

(1) Spelling Method.

Some pupils will spell an unfamiliar word letter by letter. This is a slow process yet serviceable in the case of non-phonetic words.

(2) Syllable Method.

The pupil breaks up his work into familiar syllables or parts. For example the word examination may be broken up into ex-am-i-na-tion. This procedure may be distinguished from the phonetic analysis in which such elements as th, tr, bl, or the individual letters are advanced separately. The syllable method has many advantages, although it is not applicable to all words.

(3) Configuration Method.

The pupil appraises the word as a whole, recognizing it from the general shape. Used in connection with clues from the context, this is a very good method when it can be used without too many errors. The use of such a method may be recognized by the type of errors made in reading difficult material. The pupil will then often pronounce not the word itself but one more or less similar in
general configuration. Thus whence may be called when, where, hence; ball may be called bell, tall, hall, call, etc. In dealing with long words such pupils will not utilize piecemeal methods but often appear merely to guess.

* * *

VERSATILITY OF ATACK IMPORTANT.

No one of these methods is entirely undesirable and futile, but merely is any of them altogether sufficient. The difficulties in word recognition come from relying exclusively on one method, especially a method inappropriate to pupil's general linguistic ability.

SPECIAL EXERCISES FOR VOCABULARY EXTENSION.

I. Games for Teaching Words.

For many of these games, cards are required. The cards should have the word on one side and a pictorial illustration on the other; for example, for cat, have a drawing of the animal; for swim, have a picture of a duck, boy, and dog swimming; etc. Words like was, there, etc., may be contained in very simple sentence. Children often enjoy drill in these cards directly. The following games are examples of many that add further zest.

(1) Find Game.

A set of cards, as above described, word side up. Another set with the corresponding pictures (no word under pictures) plus a few extra
pictures which should be left over. Child selects pictures of horse, swims, etc., and placed them by the proper words. Check answers by turning over the word card, which should have its picture underneath; the two pictures should match. Keep records of child's success with each list. When he gets all right on several successive tests, give new words.

(2) Grab Box Game for one or more children.
Child has set (or sheet) of pictures. Each takes turn in pulling out of grab box a card on which is a word. The word is then matched with a picture and pronounced. If child fails, word goes back in box. Child getting all his pictures matched with words wins.

(3) Spinning Wheel Game.
A large cardboard spinning wheel around which children sit. Pictures in center, word cards around outer edge. Spin. The child pronounces or finds the picture of the word which stops in front of him. Check by looking under word card for picture. Largest number correct wins.

(4) A Test for Review.
A card with list of pictures in a row; the word appears on the back. A set of word cards with a few extras. Match.

(5) Game of Authors.
Divide words into classes; for example, animals, what cats do, things in the room, parts of body, etc. Five of each class make a book. For each book five cards, one word at top, others below. Play like authors.
(6) Sign Projects.

Draw pictures of signs to show where such words as stop, go, enter, here, poison, toys, ice cream, candy, etc., appear; or give pupils drawings and have them find words; or give verbal descriptions and have them find words.

(7) Test Game.

A series of words around a picture as in Test I, Word Recognition Test. Underline the correct word.

(8) Test Game.

A word at left with series of pictures at right. Draw a line through correct picture.

Ball (Picture of box) (Picture of ball) (Picture of ball)

In all the above, transitions may be made gradually to phrases and sentences. (See also sections above.) Thus under 7 and 8, instead of single words, one may use the pictures and phrases, "A big ball," "Girl with a ball," "Boy eating an apple."

II. EXERCISES AND GAMES TO SHARPEN PERCEPTION OF WORDS, ELIMINATE WORD CONFUSION, DEVELOP ABILITY TO RECOGNIZE NEW WORDS THROUGH FAMILIARITY WITH WORD-ELEMENTS.

(1) Selection Test.

A small picture with several familiar words (begin with words not too similar) around it, or one side, thus:
(2) Domino Game.

Use about 24 different cards, all words same length, every word on at least two dominoes. Thus one may be at one end, cat on other end of a domino-like card. Play like dominoes. Each child must pronounce the words. The player who gets rid of his cards first wins. Include many cards containing elements common to many simple words, such as bell, black, cat, hill, sing, night, etc.

(3) Calling Card Game.

Use about 20 words, such as those under (2) above; make two copies of each, i.e., 40 cards in all. Deal out about 7 cards. Players discard words for which they have matches. Take turns in calling for words needed to match the cards in their hands. (Remaining cards dealt out as necessary.) Child that matches all his cards first wins; others count their pairs. Other words of special difficulty for children playing should be freely used along with those above. Confusing words like the, they, these, there, should be also used.
(4) Author's Game.

Sets of words with similar beginnings or endings, e.g., ball, bat, baby, base, bark may be used in a game like 5 above.

The same devices for perfecting appropriate methods of 'seeing' words may be introduced in reading of sentences and paragraphs. At all stages the study of new words should be carried on to enlarge the vocabulary and to develop ability to recognize unfamiliar forms.

III. EXERCISES TO IMPROVE READING OF PHRASES, SENTENCES, AND PARAGRAPHS.

(1) Story Making.

A picture on the back of an envelope which contains word, phrase, or sentence cards of familiar and relevant material. The pupil builds sentences or stories about the picture by arranging the cards.

(2) Story Illustrating.

Phrases, sentences, and paragraphs to be read and comprehension indicated by selection (or drawing) of illustrations.

(3) Directions to color, draw, cut, make, find, do, etc., may be graded from very easy to harder and longer.

(4) Yes - No Exercises like the following:

Do cats sing? Yes No
Is milk white? Yes No

(5) Selection Exercises:

Dogs like to eat meat or (corn, meat, soap) soap
What does a bird do?
It sings.
It swims.
It talks.

(6) Reasoning Choices.

Where does the sun set?
In the east.
In the morning.
In the west.

(7) Observation Choices.

A picture mimeographed at the top of a page. Beneath are 12 questions to be answered by reference to the picture.

A sample question is:

What are under the trees? Children, the fire, the dogs, the birds. " l.

1. Holloran, Josephine H., "Causes of deficiencies in reading and exercises suggested as aids in improving these conditions." From Department of Research, Richmond Public Schools.
CHAPTER III

METHODS EMPLOYED IN THE STUDY.

The subsequent statistical data have been gathered from seven elementary schools in the Richmond Public School System. The schools are distributed over the four general sections of the city and consist of the following schools: Ginter Park, J. E. B. Stuart, John B. Cary, Madison, Patrick Henry, Bellevue, and Nathaniel Bacon.

The children were originally referred to Miss Josephine Holleran of the Research Department of the Richmond Public Schools by the teachers or by the principals of the schools. The reason for referral of the children was reading disability. Each child was given a Binet-Simon Intelligence Test, and a Gray's Oral Reading Test. The results of these tests are recorded in each respective school office and in the office of the Research Department. Other statements concerning each child were made as comments by Miss Holleran. These statements include records of the child's retardation in school, the grade in which the child should be according to his cumulative mental age, the grade in which the child is at present, and the child's degree of reading retardation,
the chronological age, the date tested, and superficial comments regarding the reason for the child's retardation in reading and what teaching methods should be employed to aid the child in progressing in this subject.

