

A PSYCHOLOGICAL AND
PHONiatric ANALYSIS OF A
PROCTOLOGICAL SUBJECT

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PROCTOLOGICAL SUBJECT

By

Dorothy Frances Barnes Pock

Bachelor of Science

Oklahoma Agricultural and Mechanical College

1925

Submitted to the Department of Psychology
Oklahoma Agricultural and Mechanical College

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

1944

JAN 29 1946

APPROVED BY:

Charles H. Voelker

Chairman, Thesis Committee

A. L. Reed

Head of the Department of
Psychology

J. P. M. Norman

Visual Education Department
and Member of Thesis Committee

H. Conger

Dean of the Education School

D. C. McIntosh

Dean of the Graduate School

167435

GRATEFUL ACKNOWLEDGEMENT IS MADE TO:

Mr. Charles H. Voelker, who has assisted me in analyzing the speech problem and directed the writing of the thesis.

Dr. S. L. Reed, for his direction of my readings in psychology.

Dr. K. R. Barnum, for his untiring medical help for six years and eight months; and for his encouragement and inspiration to work on the proctological problem.

Dr. J. C. Muerman, without whose help it would have been impossible to conduct a visual education program.

Dr. N. Conger, under whose direction I studied vocational guidance.

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PREFACE

This study attempts to discover the best methods of helping a proctological subject with delayed speech. Furthermore deliberate effort was made to plan a curriculum and wholesome life activities which would help the individual develop into a well organized whole (Gestalt idea of psychology).

This study suggests that procedures used in planning the whole life activities should include a well rounded program of development including physical fitness, education, social activities, vocational guidance and psychological service.

When delayed speech pupils are given a chance they can sometimes make real gains. That a positive optimistic attitude must be had by patient, parents, teachers and doctors.

In general, this study supports the belief that more can be done for the retarded child with delayed speech both at home and at school, and supports the motto: "For every child an education."

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Part I

Chapter 1 Medical History

PROCTOLOGICAL COURSE

"Somebody said that it couldn't be done,
But he with a chuckle replied
That "maybe it couldn't," but he would be one
Who wouldn't say so till he'd tried"!

It was in the spirit of the above poem by Edgar A. Guest, that eleven years ago as a mother - teacher I started to work on my boy. He was fourteen months old. When his bowels moved, his rectum prolapsed, and obviously medical attention was needed. And I am here concerned with what might be the behavioral implications of a condition taking eleven years and two months to correct.

My problem and study of proctology began when the subject about whom I am writing was two and one-half months old. I was not able to get his normal bowel movements by the use of orange or tomato juice in his diet, and to solve the problem of constipation I used what was advertized as harmless "infant glycerine suppositories." I suppose that the use of and use, or perhaps the over use of them is directly related to this relax of the rectae muscles and prolapsus. He had been trained to the nursery stool and when first noticed after an evacuation, his bowel was protruding about half an inch. Later on it protruded an inch and a half. The condition got to the place where (if the diet was not carefully regulated) the bowel protruded when he stood or walked.

The first evening when the condition was discovered, I called a specialist to see what I should do. He suggested that I not try to re-insert the bowel but bring the boy to his office the next

morning. He pushed the bowel in by pushing and squeezing on the hips and I had to learn how to do this so that I could take care of him at home. This had to be done until the boy was seven years of age.

Louis Fischer, M. D., in writing about "Diseases of Infancy and Childhood" wrote:

"The daily use of an enema should be condemned. While the enema will produce an evacuation by softening the fecal masses, the warm water relaxes the muscles of the intestines and if persisted in will induce an atony of the intestines, with a tendency to prolapse."¹

Frank C. Yeomans, M.D., a proctologist, writes:

"Prolapsus is an abnormal descent into the rectum or protrusion through the anus of one or more coats of the rectum or sigmoid."

"Prolapse as an inclusive term indicates any form or degree of descent of the bowel. When the mucous membrane alone descends, the prolapse is partial or incomplete; when all tunics of the bowel are involved, the prolapse is complete."²

My boy or patient as I will call him had a complete prolapse, as all tunics of the bowel were involved.*

"The usual exciting cause of prolapse in children is any condition that produces a straining effort at stool and rectal tenesmus as constipation."³

"Glycerin should not be used regularly as it tends to lessen the sensitivity of the rectal mucosa."⁴

¹ Louis Fischer, M. D., Diseases of Infancy and Childhood, p. 307.

² Frank C. Yeomans, Proctology, p. 378.

*This diagnosis is also verified in a letter written by Dr. K. R. Barnum, September 28, 1943 to Mrs. George Pock.

³ Ibid., p. 378.

⁴ Ibid., p. 132.

Habitual constipation is the rule in the beginning of prolapsus.^{5,6}

This was the beginning of my problem. To start with, we went to what we considered the best doctors, only to find after four and one half years of treatment the condition had grown worse instead of better, although we had the patient under constant medical care. It was then I learned of the Thornton and Minor Rectum Clinic in Kansas City; and we went there when the patient was five years, eight months old. The physicians in charge of the patient were Dr. Kenneth R. Barnum, Dr. A. J. Marris and Dr. H. F. White. They assured me that in time they could correct the prolapsus (and they did). Under the direction of Dr. Barnum I gave medicine (even as often as sixteen times per day) and followed his regimen and am happy to report that after five years and seven months under his care the prolapsus was pronounced by him to be corrected in July, 1943. Along with other treatment, Dr. Barnum had the patient to have all bowel movements lying down; this also is in accord with Yeomans.⁷

So after working on the medical side of my problem for eleven years and three months, the prolapsus was corrected. The following month, August 1943, my patient went to Boy Scout Camp for a whole week, took care of his own elimination as other boys and had no trouble.

⁵ Ibid., p. 378.

⁶ Fischer, Op. cit., p. 307.

⁷ Yeomans, Op. cit., p. 378.

**KENNETH R. BARNUM,
M.D.**

Dr. Barnum is a native of Lycoming County, Pennsylvania, where he was born on a farm. He was only one year old when his father passed away, but his widowed mother kept her large family together. After working his way through school, Dr. Barnum was graduated from Hahnemann Medical College in Philadelphia in 1908, and interned at West Jersey Hospital. During more than 30 years in the middle West, he has been an outstanding specialist with wide, successful experience in the treatment of rectal disorders.



Medical Staff
of the
Thornton & Minor
Clinic

The purpose of this thesis is to describe a patient with prolapse of the rectum in regard to two factors: the psychological and the phoniatic. It must not be construed that a clear cause and effect relation can be demonstrated. Merely, this is one of several aspects of the history of what has proved to be a difficult educational problem. How much procto-pathology can influence behavior must be left to psychologists to say. That there is a relation, seems to be a stated opinion. Also I leave to the psychologist to define just how psychoneurotic is this so-called nervousness that will be mentioned or whether this should actually be a member of a "nervous" syndrome.

ADENOIDECTOMY

At fourteen months of age when prolapsus occurred, our family physician noticed while examining the patient that he had enlarged tonsils and adenoids; but recommended that they not be removed before five years of age. The doctor explained this recommendation as having been made because in relation to the rectum trouble it might make too much of a nerve strain if we tried to correct more than one thing at a time. At the age of five years, when the surgeon removed the tonsils and adenoids, he remarked that he had never seen such large tonsils and adenoids, that it was a wonder that the child could even breathe let alone speak. He attributed the hypertrophy, in the first place to chronic colds.

There seems to be every reason for me to believe that this adenoid enlargement, existing over four years, is definitely related to the phoniatic problem. In other words, this delay must have been bad for speech. Now in what way, it is most difficult to

delimit, but there are breathing patterns, if you like, there are voice "forcings" which even now resemble speakers with enlarged adenoids, except that the voice is loud. (This may be the result of forcing; first, forcing air through restricted breathing passages, and now when they are open, the voice is loud in that the forcing remains and the muffling is absent). It can certainly be suggested that an in-activity of the velum⁸ could be a natural result. It will be noted below just how this affected his speech. And it has been said,

"There may be a functional debility of the palatal muscles consequent upon adenoidectomy."⁹

"After every operation for removal of adenoids and tonsils the patient should have a course of breathing exercises and speech exercises. Nasal breathing is thus re-established, respiration is rendered normal, the palate regains its lost function, vocal resonance is restored and correct articulation is taught."¹⁰

The corrective methods used for inactive palate appear later.

It is believed that the patient's speech problem is something more than merely velar insufficiency and respiratory habits developed during a delay in surgical relief for enlarged adenoids. Certain aspects may be proctological (asthma, etc.) other aspects may be related to the social milieu of patient (treated as peculiar etc.) other aspects might be attributed to unforeseen results of

⁸ George Seth, Ph. D., and Douglas Guthrie, M. D., Speech in Childhood Its Development and Disorders, p. 168.

⁹ Robert Curry, The Mechanism of the Human Voice, p. 172.

¹⁰ George Seth, Ph. D., and Douglas Guthrie, M.D., Op. cit., p. 169.

good teaching, or to bad teaching or to lack of teaching, or on the patient's part to some behavioral fault or other.

It is known that "illness may cause speech defect."¹¹ And in this case there was an illness, in fact, an illness that has "nervous" implications. The behavioral manifestations of enteric irritability are manifold. And a "nervousness" is frequently manifested in a retarded speech development.¹² But in addition here, there was a teaching factor which contributed.

Because of the existing medical conditions I did not try to push a speech program, for I did not want to be doing too many things at once and my study of this problem has convinced me that doing this was an error. Seth and Guthrie write:

"Do not delay training until a child is five years old. The age of three years, while the speech of the child is undergoing its normal development appears to us to be the suitable age to begin training."¹³

Stinchfield and Young set the beginning of speech development as early as the ninth month. They write:

"We have found that children develop speech most normally when given encouragement and direction at the age when the speech readiness first begins to be apparent with the attempt to name objects or to designate them in words. This is close upon the end of the first year in the average child, but may appear as early as the ninth month in precocious children, and is likely to continue active to about the eighteenth month. With the coming of the second birthday, or around the twenty-fourth month, the most favorable period for

¹¹ M. F. Berry and Jon Eisenson, The Defective In Speech, p. 63.