The children studied by the writer were those who had been tested for reading difficulties by the Research Department during 1932-'33. No children having I. Q.'s below seventy-five were selected for study, because the question of lack of mental ability below this level might account for reading disability. The total number of children selected for study was one hundred and twenty-nine.

Permission was obtained from the Research Department to gather the data which had been recorded in the offices of the schools. Miss Holloran pointed out that the comments on each child were not complete, because the lack of an adequate staff has prevented a more thorough study of the children who are referred.

A questionnaire was compiled on the basis of a questionnaire used by Wickman in Children's Behavior and Teacher's Attitudes. 1. Wickman's questionnaire was sent out to teachers and to mental hygienists to determine the difference in rating of behavior problems by these

two groups. The writer added to his questionnaire several questions on physical problems including questions referring to legibility in handwriting, skill in the playing of games and skill in handicraft. A place for comments upon left-handedness, speech defects, lying, cheating, stealing, masturbation, heterosexual activity and other significant behavior was supplied at the end of the questionnaire.

Questionnaires were given to each respective teacher in order to gain knowledge of the behavior of each child. Out of the one hundred and twenty-nine questionnaires distributed, one hundred and seven were returned. The remaining twenty-two could not be filled out, because of too short contact of the teacher with the pupil, or because the teachers of those pupils had left that particular school. The total number of cases studied, then, was one hundred and seven.

Further information was obtained through conferences with the principals of the various schools.
CHAPTER IV.

GENERAL STATISTICAL FINDINGS

This chapter is concerned with the general findings of this study.

The rating scale and the I. Q.'s obtained on the Binet Simon tests were used in determining the social adjustment of the total group. The data have been divided into three general divisions for the sake of coherence. These divisions are: the mental, emotional and physical. It is assumed that wide variations from the norm of the rating scale indicate maladjustment. Those cases rating at either extreme end of the scale may, in general, be said to tend toward maladjustment when this variation occurs in a majority of the questions. The norm of the scale is generally the middle rating on each of the rating scales.

The first section, the mental, is based upon the findings in regard to actual I. Q.'s and in regard to the ratings given the pupils by their teachers.

The cumulative mental ages are divided into groups and the percentages falling in each group are placed directly under the I. Q. divisions.
There were 107 cases in all with 73 having I. Q.'s below 100 and 34 having I. Q.'s of 100 or above.

<table>
<thead>
<tr>
<th>Dull</th>
<th>Average</th>
<th>Bright</th>
<th>Brilliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-89</td>
<td>100-109</td>
<td>110-119</td>
<td>120</td>
</tr>
<tr>
<td>36 %</td>
<td>32 %</td>
<td>27 %</td>
<td>5 %</td>
</tr>
</tbody>
</table>

According to the ratings given on the questionnaires, the results in percentages were as follows:

1. How intelligent is he?

<table>
<thead>
<tr>
<th>Feeble-minded</th>
<th>Dull</th>
<th>Equal of Average Child on street</th>
<th>Bright</th>
<th>Brilliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 %</td>
<td>36 %</td>
<td>52 %</td>
<td>12 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

2. What is your opinion of his ability to advance in school?

<table>
<thead>
<tr>
<th>Limited to 3rd grade</th>
<th>Limited to 5th grade</th>
<th>Limited to 8th grade</th>
<th>Could finish high school</th>
<th>Graduate from college</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 %</td>
<td>6 %</td>
<td>28 %</td>
<td>45 %</td>
<td>20 %</td>
</tr>
</tbody>
</table>
3. Is he slow or quick in thinking?

<table>
<thead>
<tr>
<th>Extremely</th>
<th>Sluggish</th>
<th>Thinks with ordinary speed</th>
<th>Agile-minded</th>
<th>Exceedingly rapid</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 %</td>
<td>29 %</td>
<td>43 %</td>
<td>8 %</td>
<td>1 %</td>
</tr>
</tbody>
</table>

4. Is he slovenly or careful in his thinking?

<table>
<thead>
<tr>
<th>Very slovenly and illogical</th>
<th>Inexact, a dabbler</th>
<th>Moderately careful</th>
<th>Consistent and logical</th>
<th>Precise</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 %</td>
<td>24 %</td>
<td>52 %</td>
<td>13 %</td>
<td>2 %</td>
</tr>
</tbody>
</table>

5. Is his attention sustained?

<table>
<thead>
<tr>
<th>Distracted, jumps rapidly from one thing to another</th>
<th>Difficult to keep at task until completed</th>
<th>Attends adequately</th>
<th>Is absorbed in what he does</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 %</td>
<td>48 %</td>
<td>30 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Able to hold attention for long periods.</th>
<th>2 %</th>
</tr>
</thead>
</table>


6. Is he mentally lazy or active?

<table>
<thead>
<tr>
<th>Extremely lazy and inert</th>
<th>Lethargic and idle</th>
<th>Ordinary active</th>
<th>Energetic</th>
<th>Shows hyper-activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7%</td>
<td>35%</td>
<td>49%</td>
<td>9%</td>
<td>0%</td>
</tr>
</tbody>
</table>

B. Emotional

4. Is he abstracted or wide-awake?

<table>
<thead>
<tr>
<th>Constantly absorbed in himself</th>
<th>Frequently becomes abstracted</th>
<th>Usually present minded</th>
<th>Wide-awake</th>
<th>Keenly alive and alert</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>52%</td>
<td>27%</td>
<td>11%</td>
<td>0%</td>
</tr>
</tbody>
</table>

7. Does he act impulsively or cautiously?

<table>
<thead>
<tr>
<th>Impulsive, acts on spur of moment</th>
<th>Frequently unreflective and imprudent</th>
<th>Acts with reasonable care</th>
<th>Deliberate</th>
<th>Very cautious and calculating</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>25%</td>
<td>35%</td>
<td>12%</td>
<td>8%</td>
</tr>
</tbody>
</table>
9. Is he indifferent or does he take interest in things?

<table>
<thead>
<tr>
<th>Is indifferent, uninterested</th>
<th>Uninquisitive</th>
<th>Displays usual curiosity</th>
<th>Interest is easily aroused</th>
<th>Has consuming interest in most everything</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 %</td>
<td>30 %</td>
<td>39 %</td>
<td>18 %</td>
<td>1 %</td>
</tr>
</tbody>
</table>

12. Is he slovenly or neat in personal appearance?

<table>
<thead>
<tr>
<th>Unkempt Very slovenly</th>
<th>Rather negligent</th>
<th>Inconspicuous</th>
<th>Is concerned about dress</th>
<th>Fastidious foppish</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 %</td>
<td>14 %</td>
<td>58 %</td>
<td>26 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

15. How does he impress you with regard to masculine or feminine traits?

<table>
<thead>
<tr>
<th>Is a &quot;sissy&quot; or a &quot;tomboy&quot;</th>
<th>Slightly effeminate or somewhat boyish</th>
<th>Has average boy qualities or average girl qualities</th>
<th>Very masculine or quite feminine</th>
<th>Entire masculine &quot;A Buck&quot; or &quot;A coquette&quot; &quot;A clinging vine.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 %</td>
<td>10 %</td>
<td>75 %</td>
<td>11 %</td>
<td>1 %</td>
</tr>
</tbody>
</table>
16. To what extent does he associate with members of the opposite sex?

<table>
<thead>
<tr>
<th>Avoids them</th>
<th>Associates infrequently with them</th>
<th>Shows usual interest in them</th>
<th>Gives much time to them</th>
<th>Associates almost exclusively with them</th>
</tr>
</thead>
<tbody>
<tr>
<td>8%</td>
<td>25%</td>
<td>67%</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

17. Is he shy or bold in social relationships?

<table>
<thead>
<tr>
<th>Painfully self-conscious</th>
<th>Timid, frequently embarrassed</th>
<th>Self-conscious on occasion</th>
<th>Confident in himself</th>
<th>Bold, insensitive to social feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td>6%</td>
<td>18%</td>
<td>45%</td>
<td>29%</td>
<td>3%</td>
</tr>
</tbody>
</table>

18. What are his social habits?

<table>
<thead>
<tr>
<th>Lives almost entirely to himself</th>
<th>Follows few social activities</th>
<th>Pursues usual social activities and customs</th>
<th>Actively seeks social pleasures</th>
<th>Prefers social activities to all else.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6%</td>
<td>26%</td>
<td>61%</td>
<td>5%</td>
<td>3%</td>
</tr>
</tbody>
</table>

20. Is he quiet or talkative?

<table>
<thead>
<tr>
<th>Speaks very rarely</th>
<th>Mostly quiet</th>
<th>Upholds his end of talk</th>
<th>Talks more than his share</th>
<th>Chatters</th>
</tr>
</thead>
<tbody>
<tr>
<td>8%</td>
<td>35%</td>
<td>28%</td>
<td>23%</td>
<td>6%</td>
</tr>
</tbody>
</table>
21. Is he rude or courteous?

<table>
<thead>
<tr>
<th>Rude, insulting, insolent</th>
<th>Sometimes</th>
<th>Observes general conventions of civility and respect</th>
<th>Courteous</th>
<th>Over-courteous</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 %</td>
<td>12 %</td>
<td>66 %</td>
<td>21 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

22. Does he give in to others or does he assert himself?

<table>
<thead>
<tr>
<th>Never asserts self, servile</th>
<th>Generally yields</th>
<th>Holds his own, yields when necessary</th>
<th>Assertive</th>
<th>Insistent obstinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 %</td>
<td>19 %</td>
<td>55 %</td>
<td>13 %</td>
<td>4 %</td>
</tr>
</tbody>
</table>

23. How flexible is he?

<table>
<thead>
<tr>
<th>Stubborn, hide-bound non-conformist</th>
<th>Slow to accept new customs and methods</th>
<th>Confers willingly as necessity arises</th>
<th>Quick to accept new customs and methods</th>
<th>Easily persuaded, flaccid, unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 %</td>
<td>18 %</td>
<td>61 %</td>
<td>11 %</td>
<td>5 %</td>
</tr>
</tbody>
</table>
24. What tendency has he to criticize others?

<table>
<thead>
<tr>
<th>Never criticizes</th>
<th>Rarely criticizes</th>
<th>Comments on outstanding weaknesses and faults</th>
<th>Has a critical attitude</th>
<th>Extremely critical</th>
<th>Rarely approves</th>
</tr>
</thead>
<tbody>
<tr>
<td>17%</td>
<td>51%</td>
<td>19%</td>
<td>11%</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>

25. Does he lack nerve, or is he courageous?

<table>
<thead>
<tr>
<th>White-faced, Fearful</th>
<th>Gets &quot;cold feet.&quot;</th>
<th>Will take reasonable chances.</th>
<th>Resolute</th>
<th>Dare-Devil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>16%</td>
<td>70%</td>
<td>8%</td>
<td>4%</td>
</tr>
</tbody>
</table>

26. Is he easily discouraged or persistent?

<table>
<thead>
<tr>
<th>Melts before slight obstacles or objections</th>
<th>Gives up before adequate trial</th>
<th>Gives everything before trial</th>
<th>Persists until convinced of mistakes</th>
<th>Never gives in Obstinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4%</td>
<td>41%</td>
<td>42%</td>
<td>13%</td>
<td>0%</td>
</tr>
</tbody>
</table>

27. Is he negativistic or suggestible?

<table>
<thead>
<tr>
<th>Negativistic contrary</th>
<th>Complies slowly</th>
<th>Is generally open minded</th>
<th>Rather easily persuaded</th>
<th>Follows any suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>32%</td>
<td>31%</td>
<td>24%</td>
<td>10%</td>
</tr>
</tbody>
</table>
28. How does he accept authority?

<table>
<thead>
<tr>
<th></th>
<th>Defiant</th>
<th>Critical of authority</th>
<th>Ordinarily obedient</th>
<th>Respectful, complies by habit</th>
<th>Entirely resigned, accepts all authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responds</td>
<td>4%</td>
<td>9%</td>
<td>35%</td>
<td>28%</td>
<td>24%</td>
</tr>
</tbody>
</table>

29. How does he react to examinations or to discussion of himself or his problems?

<table>
<thead>
<tr>
<th></th>
<th>Flat refusal to cooperate</th>
<th>Volunteers must be pumped</th>
<th>Conservatively cooperative</th>
<th>Quite willing to cooperate</th>
<th>Entirely uninhibited, spills everything, enjoys it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responds</td>
<td>2%</td>
<td>31%</td>
<td>23%</td>
<td>42%</td>
<td>3%</td>
</tr>
</tbody>
</table>

30. How does he react to frustrations or to unpleasant situations?

<table>
<thead>
<tr>
<th></th>
<th>Very submissive, long-suffering</th>
<th>Tolerant, rarely blows up</th>
<th>Generally self-controlled</th>
<th>Impatient</th>
<th>Easily irritated, explosive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responds</td>
<td>13%</td>
<td>12%</td>
<td>52%</td>
<td>11%</td>
<td>13%</td>
</tr>
</tbody>
</table>

31. Is he generally depressed or cheerful?

<table>
<thead>
<tr>
<th></th>
<th>Dejected, melancholic, In the dumps</th>
<th>Generally dispirited</th>
<th>Usually in good humor</th>
<th>Cheerful, animated, chirping</th>
<th>Hilarious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responds</td>
<td>1%</td>
<td>11%</td>
<td>70%</td>
<td>17%</td>
<td>1%</td>
</tr>
</tbody>
</table>
32. Is he emotionally calm or excitable?

<table>
<thead>
<tr>
<th>Response</th>
<th>Emotions are</th>
<th>Responds</th>
<th>Is easily aroused</th>
<th>Extremely reactional, Hysterical, High Strung</th>
</tr>
</thead>
<tbody>
<tr>
<td>No emotional response, apathetic, stuporous</td>
<td>slowly aroused</td>
<td>quite normally</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td>30%</td>
<td>42%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3%</td>
</tr>
</tbody>
</table>

33. Does he worry or is he easy-going?

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>APPRAISAL</th>
<th>ASSESSMENT</th>
<th>To Do</th>
<th>TO DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constantly worrying about something, has many anxieties</td>
<td>Apprehensive, often worries unduly</td>
<td>Does not worry without cause</td>
<td>Easy-going</td>
<td>Entirely carefree, Never worries Light hearted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2%</td>
<td>9%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12%</td>
</tr>
</tbody>
</table>

34. Is he even-tempered or moody?

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>APPRAISAL</th>
<th>ASSESSMENT</th>
<th>To Do</th>
<th>TO DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stolid, rare changes of mood</td>
<td>Generally even-tempered</td>
<td>Is happy or depressed as conditions warrant</td>
<td>Strong and frequent changes of mood</td>
<td>Has periods of extreme depression or elation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>56%</td>
<td>27%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1%</td>
</tr>
</tbody>
</table>

35. Is he sympathetic?

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>APPRAISAL</th>
<th>ASSESSMENT</th>
<th>To Do</th>
<th>TO DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inimical, aggravating, cruel</td>
<td>Unsympathetic, Disobliging, cold</td>
<td>Ordinarily friendly and cordial</td>
<td>Sympathetic warm-hearted</td>
<td>Very affectionate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1%</td>
<td>6%</td>
<td>68%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7%</td>
</tr>
</tbody>
</table>
36. Is he suspicious or trustful?