¹² Ibid., p. 63.

¹³ Seth and Guthrie, Op. cit., p. 169.

speech development may have passed, so that speech subsequently develops much more slowly and with less facility than when it is begun earlier. It is important that parents and nurses should recognize this period of speech readiness, so that the child may be aided in developing the instrument of speech through social contacts, strengthening of motor and sensory impressions, and deepening of the sensibilities through kinesthetic imagery and experience."¹⁴

It was because of the fact that the child in the early emotional period of speech development is immature physically, and mentally and it takes very little to upset the balance of the finely adjusted sensory and motor associative areas which function in speech,¹⁵ that I hesitated to push a speech education program at the same time I was trying to correct the prolapsus.

In addition to the above trouble the patient, at the age of four years fell out of a bungalow window upon his head. He cut his head which required some stiches and a scar may be found on his scalp, parietal region, to verify this report.

Another angle to this problem was created in dental irregularities.¹⁶ When the patient was ten months old he cut his first tooth and his first set of teeth came in very normally, but the second set of teeth were late in coming in and Dr. K. R. Barnum thought that this might have been caused because of his illness. Dr. A. M. Livingood, his dentist, says he believes that dentation of the second set of teeth is four years late because of illness.

¹⁴ Sara M. Stinchfield and Edna Hill Young, Children with Delayed or Defective Speech, p. 18.

¹⁵ Ibid., p. 15.

¹⁶ Seth and Guthrie, Op. cit., p. 159.

Just now are teeth beginning to come in at the age of twelve, that usually come in around eight years.

When the patient was nine years of age we had a complete physical examination made at the Mayo Clinic at Rochester, Minnesota. There they found by X-ray two complete sets of teeth, the second set well formed but the first set had not loosened. I asked them if they recommended removal of first set of teeth and they said that there were two schools of thought: one yes, the other no. Mayo's recommended that our local dentist watch the case and make recommendations for removal. This suggestion we followed.

The coming in of the first teeth was so painful that the patient formed the habit of sucking on his arm, this may have caused a protruding jaw, which in turn causes a waste or leakage of air in sibilent production ¹⁷ because of the dental irregularities. Certainly his peculiar habit of interfering with phonetic articulation with his lower lip must go back to this arm sucking habit. It will be noted below how many times this interfered visually and even auditorily with correct speech.

He has now one crooked tooth, which I am hoping to be able to correct by the use of wooden paddles. The dentist described this condition as an integral part of the delayed dentition.

Dr. A. J. Marris at the Thornton and Minor Clinic thought that part of the prolapsus trouble was caused by the slow ossification of the end of the spinal column which curves up and helps to support the rectum. At the age of nine years the doctor observed that the

¹⁷ Ibid., pp.157-159.

normal curve of the bone had grown into the right position. The treatment had been calcium therapy.

Berry and Eisenson write that slow ossification of bones sometimes delay speech development:

"Ossification of bones often is far behind schedule the physical development suddenly may spurt forward and speech development, likewise, is accelerated. These children evidently are not ready, physically and neurologically for the development of speech in the usual chronological period, 18 months to 24 months."¹⁸

Because of the condition of the patient's tonsils and adenoids, which the surgeon said were full of puss, cold and pneumonia were both experienced several times, before the adenoidectomy.

"Illness attended by a high fever in infancy, especially during the normal period of speech development may not have shown its effect immediately. Pneumonia and whooping cough interfere with speech development sometimes."¹⁹

Thus in view of the above medical opinions I would say that his speech problem could be traced to a number of possible causes or combination of them all. My problem was to solve them the best I could.

We had an examination made by a gland specialist at Oklahoma City and after his examination he wrote "I found no definite evidence of any glandular disturbance."* This report rules out the possibility of the lack of thyroxin²⁰ in his retarded development problem.

¹⁸ Berry and Eisenson, Op. cit., p. 72.

¹⁹ Ibid., p. 71

*Letter written by Dr. Henry H. Turner, Oklahoma City, Oklahoma, August 24, 1939 to Mrs. George E. Pock.

²⁰ Laurance F. Shaffer, The Psychology of Adjustment, p. 328.

Chapter 2 Educational History

"In a justly celebrated speech, Patrick Henry once said: 'It is natural for man to indulge in the illusions of hope.' The book 'Children with Delayed or Defective Speech' contains proof that at least some of our hopes are not built on mere illusions and that the hope of attaining complete normality by children with delayed or defective speech is often justified."²¹

It was my privilege to study speech at Northwestern University School of Speech two summer terms before I began my homemaking. While there I took a course in speech correction with Miss Belle Kennedy, of England. I took the course in order that it might give me information to help me to teach speech better at the Stillwater High School. In this course Miss Kennedy gave us an outline for working with those having delayed speech. It was on this foundation that I began my speech correction program.

She recommended first a complete physical check up and that the patient should be kept physically fit all of his life. Dr. Barnum recommended that as a part of his medical instructions, "see that your son is well nourished".²²

To help me in my study of children's diets, I found the bulletins and charts on foods written by Miss Martha McPheters, Extension Specialist on Foods and Nutrition, Oklahoma A. and M. College, to be very helpful. Whenever I had any questions on foods or diets Miss McPheters was always willing to help. Her daily food

²¹ Dr. Ray K. Immel, Director of School of Speech and Professor of Speech and Psychology of University of Southern California in his foreward to the book "Children with Delayed or Defective Speech" by Stinchfield and Young, Op. cit., p. vii Foreward.

²² Letter written by Dr. K. R. Barnum, January 15, 1937, to Mrs. George E. Peck.

habits chart was a constant daily guide. When we went to the Kansas City Clinic and the Mayo Clinic, I attended the food lectures and I found that they presented the material which Miss McPheters too had used.

Miss Kennedy had outlined that regular meals and regular sleep were important. Dr. Williamina E. Armstrong, Head of Department of Home Economic Research, Oklahoma A. and M., called my attention to a recent article in the American Journal of Diseases of Children,²³ on the importance of proper diet in relation to cleft palate. In commenting on this article, Dr. Armstrong related that diet played a part in a child's speech program, in that it must furnish enough energy for both play and speech.

Playground as Part of Physical Fitness

To help in an outdoor exercise program, we built a home playground unit. We examined the playground equipment at the Oklahoma A. and M. College Nursery School. Miss E. Faith Strayer, who was then Extension Specialist in Child Development and Parent Education, Oklahoma A. and M. College, gave us charts and drawings of home playground units. After consulting both of the above sources, we designed and built a home playground unit, complete with swings and high bars. It included airplane swing, broad swing, ladder swing, swinging bar, flying rings, high bars of different heights, ladder, a large knotted rope into a big native elm tree which made a splendid jungle gym, a teeter-totter, slide, and sand pile were all included

²³ Josef Warkany and Rose C. Nelson and Elizabeth Schaffenberger, "Congenital Malformations induced in Rats by Maternal Nutritional Deficiency," American Journal of Diseases of Children, Vol. 65, No. 6, June 1943, p. 334.

in the playground unit. Miss Strayer visited our home after the unit was completed and she remarked that she considered it one of the best in the State.

Beside the exercise which the children (there are three now) had on the home playground unit, and with their wagons and bicycle, we took family hikes on Saturday and Sunday afternoons. In fact the first seven years of my patient's life, I kept him out of doors all that I could the year around, when the weather was fit. These regular outdoor exercises, which gave him games and things to do by himself, helped him to gain self-confidence.

Every doctor that ever examined my patient always remarked about his well developed physique and sometimes marveled at it when they knew his medical history. I attribute this accomplishment to the well equipped home playground; regular meals, carefully planned; regular sleep, including an afternoon nap having complete privacy for relaxation*; regular exercise and good medical care.

Motor Ability Desired

Playing ball with his two younger brothers and friends, climbing the rope, running and jumping all helped in the development of motor control, which is also useful in a speech program.

Berry and Eisenson stress the importance of motor abilities as follows:

"The motor abilities of the defective in speech are not equal to those of children with normal speech.

"Elements of rhythm, coordination, and strength are necessary to correct performance in these tests.

* This was recommended by Miss Belle Kennedy in her outline.

"Motor efficiency tests include running, jumping, balancing and climbing."²⁴

I planned a swimming program for the cub Scouts, which also included my patient, as I felt that swimming would be of value in teaching motor control and coordination. As a result he is learning to swim quite well for a beginner. His swimming program at Boy Scout Camp was very enjoyable to him.

"The axiom of medical practice namely that we must treat the patient rather than the disease is nowhere more important than it is in speech disorders."²⁵

As a reminder of the importance of a physical fitness program, I keep by my kitchen sink this quotation of Harriet Elliott, of the National Defense Advisory commission:

"We have a job to do, you and I and everyone -- let us make every American stronger, than ever before, sturdier in body, steadier in nerves, surer in living."*

²⁴ Berry and Eisenson, Op. cit., pp. 63-64.

²⁵ Seth and Guthrie, Op. cit., p. 208.

* On a leaflet distributed by the National Defense of the United States of America.

EDUCATIONAL PROGRAM

"Those who believe blindly that something can be done often succeed where more learned heads who know that nothing can be done fail."²⁶

Baby Talk

We did not use baby talk in the home as Miss Kennedy had advised strongly against it.

"Baby language is a very mistaken sign of affection, for it retards the child's progress. The little one can learn to speak well only by hearing many times the common words of our speech well pronounced."²⁷

Visual Education

To help in our speech education program, we made some picture books on heavy paper. On the pages I cut out beautifully colored magazine pictures that would interest a child; pictures of kittens, dogs, children, flowers, good foods, children at play, butterflies, etc; we would look at the picture books and talk about the pictures. By this method I introduced the doing words, i.e.

"What is the cat doing"?

In my reading this summer (1943) I found that this coincides with the experience of Stinchfield and Young,²⁸ and of Berry and Eisenson²⁹ in teaching speech by means of picture books.

A commercial book which helped us in our speech sounds was "My First Animal Book."* This helped to teach us the sounds that

²⁶ Stinchfield and Young, Op. cit. p. viii Foreward by Dr. Ray K. Immel.

²⁷ Walter Ripman, Good Speech, p. 2.