<table>
<thead>
<tr>
<th>Suspicious</th>
<th>Has to be assured</th>
<th>Generally trustworthy and unsuspicious</th>
<th>Somewhat gullible</th>
<th>Accepts everything without question</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>14%</td>
<td>63%</td>
<td>2%</td>
<td>15%</td>
</tr>
</tbody>
</table>

37. Is his behavior (honesty, morals, etc.) generally acceptable to ordinary social standards?

<table>
<thead>
<tr>
<th>Unacceptable, extreme violations</th>
<th>Occasionally acceptable violations</th>
<th>Ordinarily acceptable</th>
<th>Always acceptable</th>
<th>Bends backwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>19%</td>
<td>47%</td>
<td>35%</td>
<td>0%</td>
</tr>
</tbody>
</table>

38. Is he sly or straightforward?

<table>
<thead>
<tr>
<th>Extremely sly and secretive</th>
<th>Frequently sly and secretive</th>
<th>Secretive or straight-forward depending upon the situation</th>
<th>Almost never sly or secretive</th>
<th>Always straightforward</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>15%</td>
<td>26%</td>
<td>30%</td>
<td>28%</td>
</tr>
</tbody>
</table>
C. Physical

10. What is his physical output of energy?

<table>
<thead>
<tr>
<th>Extremely sluggish</th>
<th>Slow in action</th>
<th>Moves with required speed</th>
<th>Energetic</th>
<th>Overactive, hyperkinetic, meddlesome</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 %</td>
<td>45 %</td>
<td>35 %</td>
<td>12 %</td>
<td>5 %</td>
</tr>
</tbody>
</table>

11. Is he easily fatigued?

<table>
<thead>
<tr>
<th>Shows quick exhaustion</th>
<th>Does not have ordinary endurance</th>
<th>Endures satisfactorily</th>
<th>Rarely shows fatigue</th>
<th>Unusually vigorous and robust</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 %</td>
<td>18 %</td>
<td>54 %</td>
<td>22 %</td>
<td>3 %</td>
</tr>
</tbody>
</table>

13. How does he impress people with his physique and bearing?

<table>
<thead>
<tr>
<th>Repulsive</th>
<th>Makes an unfavorable impression</th>
<th>Generally unnoticed physique and bearing</th>
<th>Makes a favorable impression</th>
<th>Excites admiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 %</td>
<td>13 %</td>
<td>49 %</td>
<td>37 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

14. Can he compete with others on a physical basis?

<table>
<thead>
<tr>
<th>Weak and handicapped</th>
<th>Has some physical difficulties</th>
<th>Can hold his own</th>
<th>Is stronger than most</th>
<th>Has exceptional strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 %</td>
<td>19 %</td>
<td>69 %</td>
<td>10 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>
39. Is his writing illegible or legible? *

| Extremely illegible | Bearly legible | Average | Very legible | Extremely legible | in comparison with
|--------------------|----------------|---------|--------------|-------------------|---------------------
| no coordination of small muscles | very little muscles involved | legibility better | others | coordination of small muscles than average |

3% 16% 54% 26% 4%

40. Is he poor or skilled in the playing of physical games?

<table>
<thead>
<tr>
<th>Extremely poor no big muscle coordination</th>
<th>Clumsy, but has slight control of big muscles</th>
<th>Average</th>
<th>Very good in playing games</th>
<th>Particularly skilled</th>
</tr>
</thead>
</table>

1% 16% 55% 28% 0%

41. Is he poor or skilled in handicraft?

<table>
<thead>
<tr>
<th>Very poor No progress</th>
<th>Slight progress</th>
<th>Average progress</th>
<th>Skilled</th>
<th>Very proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>8%</td>
<td>23%</td>
<td>56%</td>
<td>10%</td>
<td>2%</td>
</tr>
</tbody>
</table>

* NOTE: Of course this question can be regarded as educational in significance, but it also has to do with muscle coordination and for that reason has been placed under the section on physical factors.
In studying the data presented above, certain outstanding factors manifest themselves. The presentation of these factors will follow the same classifications that were used in presenting the data.

A. Mental

1. The majority of the cases fell below the average I. Q., 63 per cent having I. Q.'s below 100.

3. In speed of thinking, 48 per cent of the group were below the average in speed of thinking, while 52 per cent were average or above average.

6. In the question regarding attention, the results showed that 55 per cent were easily distracted while only 30 per cent attend adequately.

8. Regarding mental activity, 42 per cent were mentally lazy and inert, 49 per cent were ordinarily active, while only 9 per cent were above the average in alertness.

B. Emotional

4. Regarding self absorption and wide-awareness, 62 per cent frequently became absorbed in themselves or
became abstracted, while only 27 per cent showed average wide-awakeness.

7. There was a tendency toward impulsive, unreflective acts in 45 per cent of the cases, while 35 per cent acted with reasonable care and 20 per cent were cautious and calculating.

9. In the matter of indifference, 42 per cent were indifferent and unconcerned about things, 39 per cent displayed usual curiosity about things, while only 19 per cent were more interested in things than the average.

20. In the matter of talking, 43 per cent were quiet and not talkative, 28 per cent talked as much as the average person, and 29 per cent talked more than their share.

24. It is interesting to note that 62 per cent tended rarely or never to criticize others.

26. Regarding persistence, 45 per cent were easily discouraged, 42 per cent gave everything a trial, while only 13 per cent persisted until convinced.

28. In regard to the acceptance of authority, 52 per cent were either entirely resigned to authority or accepted authority by habit, 35 per cent were ordinarily obedient, and 13 per cent were defiant or critical of authority.
29. In examinations or discussions of themselves, 45 per cent cooperated willingly, 23 per cent were conservatively cooperative, and 33 per cent volunteered nothing or refused to cooperate.

33. In the classification of "easy-going" there were 49 per cent, while 40 per cent did not worry without cause, and 11 per cent were apprehensive or constantly worried.

34. Regarding mood changes, 66 per cent were generally even-tempered with rare changes of mood, while 27 per cent were happy or depressed as the condition warranted and only 7 per cent had frequent and strong changes of mood.

38. The majority were almost always straightforward, the results being 58 per cent in the straightforward group, 26 per cent being secretive or straightforward as the condition warranted, and 16 per cent being sly and secretive.

C. Physical

10. In the physical output of energy, 49 per cent were sluggish and slow, 35 per cent moved with required speed and only 17 per cent were energetic and vivacious.
41. Regarding skill in handicraft, 32 per cent appeared below the average, while only 12 per cent were above.