²⁸ Stinchfield and Young, Op. cit., p. 21.

²⁹ Berry and Eisenson, Op. cit., pp. 111-112.

* Published by Rand McNally Company.

the various animals make. Then to make this more real we would walk out through the college farm by the poultry house, and the barns. We would observe at first hand what sounds the animals made and try to imitate them. Imitation of animal sounds is also recommended by Berry and Eisenson,³⁰ and also by Stinchfield and Young.³¹

As we took these walks we would play the game of associative reaction;³² I would ask, "Give the name of the baby of the following: horse, cow, sheep, hog, cat and dog. What do the following give man; bee, cow, sheep, chicken, hog and duck"? These games of associative reaction were not only fun but educational.

A friend of mine, Dr. Catherine Coles, told me of the book "The Mother-Teacher of Religion" which we enjoyed very much. A song in this book, which gave associative reaction, which we enjoyed singing was "A Jolly Ride."³³

³⁰ Berry and Eisenson, Op. cit., p. 94.

³¹ Stinchfield and Young, Op. cit., pp. 20-21.

³² Robert S. Woodworth, Contemporary Schools of Psychology, p. 35.

³³ Anna Freelove Betts, "The Mother-Teacher of Religion," p. 99.

A JOLLY RIDE

Emilie Poulsson

Theresa H. Garrison

with marked rhythm

1.-3. The ba-by goes rid-ing a- way and a- way! Goes rid-ing to

The first system of music features a vocal line in treble clef with a 3/8 time signature and a piano accompaniment in bass clef. The piano part consists of two staves. The vocal line has a melody of eighth and quarter notes. The piano accompaniment features a steady eighth-note bass line and chords in the right hand.

hear what the cat has to say; "Me-ow!"-----Says the cat.....
 hear what the dog has to say; "Bow-wow!"---Says the dog.....
 hear what the cow has to say; "Moo-oo!"-----Says the cow.....

The second system continues the musical piece. The vocal line includes a piano (*P*) dynamic marking. The piano accompaniment continues with similar rhythmic patterns. The lyrics describe the sounds of a cat, a dog, and a cow.

The baby goes riding -- away and away!
Goes riding to hear what the sheep has to say.
"Baa, baa!" says the sheep.

The baby goes riding -- away and away!
Goes riding to hear what the pig has to say.
"Umph, umph!" says the pig.

The baby goes riding -- away and away!
Goes riding to hear what the hen has to say.
"Cluck, cluck!" says the hen.

The baby goes riding -- away and away!
Goes riding to hear what the chicks have to say.
"Peep, peep!" say the chicks.

The baby goes riding -- away and away!
Goes riding to hear what the duck has to say.
"Quack, quack!" says the duck.³⁴

³⁴ Ibid., pp. 99-10

A story which gave associative reaction that we used over and over was "Harry's Good-By." As I read the story I would ask the children to make the animal sounds with me.

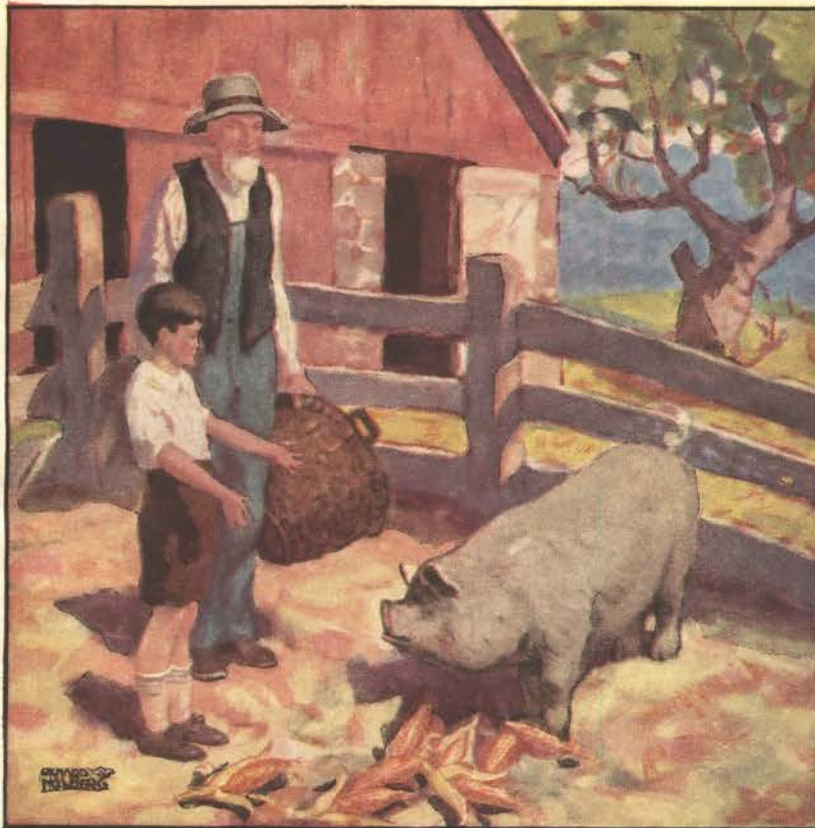
A copy of the story follows:*

BEGINNERS' STORIES

PART 8

July, August, September

NUMBER 94



HARRY'S GOOD-BY

© 1930, Richard A. Holbert

* Published by the Graded Press, Nashville.

A story which gave associative reaction that we used over and over was "Harry's Good-By." As I read the story I would ask the children to make the animal sounds with me.

A copy of the story follows:*

WHY HARRY MADE FRIENDS



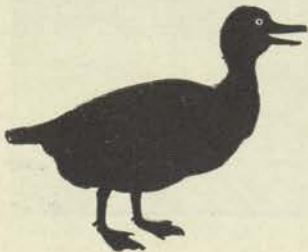
ONCE there was a little boy named Harry, who had lived all summer on his grandfather's farm. The day came for him to go home. Right after breakfast he took his grandfather's hand and walked round the farm and said good-by to everything. Now, I have not told you what kind of little boy he was, have I? And I shall not tell you. But before the story is finished you will know.

First, the little boy went to the barn. "Good-by, Dobbin," he said to Dobbin, the horse. All grandfather heard Dobbin say was, "Ne-e-e-igh! Ne-e-e-igh!" But what he really and truly did say was, "Do-o-n't go aw-a-ay." Harry understood.

Then they went to the cow's stall, and Harry said, "Good-by, Brindle," to Brindle, the cow. All grandfather heard Brindle say was, "Moo! moo! moo!" But what she really and truly did say was, "I'll miss you." Harry understood.



Then they went to the duck pond, and Harry said, "Good-by, ducks." All grandfather heard the ducks say was, "Quack, quack, quack!" But what they really and truly did say was, "Come back! back! back!" Harry understood.



Then they went to the hen yard, and Harry said, "Good-by, hens and roosters." All grandfather heard the hens and roosters say was, "Cluck, cluck, Cockadoodledoo!" but what they really and truly did say was, "Bad luck, to lose you!" Harry understood.

Then they went to the pigpen, and Harry said, "Good-by, Rooter," to Rooter, the pig. All grandfather heard



Rooter say was, "Ugh! Ugh! Ugh! Ugh!" But what he really and truly did say was, "Who'll scratch me—who?" Harry understood.

Then they went to the meadow where the sheep fed, and Harry said, "Good-by, sheep." All grandfather heard the sheep say was, "Baa! baa! baa!" But what they really and truly did say was, "Don't go far."

Then they stopped to rest in the woods. And on a tree right over their heads lit a chewink, one of the wood birds Harry loved. "Good-by, Chewink," Harry said. All grandfather heard the bird say was, "Drink-your-te-e-e-ea!" But what he did say was, "O dear me-e-e-e!" Harry understood.

Then they went to the garden to pick a bunch of flowers and grandfather did not hear the flowers say anything, but Harry was sure they said:

"You brought us water every day;
We're glad to make a sweet nosegay."



Then they went to the kitchen, and Harry said, "Good-by, Norah," to Norah, the cook, and Norah gave him a cake with "Harry" spelled on the top in currants.

Last of all, they said good-by to grandmother. Grandmother kissed Harry and told him the kind of little boy he had been all summer. But I shall not tell you what she said, for I think the horse, the cow, and the ducks, and the hens and roosters, and Rooter, the pig, and the sheep, the chewink, and the flowers, and Norah really told. So I know that you know what it was grandmother said.*



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Printed in the United States of America

* From *Beginners' Stories*, No. 76. Copyright, 1910, by Frances Weld Danielson.

Other games of associative reaction are: Where do these come from: beef, mutton, pork, chicken, feathers, lumber, coal, wood and water?

We enjoyed the game of "Give the opposite³⁵ of hot, high, soft, sleep, hard, good, North, South, East, West."

Another game is name a part of: the head, leg, arm, hand, chest, toe, eye, ear. This game not only taught independent thinking, but it taught physiology and speech at the same time.

"When the child begins to apply words meaningfully we know that he not only is learning to talk but is actually expressing ideas."³⁶

Audio - Visual Education and Calvert School Work

Dr. Barnum thought that my patient would recover more quickly from his prolapsus if he did not go to public school for a while, in fact he was nine years old before the doctor thought from a health standpoint he could attend public school.

For the first seven years of my patient's life, I have outlined our program. When he was seven and one-half years of age, I enrolled him in the Calvert Correspondence School, Baltimore, Maryland. We have completed two years of their work and I have sent the registration fee for books and supplies for the third year. I plan to carry on this Calvert School work along with our public school work, putting my most stress and work on the Calvert work at vacation time.

³⁵ Woodworth, Op. cit., p. 35.

³⁶ Stinchfield and Young, Op. cit., p. 5.

In our Calvert work we had some science studies. First I would read the science stories, then I would have my pupil re-tell the story to me. Then if it were possible we would take a field trip, try to find the object or specimen, read the story about it as we watched it. Sometimes when we could choose our subjects for our compositions we would write about our trip.

The books which we used as guides on these trips were "Early Journeys in Science" Book One and Book Two by W. R. Teeters and Clara M. Heising, published by Lippincott Company, Chicago.

We observed the butterfly at work, and found some eggs on a leaf and some caterpillars. We watched the life span of the butterfly at first hand.

In our aquarium we observed a tadpole grow into a frog. We had different kinds of fish, gold fish, cat fish, carp and crayfish and snails.

We put feed out for the birds and as the different birds came, we would read the story about them. Our large native elm tree in the back yard was an asset to us in the study of our birds. Some of the birds we observed at first hand were: sparrow, robin, bluebird, pigeon, flicker, grackle, red-headed woodpecker, blue jay, the downy woodpecker, the wren, the owl and the red bird.

In our study of flowers and trees we would first read the story, look at the pictures of them, the pupil would re-tell the story and then we would go in search of them. Some of the flowers and trees we studied in this manner were: the goldenrod, purple aster, milkweed, the violet, daisy, spring beauty, sycamore tree, dandelion, sunflower,

thistle, maple tree and the evergreen tree.

When it was raining or snowing we would read the science stories about them. At first hand we observed the type of clouds. After the rain we would look for the rainbow; as we looked at the rainbow, I would read the science story about the rainbow and then tell the Bible story about the first rainbow.

We used the same methods in studying about our animals found in the zoo; we read about them, looked at their pictures and then went to the zoo. With my science book in hand (we used in addition to the two books mentioned, "The Story of Animals" by Calvert School) we visited the zoo. First we watched the animals, recalled what we could about them; then as we watched them, I would again read the story about them. If we had to write a composition about the animal we would make our rough draft of our composition as we watched the animals. Some of the animals which we studied in this way were as follows: monkey, lion, tiger and leopard, wolf and fox, bear, raccoon, badger, elephant, zebra, camel, giraffe, deer, sheep, goat, hippopotamus, porcupine, sea-lion, kangaroo and opossum, ant eater, snakes, turtle, alligator and crocodile. Some of the birds we observed at the zoo in the same manner were the eagle, hawk, owl, vulture, stork, duck, ostrich and parrot.

We visited the zoo at Oklahoma City, Kansas City, and Rochester, Minnesota. Whenever we made medical trips I also made them an educational trip as well. In travel we sometimes went by steam train, streamline train or bus and by automobile.

To further our study of transportation we visited the airports. One day we spent on a pony ranch riding ponies. Another day we spent

at Yost Lake boating. One day a friend took our family for a sail boat ride on Lake Blackwell.

In fact I tried to enrich our environment so we would have something to talk about. In my medical correspondence which I have kept about his case with Dr. Barnum, I find this written when he was six years old "He is talking more, however not plainly. We have some speech habits to overcome. He is voluntarily putting two to three words together occasionally now."^{*} In six years time, from the time I started my speech program, he was able to re-tell a story, experience and as the common expression goes "talk your arm off."

"Interest is an essential element in effective learning";³⁷ as Dewey expressed it "Discover and capitalize child interests."³⁸ This I always tried to do as we examined the world about us.

As I made my bread at home I told how the farmer sows the wheat seed, harvested it and took it to the mill. In the proper season we went to see these various steps. Then we visited the Stillwater Milling Company and wrote a composition about our trip.

When we sent in our package of Calvert lessons containing this account the teacher wrote back, "I want to compliment you on the two interesting compositions, 'The Flag' and 'My Trip Through the Mill'". I was delighted to hear that 'The Flag' was put on exhibition. I am going to ask Mrs. Rhoads to put these compositions on our bulletin board for a few days. The teachers and children will enjoy reading

* Letter written to Dr. K. R. Barnum, March 29, 1937 by myself.

³⁷ Harry McKown and Alvin B. Roberts, Audio-Visual Aids to Instruction, p. 42.

³⁸ Ibid., p. 20.

them. The spelling test was perfect, and the daily work good."*

We planted seeds in four different kinds of soil and watched the results. We made a seed tester and planted different kinds of vegetables in our small garden plot and learned to tell them by their foliage. We kept a garden record of our expense and harvest.

We watched the bees working in the flowers, read a book about the bees; and at an open house of the School of Agriculture at Oklahoma A. and M. College, one day we got to observe bees at work in a glass hive. We ate honey on home-made bread and talked about how the honey was made.

We played the game of telling foods by taste, by this method learning the taste of salt, sugar, pepper, cinnamon, cloves and vinegar and other foods.

We made a game of feeling and telling things by the way they felt, using such things as pencils, wool, silk, cotton, ice, nuts and fruits.

In teaching history and geography, I used post cards and pictures which I collected to use in my teaching of American History in high school.

In connection with my cub Scout work, Dr. J. C. Muerman, Visual Education Department, Oklahoma A. and M. College showed us films that enriched the experiences of us all. Some of the films shown were: "The Life of George Washington," "The Story of The American Flag,"

* From a letter written for the Calvert School by Mary Bell Waltz, critic teacher to Gordon Pook, September 14, 1942.

"Argentine," "Washington D. C.," "The Grand Canyon," "The Zoo," "The Life of Columbus" and others. We studied about the films before we went to see them and then talked about them when we came home.

Calvert Reading and Art Lessons

To help us in our reading we used a phonetic tape which helped us in pronouncing our words. After reading the story in our reading books the pupil would re-tell the story to me or to his father when he would come home. Some of the books which we have read in our reading assignments are:

"Little Indians" by La Rue

"Alice Adventures in Wonderland" by Carroll

"Pinocchio" by Collodi

"Grimm's Fairy Tales"

"Fifty Famous Stories Retold" by Baldwin

"The Jatakas Tales of India" retold by Babbitt

The above books were read by pupil to me. Some of the books which I read to the pupil were:

"Hurlbut's Story of the Bible"

"How Other Children Live," by Perdue

"Around the World with the Children" by Carpenter.

"Round the Year in Myth and Song" by Holbrook

"Old Greek Stories" by Baldwin

"The Jungle Book" by Kipling

"The King and His Wonderful Castle" by Brown

Needless to say this interest led to reading library books and my pupil has earned several reading certificates from the library.

The Calvert School also furnished us copies of famous paintings which we studied both the picture and artist.

Some of the pictures studied were The Madonna of the Rocks by Leonardo da Vinci, Sistine Madonna by Raphael, Madonna of the Chair by Raphael, Boys With Book by Luca della Robbia, Nurse and Child by Frans Hals, Children of the Shell by Murillo, The Blue Boy by Gainsborough, Feeding Her Birds by Millet.

In fact our Calvert picture study included some of the best of Art of the world. When we were working on this, my pupil told the name and artist of thirty six famous paintings. As we visited in homes and offices he could name the pictures we had studied.

Calvert Poetry Study

In our Calvert work we had to memorize some poems, some of those were as follows: "The Swing," "The Land of Counterpane," "The Wind," "Bed In Summer" and "My Shadow" all by Robert Louis Stevenson. The Poetry Book by Huber, Bruner and Curry, published by Rand McNally, Chicago was also used.

One of the poems we enjoyed most was "The Wind" by Christina G. Rossetti. I used it as an inflection exercise using the suggested method of Avery, Dorsey and Sickles.³⁹ The larger the dot the more the volume. The position indicated the pitch higher or lower. A commalowered inflection, an apostrophe raising inflection.

³⁹ Avery, Dorsey and Sickles, First Principles of Speech Training, p. 224.

Each syllable has a dot.

"THE WIND"

by Christina G. Rossetti

Who has seen the wind?

Neither I nor you;

But when the leaves hang trembling,

The wind is passing through.

Who has seen the wind?

Neither you nor I:

But when the trees bow low their heads,

The wind is passing by.

We read the inflection for the poem as he read the music for his baritone; we both seemed to enjoy it.

The Value of Music

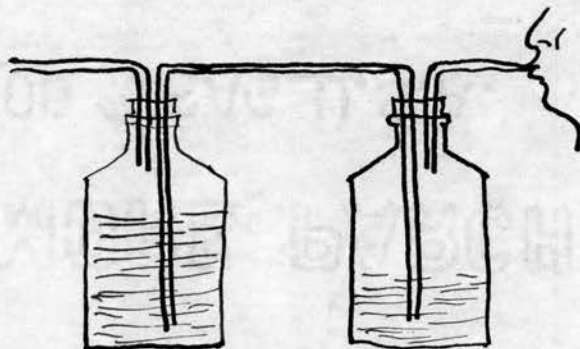
Any one living in Stillwater, Oklahoma has a rare opportunity to hear good music of different kinds and we tried as a family to take advantage of this opportunity. We attended the concerts of the band, orchestra, glee club, choral club and choirs at the Oklahoma A. and M. College. For ten years, my husband played in the college orchestra. The children started attending when they were babies. As soon as my pupil was big enough to point, he would point to the baritone horns and tell me that some day he wanted to play one. A year ago this dream came true and for the experience and chance he has had, I think he is doing fairly well.

To help us in our voice tones we have sung together "Sweet and Low" and "The Slumber Boat."

Speech Laboratory Equipment

To help us to get better breath control, we built a bottle arrangement with the help of Dr. J. A. Burrows, of the Chemistry Department of Oklahoma A. and M. College. The purpose of the equipment was to give exercise to the uvula which had become inactive because of its long inactivity while the patient had tonsils and adenoids.

In the exercise the pupil would blow the water from one bottle to another. This piece of equipment is pictured on page 170 in Seth and Guthrie "Speech in Childhood Its Development and Disorders."



My pupil thought this was lot of fun to work with this equipment. We watched Dr. Burrows bend the glass tube and have arranged a composition on the trip to the Chemistry Department.

I recalled how as a child I enjoyed blowing into a bottle or a shot gun shell so we have both of these in our equipment.

The use of wooden pegs was recommended for the shaping of our lips in O and Wh sounds. We made three sets of pegs; one inch, two inches, and three inches in length; eight dowel pin pegs in a set to use in these exercises. We had the patient round his lips around the peg, then pull out the peg making the sound of ooo for the smallest pegs. When the larger pegs were pulled out the patient would say "O." Then the patient would pull the peg out and blow. Our next practice was on the Wh sounds. We took the words and blew the Wh part and would say the last, some of the practice words were:

| | | | | |
|-------------|------|-------|----|----------|
| (Wh) | ---- | ee | | |
| | -- | en | .. | -- irl |
| (Blow first | -- | at | | -- opper |
| part, then | -- | ere | | -- ay |
| say last | -- | eat | | -- ine |
| part) | -- | ence | | -- ale |
| | -- | ether | | -- eel |
| | -- | ile | | -- ittle |
| | -- | ip | | -- iz |
| | -- | istle | | -- y |
| | -- | it | | |
| | -- | ite | | |

We could see definite results in our clinic work where the work with the rounding of the lips with the pegs carried over into everyday language.