A comparison of present grade and mental age with reading level was made for ninety-two (92) cases on which we had complete information with regard to these three factors. The results of this comparative study are listed below.

1. In eleven cases the reading grade was on a par with the present grade. In fourteen cases the reading grade was on a par with the mental age.

2. In thirty-one cases there was a reading retardation of one semester behind the present grade. In twenty-one cases the reading retardation was one semester behind the mental age.

3. In twenty-two cases the retardation in reading was two semesters behind the present grade, and seventeen cases were retarded in reading two semesters behind the mental age.

4. Thirteen cases were retarded in reading three cases behind the present grade, and twenty cases were retarded in reading three semesters behind the mental age.
5. Seven cases were retarded in reading four semesters behind the present grade, and eleven cases were retarded in reading four semesters behind the mental age.

6. In three cases the retardation in reading was five semesters behind the present grade, and seven cases were retarded in reading five semesters behind the mental age.

7. Three cases were retarded in reading six semesters behind the present grade, and no cases were retarded in reading six semesters behind the mental age.

8. One case was retarded in reading seven semesters behind the present grade, and one case retarded in reading seven semesters behind the mental age.

9. One case was retarded in reading eight semesters behind the present grade, and no cases were retarded in reading eight semesters behind the mental age.

10. No cases were retarded in reading nine semesters behind the present grade, but one case was retarded in reading nine semesters behind the mental age.
The results obtained from the last section of the questionnaire, were not as complete as the writer had hoped. In some cases this section, which asked for comments, was left unanswered. The results obtained, however, are recorded below.

1. Eight cases were left-handed, and 76 were right-handed.

2. Sixteen had speech defects, 34 had no speech defects.

There were so few answers in regard to lying, cheating, stealing, masturbation and heterosexual activity, that the results are negligible as is shown by the following figures.

1. Five lie occasionally, six lie frequently.

2. Three steal occasionally, two steal regularly.

3. Nine cheat occasionally, eight cheat regularly.

4. One masturbates occasionally, one masturbates regularly.

5. Heterosexual activity was found to be average in all cases. There was very little overt demonstration.
Percentages on the questionnaire for students having I. Q.'s of 100 and above, and of students having I. Q.'s below 100 were obtained to compare the results on these groups with the results on the total number studied. The percentages for the group of 100 and above are listed in the left column in the order in which the questions are arranged on the questionnaire, and the percentages for the group below 100 are listed in the right column in the same order.

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0% 0%</td>
<td>21% 43%</td>
<td>50% 53%</td>
<td>26% 4%</td>
<td>3% 0%</td>
</tr>
<tr>
<td>2.</td>
<td>0% 2%</td>
<td>0% 9%</td>
<td>15% 34%</td>
<td>38% 48%</td>
<td>47% 7%</td>
</tr>
<tr>
<td>3.</td>
<td>9% 22%</td>
<td>25% 32%</td>
<td>53% 40%</td>
<td>9%  7%</td>
<td>3%  0%</td>
</tr>
<tr>
<td>4.</td>
<td>12% 10%</td>
<td>35% 58%</td>
<td>32% 25%</td>
<td>21% 7%</td>
<td>0%  0%</td>
</tr>
<tr>
<td>5.</td>
<td>6% 10%</td>
<td>20% 15%</td>
<td>53% 53%</td>
<td>18% 11%</td>
<td>3%  1%</td>
</tr>
<tr>
<td>6.</td>
<td>9%  7%</td>
<td>47% 48%</td>
<td>24% 33%</td>
<td>17% 11%</td>
<td>3%  1%</td>
</tr>
<tr>
<td>7.</td>
<td>24% 18%</td>
<td>21% 27%</td>
<td>42% 32%</td>
<td>6%  16%</td>
<td>6%  8%</td>
</tr>
<tr>
<td>8.</td>
<td>3%  10%</td>
<td>32% 35%</td>
<td>44% 51%</td>
<td>21% 4%</td>
<td>0%  0%</td>
</tr>
<tr>
<td>9.</td>
<td>15% 11%</td>
<td>15% 37%</td>
<td>38% 39%</td>
<td>29% 13%</td>
<td>3%  0%</td>
</tr>
<tr>
<td>10.</td>
<td>0%  5%</td>
<td>38% 48%</td>
<td>35% 34%</td>
<td>21% 8%</td>
<td>6%  4%</td>
</tr>
</tbody>
</table>
Continued -

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>3%</td>
<td>2%</td>
<td>52%</td>
<td>56%</td>
<td>3%</td>
</tr>
<tr>
<td>12</td>
<td>0%</td>
<td>2%</td>
<td>6%</td>
<td>18%</td>
<td>65%</td>
</tr>
<tr>
<td>13</td>
<td>0%</td>
<td>1%</td>
<td>15%</td>
<td>12%</td>
<td>41%</td>
</tr>
<tr>
<td>14</td>
<td>0%</td>
<td>2%</td>
<td>29%</td>
<td>14%</td>
<td>65%</td>
</tr>
<tr>
<td>15</td>
<td>3%</td>
<td>2%</td>
<td>18%</td>
<td>7%</td>
<td>73%</td>
</tr>
<tr>
<td>16</td>
<td>9%</td>
<td>7%</td>
<td>12%</td>
<td>30%</td>
<td>73%</td>
</tr>
<tr>
<td>17</td>
<td>6%</td>
<td>5%</td>
<td>15%</td>
<td>19%</td>
<td>50%</td>
</tr>
<tr>
<td>18</td>
<td>9%</td>
<td>4%</td>
<td>21%</td>
<td>27%</td>
<td>64%</td>
</tr>
<tr>
<td>19</td>
<td>0%</td>
<td>1%</td>
<td>6%</td>
<td>5%</td>
<td>53%</td>
</tr>
<tr>
<td>20</td>
<td>6%</td>
<td>10%</td>
<td>27%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>21</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>16%</td>
<td>73%</td>
</tr>
<tr>
<td>22</td>
<td>6%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>61%</td>
</tr>
<tr>
<td>23</td>
<td>9%</td>
<td>2%</td>
<td>21%</td>
<td>18%</td>
<td>36%</td>
</tr>
<tr>
<td>24</td>
<td>9%</td>
<td>20%</td>
<td>41%</td>
<td>56%</td>
<td>23%</td>
</tr>
<tr>
<td>25</td>
<td>6%</td>
<td>0%</td>
<td>19%</td>
<td>16%</td>
<td>66%</td>
</tr>
<tr>
<td>26</td>
<td>6%</td>
<td>2%</td>
<td>35%</td>
<td>42%</td>
<td>35%</td>
</tr>
<tr>
<td>27</td>
<td>3%</td>
<td>1%</td>
<td>41%</td>
<td>29%</td>
<td>21%</td>
</tr>
<tr>
<td>28</td>
<td>0%</td>
<td>5%</td>
<td>12%</td>
<td>8%</td>
<td>38%</td>
</tr>
<tr>
<td>29</td>
<td>0%</td>
<td>2%</td>
<td>27%</td>
<td>33%</td>
<td>21%</td>
</tr>
<tr>
<td>30</td>
<td>9%</td>
<td>15%</td>
<td>18%</td>
<td>8%</td>
<td>42%</td>
</tr>
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<td>2.</td>
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<td>4.</td>
<td>5.</td>
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</tr>
<tr>
<td>31.</td>
<td>0% 1%</td>
<td>12% 11%</td>
<td>59% 74%</td>
<td>26% 13%</td>
<td>3% 0%</td>
</tr>
<tr>
<td>32.</td>
<td>6% 7%</td>
<td>21% 34%</td>
<td>36% 43%</td>
<td>27% 16%</td>
<td>9% 0%</td>
</tr>
<tr>
<td>33.</td>
<td>0% 2%</td>
<td>15% 6%</td>
<td>38% 41%</td>
<td>32% 39%</td>
<td>15% 12%</td>
</tr>
<tr>
<td>34.</td>
<td>12% 10%</td>
<td>41% 63%</td>
<td>35% 24%</td>
<td>9% 3%</td>
<td>3% 0%</td>
</tr>
<tr>
<td>35.</td>
<td>0% 1%</td>
<td>9% 4%</td>
<td>56% 72%</td>
<td>26% 17%</td>
<td>9% 5%</td>
</tr>
<tr>
<td>36.</td>
<td>3% 5%</td>
<td>19% 13%</td>
<td>58% 65%</td>
<td>3% 1%</td>
<td>16% 16%</td>
</tr>
<tr>
<td>37.</td>
<td>0% 0%</td>
<td>18% 19%</td>
<td>47% 47%</td>
<td>29% 34%</td>
<td>6% 0%</td>
</tr>
<tr>
<td>38.</td>
<td>0% 1%</td>
<td>18% 14%</td>
<td>30% 24%</td>
<td>33% 28%</td>
<td>18% 32%</td>
</tr>
<tr>
<td>39.</td>
<td>0% 4%</td>
<td>12% 18%</td>
<td>56% 51%</td>
<td>26% 25%</td>
<td>6% 2%</td>
</tr>
<tr>
<td>40.</td>
<td>0% 1%</td>
<td>18% 16%</td>
<td>62% 51%</td>
<td>20% 32%</td>
<td>0% 0%</td>
</tr>
<tr>
<td>41.</td>
<td>0% 12%</td>
<td>29% 22%</td>
<td>53% 57%</td>
<td>15% 8%</td>
<td>3% 1%</td>
</tr>
</tbody>
</table>
In comparing the percentages of the whole group with those of the group with I. Q.'s above one hundred, the percentages of both groups checked rather closely except in the following instances.

Of the whole group, 19 per cent were extremely slow in speed of thinking, while only 9 per cent of the superior group fell into this category.

Of the total number, 52 per cent frequently became abstracted while only 35 per cent of the superior group were in this class.

Of the whole group, 30 per cent were rated as uninquisitive, and rarely interested, while only in the superior group 15 per cent had this rating.

Of the total number, 45 per cent were slow in action, while 38 per cent of the higher group had this rating.

In the total group, 19 per cent had some physical disabilities, and 29 per cent of the superior group were rated as having some physical handicaps.

In the general group, 10 per cent were rated as slightly effeminate, or somewhat boyish, while 18 per cent of the superior group had this rating.

Of the total group, 12 per cent were sometimes unmannerly and saucy, while only 6 per cent of the superior group were similarly rated.
Of the total number, 61 per cent conformed willingly as the necessity arose, while only 36 per cent of the other group had this rating.

Of the whole number, 11 per cent were quick to accept new customs and methods, and 5 per cent were easily persuaded, flaccid and unstable, while 24 per cent of the superior students were in the first group and 9 per cent in the second.

Of the whole group, 17 per cent never criticized, 51 per cent rarely criticized, and 11 per cent had a critical attitude. In the superior group 9 per cent never criticized, 41 per cent rarely criticized, and 24 per cent had a critical attitude.

Of the whole group, 32 per cent were slow to comply and 31 per cent were generally open minded. In the superior group, 41 per cent were slow to comply, and 21 per cent were generally open minded.

Of the total group, 70 per cent were usually in a good humor, while only 59 per cent of the superior group were rated similarly.

Of the whole group number, 30 per cent were rated as slow in arousal of emotions, while only 21 per cent of the superior group fell in this class.
In the whole group, 56 per cent were generally even-tempered, while in the other group 41 per cent were rated in this category.

Of the total number, 68 per cent were ordinarily friendly and cordial, while only 56 per cent of the superior group had this rating.

Of the total group, 28 per cent were scored as being always straight-forward, while only 18 per cent of the superior group had a similar rating.

In comparing the group having I. Q.'s of 100 and above with those having I. Q.'s below 100, some important factors were apparent.

As seen in the table, questions 3, 4, 8 and 9 show up the difference in the mental activity of the two groups as evidenced in their school situation. Question 3 shifts the mode definitely to the sluggish side in thinking for the group having I. Q.'s below 100. In the same way, question 4 shows this same group much more abstracted.

Question 8 shows the teachers' estimate of this below normal group as decidedly more lethargic and mentally lazy than the above normal group. Question 9 brings out the factor of curiosity and interest which the teachers feel the below normal group evidenced to
a smaller degree. In the question of persistence, the distribution seems to be approximately the same for both groups. This similarity of distribution is also shown in regard to careful or slovenly thinking.

Question 7 shows the below normal group as much more deliberate and cautious than the superior group.

Although about the same percentage in both groups have average output of energy (35 per cent), the rest of the group below normal show a definite swinging to slower action. The factor of fatiguability shows a normal curve of distribution for both groups. There is little difference in the neatness of appearance in the two groups. More of the superior group make a favorable physical impression than do the below normal group, but the difference in distribution is not at all marked. This is also shown in question 19 regarding personality attractiveness where approximately the same relative percentages hold.

The percentages tend to show that the superior group has more physical handicaps than the below normal group and that the superior group is less able to compete on a physical basis than is the lower group.

Three-fourths of both groups are shown to be average in masculine or feminine characteristics. The superior group shows the more normal heterosexual development.
The distributions of the question of aggressiveness in social relationships seems to be comparable in the two groups, although on the whole the inferior group follows fewer social activities, as shown in question 16. This factor is also shown in question 22 in consideration of assertiveness. On the other hand, the superior group shows a definite preponderance on the talkative side. The inferior group has a slightly more courteous manner.

There is a marked difference in the question of flexibility. The inferior group shows 72 per cent willingly conforming while the superior group shows only 36 per cent. This swing of non-conformity of the superior group shows up in the question of criticalness. The superior group is more critical than the inferior or below normal group. This same tendency also shows up in question 27 as to negativism and suggestibility. The more intelligent group is less suggestible than the inferior group.

According to the results obtained on questions 25 and 26, the inferior group is more courageous than the superior group, when there is a question of physical combat, but emotionally the superior group is more courageous than the inferior group.

Both groups seem to accept authority with practically the same distribution. The superior group has a tendency toward greater impatience and irritation. This is also
borne out in question 32 where we see the emotions of the superior group much more easily aroused. This mood change is also brought out in question 34 where the superior group shows a greater mood swing than the inferior group. Although the inferior group shows a higher percentage of ordinary friendliness, the superior group has a larger percentage on the sympathetic and affectionate side.

On the question of trustfulness and straightforwardness there is similar distribution in both groups. In the matter of social acceptability, the two groups are almost even in distribution.

There is little difference in the two groups in legibility in handwriting, skill in physical games, and handcraft.
The general conclusion based on this study is that according to the teacher's ratings, the social adjustment in school of these students retarded in reading ability shows no outstanding difference from that of a group without this handicap.