"The music lesson, the poetry lesson, and the lesson in reading aloud must all alike be inspired by the recognition that fine speech is a thing in itself worth while."⁴⁰

Wise Choice of Toys

Mrs. Edyth Thomas Wallace, Home Counselor, Oklahoma Publishing Company, in a W.K.Y. Radio Program December 13, 1941 stated:

"When we think of toys as a means of promoting the wholesome development of children we will exercise more care in our choosing of them."

Miss Virginia Messenger,* and Miss E. Faith Strayer** both stressed in their lectures and bulletins the importance of wise choice of toys.

In a toy making short course which I had the privilege of taking with Miss Messenger, I made all the toys at that time which

⁴⁰ Seth and Guthrie, Op. cit., p. 207.

* Oklahoma A. and M. College Nursery Staff.

** One time Child Specialist, Oklahoma A. and M. College, Extension Division.

she recommended for the well equipped toy shelf. This included the block puzzle, pyramid puzzle, a wooden puzzle of a cat and a duck, peg cart, pounding board.

I made them of orange crates and apple boxes, enameled them different colors, so as to teach the colors at the same time.

As my patient grew older we purchased a tinker toy and an erector set. He will delight himself by the half day with the erector set. From the blue print book he will select the bridge etc. he wishes to make and can now with very little help, select the parts and construct the desired model.

Arithmetic, A Stumbling Block

Arithmetic has been hard for us; part of this may be due to the fact that the two years we were doing Calvert work at home we were doing number work. Then the first year he went to public school they did very little. This stopping and starting has caused us some delay. Adler writes:

"It is known in 'problem children' Arithmetic is often the stumbling block. It is a subject requiring independent thinking and planning. This seems to be in some cases the reason why children who are not accustomed to planning independently their own course but who rather lean on others for support and assistance, have their first difficulty in school in Arithmetic."⁴¹

Shaffer records these observations on Arithmetic:

"Praise is in general a more efficient motivation than is reproof, in spurring elementary school children to accomplishment in arithmetic."⁴²

⁴¹ Alexander Adler, M. D., Guiding Human Misfits, pp. 22-23.

⁴² Shaffer, Op. cit., p. 58.

"While continued praise resulted in improvement throughout the entire period of the experiment. *** A better procedure is to have each pupil compete with his own past record and strive to improve. *** If each student can be made to feel some measure of success, negative attitudes toward school subjects can be avoided."⁴³

I tried the above suggestions and I think they have been of some help to me.

I have had my patient adding up the grocery tickets with me and that seems to have interested him some in the value of learning numbers.

For Every Child an Education

"For every child an education, which, through the discovery and development of his individual abilities, prepares him for life; and through training and vocational guidance prepares him for a living which will yield him the maximum of satisfaction."⁴⁴

This I think is the challenge to all parents and teachers. We should try to develop the individual abilities of the boys and girls we teach. As Dr. Herbert Patterson, Oklahoma A. and M. College once expressed it "Teach boys and girls and not the subject." If we do a good job in teaching the boys and girls, we will get the material in the subject matter taught too.

"It is better to be a light-house than a life boat."⁴⁵

⁴³ Ibid., p. 504.

⁴⁴ Joy Elmer Morgan, "For Every Child an Education," quoting item ten in The Children's Charter, The Journal of the National Education Association (January 1932) p. 1.

⁴⁵ Adler, Op. cit., p. viii preface.

Social Education

Some one has said "Talent is developed in solitude and character in multitude." I felt that, in the problem upon which I am reporting, the necessity of social contact with all people but especially with children of his own age. I could give him his education at home, but he must get his socialization in the public school. Anastasi brings out this point in her book "Differential Psychology."⁴⁶ Stratton is quoted as saying:

"We become human only by active intercourse in a society of those who already have become human."⁴⁷

When my patient was of nursery school age, I felt that such experience as he would get at nursery school would be valuable to him but it was impossible to make such arrangements. This also agrees with Stinchfield and Young.⁴⁸

Public School

He has had three years in the public school and I felt that the social value to him has been worth as much or more than the education received. We can get our education through the Calvert correspondence work, but not our socialization.

Sunday School and Church

To aid in his social education he has been a regular attendant at Sunday School and church from his babyhood. He has looked forward

⁴⁶ Anna Anastasi, Differential Psychology, p. 82.

⁴⁷ Ibid., p. 83.

⁴⁸ Stinchfield and Young, Op. cit., p. 17.

to all church activities and considered himself a part of them. Fortunately, we have had pastors who have been friendly to him and this has been of untold value to him.

I have worked with the children's groups of our church with the L. T. L. and Cub Scouts in order that I might be able to help him in his social education.

Boy Scouts

I began my work with the Cub Scouts because I felt that it gave an opportunity to carry on a valuable educational program. In the space of one and one-half years my patient completed three years of cub work and graduated into Boy Scouting with more achievements passed than any other boy at that time or since, up to now. His cub achievements included: reading of books, drawing the history of the United States flag and writing it. His animal scrap book has been far superior to any prepared. He illustrated it with pictures of the various animals and wrote compositions of the animals. His handicraft included making a tie rack for his father and a towel bar for his mother, using his wood burning set. He made a chair and painted it. For my thread, thimble and scissors he made a duck holder of wood and painted it in cub colors. I have found this to be very useful. Other handicraft included metal tapping, boat making and sailing, and many other achievements too numerous to mention.

For six months he has been a Boy Scout. He started attending scout meetings as soon as he was twelve years old. Scouting is the only thing that he ever was able to start at the right age. He enjoyed his scout camp this summer. In their scout meetings now,

they are studying first aid. Unfortunately one of the brothers of my patient broke his arm October 3, 1943 by falling out of a tree. As soon as we returned from the hospital my Scout got his first aid study book and triangle bandage and showed how a sling should be fixed for a broken arm. He carefully fixed the bandage for his brother correctly.

Vocational Guidance

"In planning an educational program for a given individual or in helping him to choose a vocation, it is of the greatest importance to know his strong and his weak points.

"Total scores on intelligence tests can be used only in a very crude and general sort of educational and vocational guidance."⁴⁹

When my patient was very small, a doctor * friend of mine told me "One of the kindest things you can do for him is to teach him to work." In fact, I think one of the kindest things we can do for any boy or girl is to teach them to work. My opportunities along this line have not been as great as I would like as we have lived in town, not even a place suitable for chickens. I think a small acreage might have offered some additional opportunities, but anyway I have tried to make the most of the opportunities I could offer.

My patient enjoys helping me cook and he can make some things by himself. In time I hope to teach him so he can prepare a dinner by himself. He has prepared breakfast and supper for the family alone and helps me daily with cooking the meals.

He helps with housework every day. He can wash and dry dishes, sweep the floor and make his bed and helps with the family laundry. This past summer he took care of the lawn at home and also took care of a neighbor's lawn. The fact that this neighbor has asked him to care for her lawn next summer indicates that his work was satisfactory.

⁴⁹ Anastasi, Op. cit., pp. 258-259.

* Dr. A. Catherine Coles.

As mentioned before, he earned enough money to buy himself his Boy Scout uniform before he went to camp.

Our small garden has offered an opportunity for some guidance. In our small space we planted some of the common vegetables which we use such as lettuce, radishes, beets, carrots, corn, okra, beans, potatoes, tomatos, etc. My pupil-patient learned to identify the various vegetables by their foliage. He learned by observation and actual experience whether we ate the leaves or the roots of the different vegetables. We made soil tests in different kinds of soil, namely red clay, sand, brown sandy loam and dark sandy loam and compared the plants grown in the different soils. We also experimented with fertilizing of soil and tested which ground produced the best peas, that which had been fertilized or that which had not had nitrogen added. We kept a garden record of our expense and of our harvest and at the end of the season checked our expense with our harvest at local prices and determined how much the garden had added to the food budget, and also which crops had proved the most profitable.

The Cub Scout work and Boy Scout work has offered handicraft experiences that have been worthwhile. One of the best pieces of his cub handicraft was a little chair and in his scout work it has been so far, a leather belt. In all of our work we have tried to keep the cub motto in mind: "Do your best." He did as well as any other cub and needed less instruction at times.

My patient has helped me paint the porch floors and this fall we plan to putty the windows. Next summer (or when the war will permit materials) I plan to have him paint the garage.

In the book "Speech Disorders," Sara M. Stinchfield listed that the handicapped were taught these:

"Training includes domestic service, cafeteria work, commercial work of a mechanical nature, household arts, manual training, vocational activities of various types, sewing and even such work in arts and crafts as are not too difficult for them to understand."⁵⁰

"The problem of vocational guidance is that of assisting an individual who possesses certain assets, liabilities and possibilities to select from these many occupations one that is suited to himself and then to aid him in preparing for it, entering upon and progressing in it."⁵¹

Myers believes that we should ask these key questions in selecting an occupation:

1. Importance of occupation.
2. Nature of work.
3. Working conditions.
4. Personal qualities needed.
5. Preparation needed.
6. Opportunities for advancement.
7. Compensation.
8. Advantages and disadvantages.⁵²

As parents and teachers we need to train our boys and girls to the most of their abilities. "We all must have something to look forward to in the future."⁵³

⁵⁰ Sara M. Stinchfield, Ph. D., Speech Disorders, A Psychological Study of the Various Defects of Speech, p. 102.

⁵¹ George E. Myers, Vocational Guidance, p. 5.

⁵² Ibid., pp. 111-112.

⁵³ Adler, Op. cit., p. 28.

Some Other Psychological Aspects

I have never tried to hold up the idea of the sick child to my patient. In fact we very seldom mentioned the fact. We took our medicine and gave our treatment as just so much of our daily routine as washing our face, eating our meals, etc.