The questions on physical factors yield some significant findings.

In speed of movement, 48 per cent were below the average; 16 per cent were above. Only 12 per cent stood out in handicraft.

Of the whole group, 49 per cent were extremely sluggish in the physical output of energy while only 17 per cent were more active than the average. As a whole, the physical reactions were on the slow side of the scale. In comparing the physical and emotional reactions, there was a definite alignment between these two factors.

The emotional reactions are on the lethargic side of the scale. A tendency toward self-absorption was shown. The group as a whole was fairly indifferent.
Regarding indifference, 42 per cent were rated as indifferent, while only 1 per cent have a consuming interest in everything. Fifty-five per cent find sustained attention difficult. The majority of the group were found to be docile. In the matter of acceptance of authority, 24 per cent were entirely resigned, and accept all authority; 28 per cent comply by habit; and only 13 per cent defy authority.

Only 2 per cent are really negativistic, while 34 per cent are quite suggestible.

Other outstanding factors are that 13 per cent are very submissive in the face of frustrations; 68 per cent rarely criticize; 30 per cent are considered almost apathetic; 65 per cent are even-tempered; while only 6 per cent show frequent mood changes; and only 11 per cent could be considered worriers.

In general the percentages for the whole group were about the same as for the group with I. Q.'s of 100 and above. The superior group rated higher than the whole number studied on such things as speed in thinking, in being less abstracted, more alert mentally, and inquisitiveness.
In comparing the group having I. Q.'s of 100 or above with those having I. Q.'s below 100, it seemed to be true that the inferior group was slower in speed of thinking, alertness, and inquisitiveness than the superior group. The inferior group appeared to be more docile than the superior group, conforming to society, being less critical and more submissive in the face of authority. Both groups, however, were, for the most part, acceptable to society and showed no great tendency toward maladjustment. Although there were some extreme cases, these were too few to make any great difference in the conclusions drawn from the group as a whole.

From the results obtained, it appears that the reading disabilities were not due as much to social maladjustment as to low mentality in the inferior group and perhaps to poor methods of teaching or to faulty training in reading habits in both the superior and inferior groups. If any valid deductions may be drawn from so few cases, it seems that the remedy for reading difficulties lies in remedial training of those students having this special disability. Working on this assumption, it may be said that in the majority of reading disability cases, the social worker would find it satisfactory to refer these cases to children's clinics in which remedial
training in reading is given. The increasing number of these cases has made it necessary for children's clinics to consider remedial work and training in study habits a vital part of their therapeutic activities.

The necessity for correcting reading defects is easily seen. Although emotional or social adjustment does not necessarily cause the special disability, the resulting effect of allowing such defects to persist may be maladjustment to community life. As the child progresses in school, a reading disability causes him to be slower in absorbing material read silently. This slowness may result in feelings of inferiority because he cannot compete with the majority of his fellow pupils. If the defect persists through college, the child finds himself particularly handicapped, and it is possible that he will be unable to read all of the material assigned and must necessarily read so slowly that a portion of what he has read is lost in his anxiety to "catch-up" with the other students.

In the case of the child who does not finish high school or go to college, reading defects prevent his future development in literary and academic lines and also may prejudice him against reading any sort of newspaper or periodical thoroughly. This would mean that he
would have to rely largely on the spoken word. In a time when things are changing rapidly in the social order, it is necessary that laborers as well as the "white-collar" class be able to read sufficiently well in order to know what is taking place. The social implications of studies in reading disabilities are far-reaching and the importance of the correction of this defect should not be minimized.

If the social case worker has as her aim the adjustment of the client to his community, the problem of reading defects, particularly in the cases of children, should receive attention.
Graphic Rating of __________________________  Date ________________
By __________________________________________

INSTRUCTIONS FOR USING THE RATING SCALE

1. If you are rating a child, try to make your ratings by comparing him with children in your class.

2. Let these ratings represent your own judgments. Please do not consult anyone in making them.

3. In rating this person on a particular trait disregard every other trait but that one. Many ratings are rendered valueless because the rater allows himself to be influenced by a general favorable or unfavorable impression he has formed of the person.

4. When you have satisfied yourself on the standing of this person in the trait on which you are rating him, indicate your rating by placing a check (x) on the line just where you think it ought to be. (It is desirable to use a pencil in making the check (x) mark. This will permit you to make corrections if you find it necessary.)

5. The masculine pronoun (he) has been used throughout for convenience. It applies whether the person you are rating is male or female.

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This information is strictly confidential. It is not the purpose of this questionnaire to find individual ratings as such but only insofar as group statistics may be obtained from them.

---

1. How intelligent is he?

<table>
<thead>
<tr>
<th>Feebleminded</th>
<th>Dull</th>
<th>Equal of average</th>
<th>Bright</th>
<th>Brilliant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>child on street</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. What is your opinion of his ability to advance in school?

| Limited to 3rd grade | Limited to 5th grade | Limited to 8th grade | Could graduate from high school |

3. Is he slow or quick in thinking?

| Extremely slow | Sluggish, plodding ordinary speed. | Agile, rapid speed. |

4. Is he abstracted or wide awake?

| Constantly absorbed in himself | Frequently abstracted minded | Usually awake and alert |

5. Is he slovenly or careful in his thinking?

| Very slovenly and illogical | Inexact, a dabbler | Moderately careful and logical |

6. Is his attention sustained?

| Distracted: jumps rapidly from one thing to another | Difficult to keep at task until completed | Attends inadequately does | Is absorbed in what he holds attention for long periods | Able to
7. Does he act impulsively or cautiously?

<table>
<thead>
<tr>
<th>Impulsive,</th>
<th>Frequently acts</th>
<th>Acts</th>
<th>Deliberate</th>
<th>Very cautious and calculating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsively</td>
<td>unreflecting</td>
<td>reasonable</td>
<td>care</td>
<td></td>
</tr>
<tr>
<td>bolts, acts</td>
<td>on the spur</td>
<td>and imprudent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of the</td>
<td>moment.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Is he mentally lazy or active?

<table>
<thead>
<tr>
<th>Extremely Lethargic</th>
<th>Is Ordinarily Lazy</th>
<th>Eager</th>
<th>Shows Hyperactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>lazy and inert.</td>
<td>idles along active</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Is he indifferent or does he take interest in things?

<table>
<thead>
<tr>
<th>Is indifferent, uninterested</th>
<th>Uninquisitive rarely interested</th>
<th>Displays usual curiosity and interest</th>
<th>Interests are easily aroused</th>
<th>Has consuming interest in most everything</th>
</tr>
</thead>
</table>

10. What is his physical output of energy?

<table>
<thead>
<tr>
<th>Extremely Slow in action</th>
<th>Moves with required speed</th>
<th>Energetic, vivacious</th>
<th>Overactive, Hyperkinetic, meddlesome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sluggish</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Is he easily fatigued?

<table>
<thead>
<tr>
<th>Shows quick exhaustion</th>
<th>Does not have ordinary endurance</th>
<th>Endures rare shows fatigue</th>
<th>Unusually vigorous and robust</th>
</tr>
</thead>
</table>
12. Is he slovenly or neat in personal appearance?