In our poetry study I mentioned that when Robert Louis Stevenson was a little boy that he had to spend much of his time in doors. That he had written many lovely children's poems and when my patient had to stay in bed, we would play the "Land of Counterpane" as told in Stevenson's poem. My patient memorized this poem and would often repeat it when he had to stay in bed.

One day, my mother* came to our home for me to help her in the inflection of her memorizing that part of the Bible that tells about heaven.⁵⁴ My patient was only three years old at the time. When mother said "neither shall there be any more pain"⁵⁵ my patient put his little arms on mine and looked earnestly up into my face and inquired "No pain in Heaven?" and I said "No." "I won't have to take medicine in Heaven?" he eagerly asked.

"No," I replied, "every one is well in heaven, you do not have to take medicine."

He was only three years old but he had been under a doctor's care for almost two years, sometimes taking medicine as many times as twelve

* Ella J. Barnes

⁵⁴ Revelations, Chap. 21 and 22.

⁵⁵ Revelations, Chap. 21:4^b

and fourteen times a day.

I tried to hold up this hope of "Life Eternal" as I felt that such hope would not only have an eternal result, but would also have a psychological as well. William James said "The sovereign cure for worry is religious faith."⁵⁶ Harry Emerson Fosdick writes: "The development of a philosophy of life is of real medical benefit."⁵⁷

When I was teaching in the public High School I would tell my pupils "You can look at a half gallon jar and know that that jar will hold only one half gallon. You can look at a ten gallon jar and know that that jar will hold only ten gallons. But I can not look at you and tell how much you will be able to do or learn. I don't limit your grade by any I.Q. test, but rather by the work you do. The best way to get an A is to get your lesson every day." Many times after I gave my opening class day remarks on the first day of school, I would have pupils come to me and say,

"Miss Barnes, do you mean if I get my lesson every day and do my best and give a perfect recitation, I can get an A?"

"Yes" I would reply, for I taught speech and they had to recite orally.

"Well, I'm going to do that," they would resolve and never once saw I that resolution fail. Mothers would come to me and tell me that that policy had renewed new hope for their child.

I think as educators we sometimes fail to educate because we

⁵⁶ Harry Emerson Fosdick, "On Being a Real Person," p. 243.

⁵⁷ Ibid., p. 256.

are so interested in making an educational test results correct.

We are sometimes too careful about not giving a grade above the child's I.Q. test, even though he is deserving of a better grade; because we are so anxious that the I.Q. test be right.

When we go to teaching boys and girls and not the I.Q. test, we will receive those results worthwhile.

Stinchfield and Young write:

"It is often impossible to assign an intelligence quotient (I.Q.) to a child who has been subject to slow development from birth or to one who is a victim of birth injury or adventitious children's diseases, because such a child can not express himself through the medium of Speech. Such a child may have normal perceptions and a very clear idea of what he wishes to say and yet be unable to communicate his ideas to others. His insight and understanding are very different in quality from those of a child who is mentally deficient and who does not perceive meanings."⁵⁸

I often think of the story of when Thomas A. Edison was sent home from school because the teacher did not consider him worth her time.* His mother, Nancy Elliott Edison, championed his cause and taught him at home. I have often wondered if we would ever have had the Thomas A. Edison, inventor and scientist, if we had not had a Nancy Elliott Edison. Would there have been a brilliant Helen Keller, without a Miss Sullivan? To me these are striking examples of what can be done by sincere and good teaching.

We have to take our boys and girls as "unique human beings";⁵⁹ As Louttit expresses it:

⁵⁸ Stinchfield and Young, Op. cit., p. 6.

* This story is told by Anna Curtis Chandler, Famous Mothers and Their Children, pp. 232-234.

⁵⁹ Shaffer, Op. cit., p. 162.

"The object of any examination method is to secure as complete a picture of the child as is necessary to understand and deal with his problem."⁶⁰

Alfred Adler stressed the belief that:

"A man's life is determined largely by his efforts to compensate or overcompensate for his handicaps in the spheres of work, society and love."⁶¹

"He who would learn must be ready to work hard."⁶²

"Even the woodpecker owes his success to the fact that he uses his head and keeps pecking away until he finishes the job he starts."⁶³

One of the sayings which Fire Chief Ray Pence has had placed above one of the windows at Oklahoma A. and M. College Fire School Station is "The largest room in the world is the room for improvement."

The spirit of optimism must prevail in working with a speech correction problem.

Evaluation of Procedure

The progressive methods of education which have been described in the foregoing pages, I feel, have brought very desirable results. The procedures used have had the advantage of being adapted to the individual. We have not been limited by the four walls of the classroom. This is an "experience" type of education in one of the more positive meanings of the word.

Our games of associative reaction not only gave voice training,

⁶⁰ C. M. Louttit, Clinical Psychology, p. 12.

⁶¹ Adler, Op. cit., p. vii preface.

⁶² Berry and Eisenson, Op. cit., p. 131.

⁶³ Don Hilton, W. K. Y. Radio Broadcast for Local Federal Savings and Loan Association, Oklahoma City, February 11, 1943.

but also helped us build up a vocabulary, as did all of our trips, occupations, and reading and story telling contributed. This is a desirable departure from traditional classroom teaching of vocabulary.

Learning how to do the different things around home and in our Cub Scout achievements all helped to carry on occupational (therapy) training or education.

Mrs. Edyth T. Wallace in a parents' education class said, "Do not compare your child with perfection, but rather consider the point at which you started and compare your gains." With this view in mind, I wish to say the gains have been remarkable and have been accomplished by hard work of mother-teacher who has had friendly cooperation from those who have been in a position to help professionally.

Some Clever Comparisons

As I have worked with my patient, it has been interesting to me from time to time to hear his clever comparisons.

The first spring that he was privileged to attend public school he came home one evening and said, "Mother, I had to run like Mercury to get home, it is raining!" (We had studied about the Greek God, Mercury, in our Calvert work two years before.)

The first day he attended public school (summer session) he came home and remarked, "Mother, the children made fun of me today, but I did just like Noah, I paid no attention to them." (In our Bible story time at home, I had told the story of Noah building the Ark and how people made fun of him, but he had paid no attention to them, but built the ark.)

Another clever comparison, I thought, was made November 17, 1943; at breakfast I called the kitty to come for some milk. As it came it

had its tail sticking straight up and my patient made the following comparison, "The kitty has his tail sticking straight up like a radio aerial."

Chapter 3 "Plus Ultra"

There is a tradition that at one time there was no outlet at the west end of the Mediterranean. The story goes that Hercules broke through the mountain barrier and thus formed the present straits of Gibraltar. The rocky height on either side of the opening was fabled to have been placed there by him as a memorial of his achievement and they were named the Pillars of Hercules. It was once believed that beyond these straits there was nothing. So the ruler of Spain built an archway at this point and above it he wrote the words, "Ne Plus Ultra" meaning beyond this nothing. But Columbus sailed out through the gates and to the west he found America. When Charles V inherited the Crown of Aragon and Castile, with all the vast American possessions, he struck out Ne, leaving the words "Plus Ultra" meaning more beyond."⁶⁴

Although I have studied this particular child for eleven years, I too think there is more beyond to engage my thought in profitable study. Knowledge sometimes stimulates thought⁶⁵ but the right amount of it must be present -- neither too much nor too little.

Social Milieu

By the time my patient is ready to choose a vocation, it is hoped that he can be treated for what he is then, rather than for what early public school tests predicted. Calvert school work has offered a much better educational opportunity, for it has given individual instruction which has brought better academic results than group teaching.

⁶⁴ This is a combination of text of material taken from E. C. Brewer, Dictionary of Phrase and Fable, p. 989 and Harry T. Peck, Harpers Dictionary of Classical Literature and Antiquities, p. 386.

⁶⁵ Edna Heidebreder, Seven Psychologies, p. 8.

Speech

For the identification of consonant and vowel errors in speech we gave the "Diagnostic Sentences."⁶⁶ The results of test showed the various speech sounds which my patient needs to work on for better speech. We plan to work on these for improvement of speech.

The chewing method which is recently advocated by Froeschels⁶⁷ and Svevo⁶⁸ are worth further study, but I have not used them enough to get any definite results from this method.

Whispering exercises⁶⁹ have proved helpful in lowering the pitch of my patient's voice tone. In our study of spelling sometimes it has proved helpful to whisper the spelling of our words. We still have more work to do on this line of study.

Rhythmical gymnastics in combination with music is helpful in speech correction work and so are rhythmical vocal exercises; choral speech will also help in this.⁷⁰

In working with my speech correction patient, I have tried to take the greatest care not to exhaust the patient or to depress him by making him feel his own deficiencies.⁷¹

⁶⁶ Lucille D. Schoolfield, Better Speech and Better Reading, published by Expression Company, Boston, Massachusetts; price \$2 plus six cents postage, 1937, pp. 2-5.

⁶⁷ Emil Froeschels, "Pathology and Therapy of Stuttering." The Nervous Child, (January 1943) Vol. 2, No. 2, pp. 158-160.

⁶⁸ Frederica Schmitz Svevo "Relaxation Therapy of the Embarrassment of Breathing in Asthmatics." New York Physician, Vol. 20, No. 3, April 1943.

⁶⁹ Seth and Guthrie, Op. cit., p. 212.

⁷⁰ Harry Robert Wilson, Lead A Song, p. 93.

⁷¹ Emil Froeschels and Auguste Jellinek, Practice of Voice and Speech Therapy, p. 94.

What ever gains have been made in this project are due to the cooperation and working together of many people. The doctor, the teacher, the church workers, the scout leaders, the speech therapist, the child specialist, the Calvert school, the visual education program and all the members of the home working together.

"Together is the greatest word in the English Language, for it is together we do things."⁷²

Miss Anne Marguerite Dye who was my patient's critic teacher for his first year of Calvert, when she mailed him his promotion certificate wrote, November 29, 1939:

"Your excursions, your specimens, your gardening, and supplementary reading have enriched tremendously the general information lessons. Gordon's horizon's have widened, and you have supplied him with colorful material for his compositions. He will retain the facts because he has studied each subject at first hand."

Considering my patient's gains and assets, I feel like I can say there is more beyond -- "Plus Ultra."

⁷² Anna A. Gordon in an interview with me while I was a speech student at Northwestern School of Speech, Evanston, Illinois, summer 1929.

Part II
APPENDIX 1
TESTED PHONETIC BEHAVIOR

Lucille D. Schoolfield, Department of Speech Correction, Elementary Schools of Washington, D.C.⁷³ has written a book entitled "Better Speech and Better Reading." In her book she gives a "Diagnostic Sentence Test" which you give to the patient. You have the patient repeat the sentences after you and record the way that he repeats the various speech sounds. At the conclusion of the test you look over the test results and form a list of the speech sounds which your particular patient needs to study. They are so arranged so as to cover the various speech sounds needed for good English speech.

Following is the test as given to the patient the summer of 1943:

1. The girl put the paper on top of the table.
 pud öb
2. The boy put the baby in the tub.
 pud
3. The man saw the farmer at the farm. (The speech sounds were given correctly in this sentence).
4. Please put the wheel some where else.
 Puese beal vorf
 (W) a sound where the lips are rounded, a lot of dental sound in it.
5. We are going away on Monday.
 Ve avay Monneigh (Glosso dental and nasal sound).
6. The farmer has a beautiful calf.
 Da hass caf
 kaf
 taff
 Glosso-dental d; ss an unvoiced s.

⁷³ Schoolfield, Op. cit., pp. 2-5.

37. I shall try to go to the country on Monday.
 shall tr + vy duh ton tr + vy Money (tongue protrusion
 on Monday)
38. He has three books for you.
 hass free
39. I saw the policeman near our house.
 duh peassum arss
40. The school basket is by my desk.
 Duh scoo basset iss pie dess
41. I saw the smoke.
 duh moke
42. I like to play in the snow.
 yike pōō + vay duh know
43. Although I spoke in a whisper it made her gasp.
 poken wh + visaper gaps
44. He stayed upstairs in the guest room.
 tayned uptairss duh guess r + voom
45. Swing high, swing low, and over you'll go.
 Swing (correct) you ober
46. When she reads that story she laughs.
 Wh + v see (one time said veeds dat tory yaps
 and the other times
 correct).

N.B. for the remainder of the sentences we have used these additional markings:

○ Sounds all right }
 □ Sounds bad } Both need correction.

47. No one else will be here.
 (W) (S) (W)
 (Sentence sounds all right. Articulation of letters marked
 fit the previous patterns).
48. She saw him only once.
 (Sh) sawnd onny (W)
49. Where are the blue cups?
 de bōō

50. Mary has two new hats.
hass
51. Daddy has two white vests.
hass wh bests
52. Were you away the last two months?
W w (he did not say the) yast mumps
53. Zell came Thursday with the boys.
Z Fursday wip (correct)
54. Look at the spider webs.
duh piders wss
55. He has many friends.
hass ss
56. Where are the other girls?
Wh duh oder ss
57. Did you bring both drums?
F bop ss
58. I play in the house when it rains.
I duh wh r
59. We learned two new songs.
W (yearned) s
(earned)
60. He tore his clothes.
tord hiss kyōss
61. I will show you where Bob lives.
w sow wh yives
62. I shall sit in the sunshine near the bush.
sall sine de bōoysh
63. Father put his car as usual in our garage.
Fader puden hiss cart ūzhül ars gwads
64. The child saw his teacher in church.
De ts sawed hiss ts t ts
Duh sawn
65. Jack has a pigeon in a cage.
ts hass pissum dss

66. Do you like onions?
yike onnings
67. Come and see the monkey in my book.
duh
68. After milking the cow put the milk in the can.
Atter duh duh duh
69. The queen requested the king to see
(correct) q (u) sen (with help can get it) duh
de q (u) essen)
the man.
duh
70. The squirrel is in the cage.
Duh quirrel iss duh
71. All the boys are here except Max.
(the) receipt
(duh)
72. We shall go in the wagon to get the dog.
(sh) duh duh
73. Those are exactly the right flags.
Doss ezacky (r) fvags
74. She was swinging in our swing.
(Sh) (s) (w) (correct) (w)
75. He hid behind the house.
hidden duh
76. He saw a sheep asleep in the field.
sawn sheep aseep duh
sawed seep
77. Did you buy the ring in our city?
Didn't duh (r)
78. The little red hen laid an egg in the nest.
yittle (r) yaid her ness
79. There is the best chair for baby bear.
Deres de bess tear
80. That fat man looks very happy.
Dat yooks berry
81. She cut the bread and buttered it for lunch.
(Sh) cuten duh (r) yunch

82. Her bird was hurt when the cage turned over.
burden wass (wh) duh ober
83. He paid about a dollar for his dog's collar.
pain dodder hiss tollar
koddar
84. He drew a picture of the stool in our room.
drewn pisher tool ars
85. She put the book where he could see it.
[Sh] pudden duh t[wh] tould
de
86. Dan caught all the horses in the cornfield.
caughten de duh
87. Do not drop the hot porridge.
duh porridz
88. How far is your garden from our barn?
iss ars
89. They came on the train the other day.
duh [r] (correct)
90. My child will be five by the time school opens.
[ch] [w] de cool opmss
91. It is so cold I hope you will
(Correct because of phonetic reasons) coal [w]
wear your coat.
[w]
92. How did you get the cat out of the house?
didden (correct) duh
93. The boy soiled his hands with oil.
Duh sôyüled handss wys ôyül (common in children regardless)
94. Hugh has a beautiful tulip.⁷⁴
hass

⁷⁴ Schoolfield, Op. cit., pp. 2-5.

Analysis of Behavior on Diagnostic Sentence Test

Part of his trouble is due to a dental malocclusion and protruding jaw. This is not an abnormally extreme case. Sometimes the words corrected sounded correctly, but the movement was wrong. In correction movement is more important than sound. At times the sounds sound quite correctly.

Persons who make substitutions sometimes make them because they sound all right. The ear controls speech. To him it sounds all right, to a speech therapist it sounds all right too. But these same articulations in other words sound defective. The point is that a similar articulation is enough different to be defective. With him only some of them look defective (we mean particularly in visual sense that s and z look all right). He confuses voiced and unvoiced sounds i.e. d for t (put) and s for z (has). He shifts from voiced to unvoiced too rapidly, i.e. final s; gives pronounced as gifas.

He gives an f for initial th, t or p for final th, and p for medial th. K is slightly unstable; occasionally it comes out as t and most times as k. In pronouncing w the back of the tongue raises as it should and then on rare occasions he rounds his lips and everts them so that the sound comes out correctly. It would be wise to change the rounding so that he rounds straight forward because this pointing up of the lips is associated with the cause of his habitual labio-dental fricative in saying the w. That is to say when the lower lip goes up so high, it is bound at times to approach so closely to the upper teeth that a V like friction becomes more prominent than the W sound. In fact this reaches the extreme of a plosive V. Lip rounding is most

frequently omitted and this act probably is the most important factor leading to the approximation of lip and teeth. He has a habit of sucking the lower lip in and back over his lower teeth.

Wh has the same pattern as a W; there is an additional factor resulting the voicing this sound so that it appears to change from F to V on occasion.

Both W and Wh sound as if they were articulated correctly when the lip teeth approximation is distal.

The L sound is correct in final position. Ay sound in initial position; AV pronunciation using only the back of the tongue and omitting the tip of the tongue and approximating the lower lip and upper teeth in consonants, combinations such as b l but in combinations like f l and c l where the lip movement would naturally not occur this lack of use of the tip of the tongue results in the l sound appearing to be omitted and either an l in final position in the initial syllable; or a d sound in the initial in the final syllable: i.e. little (yittle), dollar (dodder), collar (tollar or koddar).

The final plosives take on four patterns:

- (1) Correct for the great portion.
- (2) For the next largest portion the explosion is directed through the nose, i.e. cutten for cut.
- (3) Implosive only on rare occasions.
- (4) A pronounced shwa on the explosive element on very rare occasions.

The (3) configuration seems to be due to a breath holding habit due to prolapsus condition. His response to a speech situation either: (1) simply holding the breath; (2) starting and finishing speech with glottal stops or (3) a variety of conditions in between such as

sputtering; explosive vocalized pauses; and whispered or fricative panting very much like the wheezing of asthma. This breathing is noisy on both inspiration and expiration, such a type of asthmatic condition is related to the proctological problem.

His l sound tends to be nasalized when it forms the implosive portion of a d sound and the articulation of the d is anticipated through regressive assimilation, i.e. told sounds like toned and through progressive assimilation where the l follows an n, the l is merely another n, if said and otherwise omitted.

Most v sounds are given as true b.

His s is a y lip sound made as a glossal-labial-dental-fricative. The result is a pretty good s auditorially and visionally. This is a strained pronunciation because it would apparently be difficult to accomplish with his prognathism, of course where as it is normal for the mandible to move forward to produce an s, the natural prognathic movement of the mandible would be backwards in order to bring the biting edges of the upper and lower incisors into opposition.

It is supposed that his s is the result of sucking in his lower lip with its attendant of the lowering of the mandible. (This habit may be the result of the infantile habit, he used of sucking on his arm when his teeth were coming in. His gums were quite swollen, nothing would do any good to relieve the pain but the arm pressure on his gums.)

His omission of initial s before a plosive is not baby talk but instead is apparently an asthmatic problem in that the articulation is usually made for the s but the breath necessary to make the s sound is dammed up in a glottial stop.

Final plosive following spirants i.e. ness for nest.

Voiced th initial position appears as d mostly as a plosive th and as a th. The word mother is pronounced monner.

The letter r is pronounced correctly but is frequently distorted through labio-dental-approximation. An exception that has occurred is the pronunciation of the prefix re as de and for unvoiced th.

The sound sh is modified from the s only by assuming the correct tongue position for the sh. The result is an s sounding sh except on those few occasions where he protrudes his upper lip.

Of course in the last instance, the sound is apparently correct to both ear and eye.

Ch has this sh configuration following the plosive and sound either like ts or ch. J likewise is articulated in the same way and occasionally has the additional criticism of being unvoiced.

The diphthong oi is divided into its first element yu or $\hat{o} - \underset{v}{y}u$. It is doubtful that there is the typical childhood difficulty with the oi diphthong.