<table>
<thead>
<tr>
<th>Unkempt</th>
<th>Rather Inconspicuous</th>
<th>Fastidious</th>
</tr>
</thead>
<tbody>
<tr>
<td>very</td>
<td>negligent</td>
<td></td>
</tr>
<tr>
<td>slovenly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. How does he impress people with his physique and bearing?

<table>
<thead>
<tr>
<th>Reputive</th>
<th>Makes an unfavorable impression</th>
<th>Excited admiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>generally unnoticed physique and impression</td>
<td>Makes a favorable impression</td>
<td></td>
</tr>
</tbody>
</table>

14. Can he compete with others on a physical basis?

<table>
<thead>
<tr>
<th>Weak and handicapped</th>
<th>Has some physical difficulties</th>
<th>Can hold his own</th>
<th>Is Stronger than most</th>
<th>Has exceptional strength</th>
</tr>
</thead>
</table>

15. How does he impress you with regard to masculine or feminine traits? (NOTE: If subject is male, rate on first line; if female, use second line).

<table>
<thead>
<tr>
<th>Is a &quot;sissy&quot;</th>
<th>Slightly Effeminate</th>
<th>Has average boy qualities</th>
<th>Very Masculine line</th>
<th>Entirely masculine &quot;a buck&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;A Tomboy&quot;</td>
<td>Somewhat boyish</td>
<td>Has average girl qualities</td>
<td>Quite &quot;A coquette&quot;</td>
<td>&quot;A clinging nine wine.&quot;</td>
</tr>
</tbody>
</table>
16. To what extent does he associate with members of the opposite sex?

| Avoids them | Associates infrequently with them | Shows interest in them | Gives time to them | Associates almost exclusively with them |

17. Is he shy or bold in social relationships?

| Painfully Timid Self-conscious frequent-ly (em-) barrassed occasions | Self-conf-ident in himself | Bold, insensitive to social feelings |

18. What are his social habits?

| Lives few almost entirely social to himself | Follows usual social activities | Pursues social activities and customs | Actively seeks social pleasures | Prefers social activities to all else |

19. Is his personality attractive?

| Repulsive Disagreeable | Unnoticed colorless | Colorful Magnetic |

20. Is he quiet or talkative?

| Speaks very quiet | Mostly of talk | Upholds his end of talk | Talks more than his share | Chatters |
21. Is he rude or courteous?

| Rude, insulting, insolent | Sometimes unmannery, saucy | Observes general conventions of civility and respect | Courteous | Over-courteous |

22. Does he give in to others or does he assert himself?

| Never asserts self, servile | Generally yields | Holds his own yields when necessary | Assertive | Insistent obstinate |

23. How flexible is he?

| Stubborn, hide-bound, non-conformist | Slow to accept new customs and methods | Conforms willingly as necessity arises | Quick to accept new customs and methods | Easily persuaded, flaccid, unstable |

24. What tendency has he to criticize others?

| Never criticizes | Rarely criticizes | Comments on outstanding weaknesses and faults | Has a critical attitude | Extremely critical | Rarely approves |

25. Does he lack nerve, or is he courageous?

| White-livered, fearful feet. | Gets "Cold" will take reasonable chances | Resolute | Dare-Devil |
26. Is he easily discouraged or persistent?

| Melts before slight obstacles or objections | Gives up before adequate obstacles or objections | Gives everything a fair trial | Persists until convinced of mistakes | Never gives in obstinate

27. Is he negative or suggestible?

| Negative, contrary to suggestions | Complies slowly | Is generally open-minded | Rather easily persuaded. | Follows any suggestions

28. How does he accept authority?

| Defiant of authority | Critical obedient | Ordinarily obedient | Respectful, complies by habit | Entirely resigned, accepts all authority

29. How does he react to examinations or to discussion of himself or his problems?

| Flat volunteer refusal nothing. Must be cooperative pumped | Conservatives quite willing to cooperate | Entirely uninhibited, spills everything, enjoys it. |
30. How does he react to frustrations or to unpleasant situations?

<table>
<thead>
<tr>
<th>Very submissive</th>
<th>Tolerant, rarely blows up</th>
<th>Generally self-controlled</th>
<th>Impatient</th>
<th>Easily irritated, hot-headed</th>
<th>Explosive</th>
</tr>
</thead>
</table>

31. Is he generally depressed or cheerful?

<table>
<thead>
<tr>
<th>Dejected, Melancholic, dispirited</th>
<th>Generally in the dumps</th>
<th>Usually in good humor</th>
<th>Cheerful</th>
<th>Hilarious</th>
</tr>
</thead>
</table>

32. Is he emotionally calm or excitable?

<table>
<thead>
<tr>
<th>No emotional response, apathetic</th>
<th>Emotions are slowly aroused</th>
<th>Responds quite normally</th>
<th>Is easily aroused</th>
<th>Extremely reactional, hysterical, high-strung</th>
</tr>
</thead>
</table>

33. Does he worry or is he easy-going?

<table>
<thead>
<tr>
<th>Constantly worrying about something, has many anxieties</th>
<th>Apprehensive, often worries unduly</th>
<th>Does not worry with-out cause</th>
<th>Easy-going free, never worries</th>
<th>Entirely care-free, light-hearted</th>
</tr>
</thead>
</table>

34. Is he even-tempered or moody?

<table>
<thead>
<tr>
<th>Stolid, Rare changes of mood</th>
<th>Generally even tempered</th>
<th>Is happy or depressed as conditions warrant</th>
<th>Strong and frequent changes of mood</th>
<th>Has periods of extreme depression or elation</th>
</tr>
</thead>
</table>
35. Is he sympathetic?

| Inimical, Aggravating, cruel | Unsympathetic, Disobliging, cold | Ordinarily friendly and cordial | Sympathetic warm hearted | Very affectionate |

36. Is he suspicious or trustful?

| Very suspicious, distrustful | Has to be assured | Generally unsuspicious and trustful | Somewhat gullible | Accepts everything without question |

37. Is his behavior (honesty, morals, etc.) generally acceptable to ordinary social standards?

| Unacceptable, extreme violations | Occasionally acceptable violations | Ordinarily acceptable | Always acceptable | Bends backwards | Very rigid standards |

38. Is he sly or straight-forward?

| Extremely sly and secretive | Frequently sly and secretive | Secretive or straight-forward depending upon the situation | Almost never sly or secretive | Always straight-forward |

39. Is his handwriting illegible or legible?

| Extremely illegible, No coordination of small muscles involved | Barely legible very little coordination of small muscles involved | Average legibility in comparison of others his age | Very legible | Extremely legible, Much better coordination of small muscles than average |
40. Is he poor or skilled in the playing of physical games?

| Extremely poor | Clumsy, but has slight big muscle coordination | Average in control of big muscles | Very good in playing games skilled

41. Is he poor or skilled in handcraft?

| Very poor | Slight progress | Average progress | Skilled | Very Proficient

Please answer the following questions as briefly as possible.

1. Does this pupil use his left hand with equal or greater strength or dexterity than this right?

2. Does he have a noticeable speech defect such as hesitating, stammering, lisping, etc.?

3. Please comment on the following overt forms of behavior if manifested in this pupil:

   (a) Lying
   (b) Cheating
   (c) Stealing
   (d) Masturbation
   (e) Heterosexual activity
   (f) Others:

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

   ____________________________________________________________
BIBLIOGRAPHY


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