There seems some reason to suppose that instead this related to the spasmodic intonation of the asthma.

F is all right in initial and final position.

Z has the same configuration as s and almost all the time is unvoiced.

H is all right.

Y is correct.

P is correct.

B is correct. (His pronunciation of bowl as vovo was probably the result of regressive assimilation in the sentence.)

D is correct.

G is correct.

The patient's vowels are not defective except for a lack of lip rounding on the back vowel. The vowel diphthongs are sometimes separated.

Diagnostic Test Words

Schoolfield in her book of "Better Speech and Better Reading" also listed a sight reading test of words. This test is "for the identification of consonant and vowel errors in speech. Note that this test is less complete than that given by the Diagnostic Sentences."⁷⁴ The words which the patient had studied in his Calvert School work were usually readily recognized. This test too gave some valuable information as to what phonetic sounds needed special training. He was not given any help and the result was that in the case of certain words indication will be found that they were not considered in the test. This does not mean that he does not know the words or could not say the words, but only that at the time of the test no fair results were determined.

The pupil was instructed "Read these words aloud";⁷⁵ unless otherwise marked the pupil read and pronounced the word correctly. All the words of the test are given; unless indicated contrariwise are to be considered as successes.

- | | |
|--------------------|-------------------|
| 1. pie | up [✓] |
| put ^{✓76} | keep [✓] |
| pig | top |
| 2. be | rub |
| boy ⁷⁷ | <u>tub</u> |

⁷⁴ Ibid., p. 6.

⁷⁵ Ibid., pp. 6-11.

⁷⁶ An acute accent after a plosive indicates a glottal stop.

⁷⁷ No accurate test of the word was considered to have been made.

14. no sun
 not ten
 _____ man

15. lay } {The l sound needs corrective training;
 let } {it had a y sound in these words.
 leg }

all
 pull
 girl

16. _____
 black

17. clock (keyock)
 climb (keyimb)
 clean (keyeean)

(The cl sound had a phonetic sound of key in the above words; the last part of the words were correct.)

18. fly
 flag
 floor

The fl sound in the above words need corrective help.

19. glad (geyad)
 glass (geyass)
 gloves (geyoves)

The gl sound in the above words sounded as gey and need phonetic correction.

20. play (l+v)
 please (l+v)

21. _____
 sleep (sl pronounced as sy, i.e. syeep)

22. splash (spl sounded like pv, i.e. pvash)

(23 - 25 Nothing listed by Schoolfield for these numerals.)

26. ran (van)
 red (vedden)
 rope (vope)

The r sound had a v sound in the above words.

27. bring (bi-labial trill for r)
bread (bi-labial trill for r)
-

28. cry (r was unvoiced)
-
-

29. draw
drink
dress
(R was unvoiced in the above words).

30. from
friend
frog
The combination of fr sound needs help.

31. green
great
-
- The r sound was correct in the above words.

32. pretty (r sound needs help).
present
prince

33. _____

34. _____

35. spring (r was unvoiced).
-
-

36. street (treet)
string (tring)
strong (trong)

The st sound needs helpful corrective exercises, no doubt part of this leakage of air here is due to dental irregularities.

37. tree
try
train

38. three (r is a labio-dental trill)
 throw
 through
 Th in the above words need phonetic help, this again can be traced to dental irregularities; in the word throw and through the th had an f' sound.
39. saw (sawn) us
 see house
 said horse
40. sky (sk sound was correct at one testing; another time the sk sound had a ty sound).
 skate (sk sound in this word had a g sound, although the patient knew what the word was and its meaning).
 ask
 desk
 dusk
41. small (s sound omitted, i.e. mall)

 smoke (s sound omitted, i.e. moke)
42. snow (s sound omitted this word was known by patient, but its pronunciation sounded as no).
 snake (s sound omitted, i.e. nake)

43. spoon (s sound omitted, i.e. poon)
- N.B. From the test in 41 to 43 we can see the need of phonetic help on the s sound which again can be traced to dental irregularities.
44. _____ nest (t sound omitted, i.e. ness)
 _____ must (t sound omitted, i.e. muss)
 _____ best (t sound omitted, i.e. bess)
45. swim (w sound needs help)
 sweet (w wound needs help)

- 46 to 52 No words listed by Schoolfield for these numerals.
53. zoo (sioux)
 zebra (sebrā, this word zebra sounded correct to mother-teacher but not to examiner).
 is (iss)
 his (correct)
 was (wass)
- 54 to 61 No words listed by Schoolfield for these numerals.

62. shoe (sioux) wish (no h sound, i.e. wiss)
 shall (sell) dish (correct)
 fish (feesh)
63. Omitted by Schoolfield.
64. chair (tsair, ch sound needs corrective help)
 child (tsile, ch sound needs corrective help)
- _____
- much
 which (wh has v sound, i.e. vich)
 watch (w has v sound, i.e. vatch)
65. jump (j sound need corrective help, i.e. chump)
 just (j sound given to this word, i.e. duss)
- _____
- age (at first dounded correct to Voelker, then he decided
 it had a sound as adz)
- _____
66. you (correct)
 yes (correct)
 your (pronounced as yir, should say yoor)
67. keep cook
 kite cake
 kind book
68. Omitted by Schoolfield.
69. queen
 quick
- _____
70. squirrel (s sound omitted, otherwise perfect phonetic
 sound, i.e. quirrel)
- _____
71. box
 fox
 six
72. go big
 good pig
 gate leg (yeg, l sound needs help)
73. Omitted by Schoolfield.⁷⁸

⁷⁸ No such phonetic configurations in the English language.

74. sing (singing)
 thing (fing)
 long (nong)
75. he
 hop
 hot
76. he eat
 see seat
 seed meat
77. sit did
 hit big
 his pig
78. —
 get
 leg (l sound needs help, i.e. yeg)
 said
 head
 bread (r had a bi-labial trill)
79. hair
 chair (ch sound needs help, pronounced as tsair)
 fair
 bear
 pear
 care
80. cat bad
 hat had
 that (th had d sound, has (h had d sound,
 i.e. dat) i.e. hass)
81. cup sun
 cut fun
 but nut
82. turn bird
 burn heard
 — work (w had v sound,
 i.e. vork)
83. Omitted by Schoolfield.
84. moon do
 soon who
 — shoe

85. book
 cook
 look
 could }
 would } { Both these words sounded correct to mother-teacher,
 but not to examiner, i.e. he thought they were
 couldn and wouldn.
86. horn saw
 horse
 corn walk
87. not top
 got stop (st sound given as ts, i.e. tsop)
 hot hop
88. car are
 far arm
 star farm
89. make may
 cake say
 came paint
90. mice
 like (l sound given as y, i.e. yike)
 kite
 by
 my
 tie
91. go
 gold
 cold (d sound omitted)
 goat (t sound had k sound, i.e. goak)
 boat (t sound had k sound, i.e. boak)
 coat (word recognized, but sounded phonetically as coke)
92. mouse
 house
 month (th sound had f sound, i.e. mouf)
 cow
 now
 how
93. boy
 toy
 joy (j sound, sounded correct to teacher, but to examiner
 sounded as ch, i.e. choy)
- voice (v sound given as b, i.e. boice)
 boil

| | | |
|-----|------------|-----|
| 94. | new | use |
| | <u>new</u> | — |
| | few | — |

Analysis of the Reading Test

The use of a glottal stop with a plosive is sometimes a primitative phonetic behavior and here, has no emotional significance but rather might possibly be eliminated through the avenue of breathing therapy.

It is interesting that as a result of constant semantic coaching the patient's articulatory abnormalities did not hinder the discrimination of words. It is very similar to the behavior of any society, one ethos of which is a non-phonetic language.

W and wh are masked by an inferior labial-filter.

The final labio-dental fricative becomes a bi-labial-plosive.

The glossal-labial-fricative is in practiced words a glossal-labial-plosive, in initial position, a labio-dental plosive and in final position a bi-labial-plosive.

The r has not been refined to adult standards. The prominent lower lip action sometimes results in a v substitution. There is also a problem of voicing, especially in combinations. The r defect is a bit extreme when its articulation is a bi-labial-trill.

Final voice plosives are unvoiced for the most part in their explosive aspect.

The lateral liquid is unstable, closely resembling a high front vowel and very frequently, a yod, i.e. leg (yeg), climb (keyimb). The same inferior labial-filter that forms a mask to the articulated sound or produces an interfering fricative masking noise or even a

plosive, cul-de-sac, operates prominently in the case.

Compensation for dental irregularities in the case of sibilants. This is so extreme that even complete omission is tolerated and hardly discriminated.

The instability of certain pronunciations seem to be not at all articulatory in character, but solely to the question standard maintained.

Combination st in final position was used for the t omitted.

Final z unvoiced.

Sh usually too high in pitch even in the ch combination. J apt to be unvoiced, given as in Canton Chinese.

The behavior of nasalizing and palatalizing (so called softening) found in many languages was demonstrated here in English.

The final alveolar plosive is sometimes velarized.

Part III

APPENDIX 2

SUMMARY OF PSYCHOLOGICAL TESTS

In order to make the psychological study of my graduate problem more interesting and profitable, my patient has been given the Revised Stanford-Binet Intelligence Scale Test three different times by three different examiners. The first was given at the Mayo Clinic at Rochester, Minnesota, August 5, 1940 and then by the public school in the spring of 1941 and January 5 and 6, 1944. The results have varied so widely that they seem to prove to me that:

"It is apparent, that current intelligence tests do not even furnish an adequate estimate of the average ability of the individual, since they are overweighted with certain functions and omit others. Most intelligence tests may be regarded as measures of scholastic aptitude, or ability to succeed in our schools."⁷⁹

The variation in the individual testings seem to indicate to me that:

"Such a score is crude at best and may upon occasion be definitely misleading."⁸⁰

"In the study of individuals, the only proper unit is the individual."^{81*}

⁷⁹ Anastasi, Op. cit., pp. 296-297.

⁸⁰ Ibid., p. 260.

⁸¹ Ibid., p. 328.

*See pages 39-42 of this thesis "Some other Psychological Aspects."

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Typist Ruth Leininger