PRESENTATION OF TYPES OF THE MENTALLY DEFICIENT

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By and large we can divide our population into two groups. In the first group we find that the mind is deficient but that there is no somatic disturbance. The growth energy of this particular group seems not to have been equal to its task of completing the full development of the child. We will start in today by showing you some who belong to this group.

Four boys and four girls, whose chronological ages varied from 13 to 17 years, were questioned as follows:

Q: What grade are you in? A. Fourth grade.

Q: What kind of a problem did you work out? A. Long division.

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By and large we can divide our population into two groups. The first to be shown are the hydrocephalics. This young lady on my right is sixteen years old. She was admitted to the institution last March. She was a 7 1/2 months' child. Her head was noticeably large when she was born. In the fall of 1932 she fell and struck her head on the ice. She had concussion of the brain, and there was considerable disturbance which led to convulsions and attacks of severe pain about her head and neck, for

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We expect most of the boys and girls in this group to do second-grade work. A boy of the mental age of seven years can paint farm tools, but he can do no fine work. He can learn to weed small vegetables, like onions and carrots. He can harvest vegetables, except tomatoes, corn and peas. He can drive a two-horse team. He can plow, harrow and cultivate. He can care for horses in the barn. He can sew on buttons and can sew on a patch. He can hoe and thin vegetables. He can help the carpenter by repairin,
which morphine was necessary to control. Her head has been growing larger throughout the years. When she was fourteen months old her head was 28 inches. When she was five years of age it had reached 27 inches. And when she was fourteen years old it had reached 28 inches. Now, at sixteen years of age, it is 28½ inches. The x-ray shows that there is a large accumulation of the cephophaloid fluid—it is a case of hydrophaloid. And that the sutures of her skull are still open, which allows the head to continue to expand. Her history states that when she was fourteen years old she was in the fifth grade, but as her head enlarged she has been deteriorating mentally, for the last four or five years. This is shown by the mental level. In 1936 the intelligence quotient was 65; in 1933, 60; in 1934, 64. Her intelligence quotient was taken just a few days ago; it was 34. The x-ray shows a normal flattening of the base of the skull and an erosion of the sella. This is interesting in connection with the fact that she has been very stout around the hips and thighs, indicating a disturbance due to the pituitary gland.

This little boy was born in 1927. He has been with us only a little while. He sits up in bed, but cannot walk. His legs are very stiff. He is a spastic paralytic. He can talk and he has a good time watching the other boys. The size of his head is 25 inches. The family history is good. The rest of his brothers and sisters are normal.

The next little fellow’s head is 24 inches in circumference. He is blind, but he walks around and plays in the playroom. He attempts to say a few words, none of which can be understood by me. He was born in 1930, so he is six years old. His mental age is one, and his I. Q. is 20. His father is a refrigerating engineer and a college graduate. The mother spent three years in college. The head expands outwardly and down, making the base of the skull very flat.

The amount of mental deficiency which we find in these cases will of course, depend upon the amount of damage which has been done to the brain. We have had them all the way from practically zero up.

We had a little boy who died here a number of years ago. He was eleven years old. At our autopsy we secured over a gallon of fluid from the sides of his brain. The cerebrum hemispheres were very thin. He knew very little; was about the same as a very young baby.

In this group we can get a large range of mentality, depending upon the amount of damage that has been done to the brain. Of course the ones we see are the ones who are the most damaged.

We may see in many musicians in this list.

We will now go to the other end of the scale; that is, from the very large heads, the hydrocephalies, to the very small heads, the microcephalies.

These two girls are unusual because they are apparently identical twins. They are 33 years old. The circumference of their heads is 14.25 inches. That is the size of the head of an ordinary child under a month old. They have been with us for years. The defect was noticed at birth. They have never talked. They can see and hear. They walked at the age of 1½ years. They are exactly alike to all ordinary appearances, but one has a scar on her arm, and when we want to know which is which we look for the scar. Recently I had occasion to measure their bodies, and I noticed that there was quite a little difference in their bodily dimensions.

This boy here belongs to the same group but on a much higher level. He is one of our working boys. He is 40 years old. His job is, for the most part, to pick up trash around the institution, take it over to the incinerator and see that it is burned up. He is a pretty good boy and we do not have any trouble with him.

Usually these people are rather obstinate and give way to temper tantrums.

We had one little boy whose intelligence was way down toward the lower end of the scale. He would get mad, and the only way he could express his temper was to pound his head against the wall and floor and kick with his legs. That was his way of expressing his anger.

This little girl is what is sometimes called pseudo-microcephalic. Her brain has been very much crippled, and she is what we call a spastic paralytic. Her arms and legs are stiff. She has practically no use of them. There is no movement of the arms and legs. This condition is due to a damage to the brain. If the brain damage was great enough, the skull cannot grow, so we have this microcephalic condition. The diameter of her head is 15½ inches, which is equivalent to that of a normal child two months old, so practically her head has not grown since she was two months old.

The fundamental cause of this condition is germ-plasm injury. There are a number of cases in recent literature in which it was thought necessary to give a woman heavy doses of x-ray. Later on it was discovered that she was pregnant. When the child was born, he was a microcephalic. There have been a number of children born under these conditions, who are microcephalic. If you are acquainted with or have read about Morgan and his fruit flies, you see, by disturbing the germ plasm, you can get almost any sort of an individual.

These children represent something different. They are the cretins. They are the ones whose condition is due to an absence or great deficiency in the thyroid secretion.

Our most noted example of this condition is this girl here. She was born in 1896, which makes her forty at the present time. She was in the fifth grade, but as her head enlarged she was unable to go on with her studies. The record states that she had not grown since she was six months old. At that particular time she was sixteen or eighteen inches tall. She was simply a living mass of flesh. Her tongue was so large she could not get it in her mouth. Her skin was very dry and rough and scaly. Her hair was coarse. In those days we began immediately feeding her thyroid, and we made quite an impression upon her. Eventually she got so she could sit up. Her tongue grew small enough so that she could get it back into her mouth. And she got so she could help herself and help others a little bit. Much of the trouble that mother came to see as "Jennie"—that is the girl's name. She had not seen her since the time she brought her to the institution. Everyone here was very proud of what had been done for this particular girl. So the mother had Jennie all dressed up and brought her in to show her to her mother. The mother took one look at her and said, "That is not my Jennie." She would not believe it was her girl. She thought something had happened to her girl and that we were trying to palm somebody off on her. She left, and that was the last we ever heard of her. So success sometimes has its difficulties. But if you see what Jennie is now, she talks in this way that you have heard. She is now fifty-one years old.

This girl was born in 1896, which makes her forty at the present time. She has been here since 1908. The defect was noticed at birth. She grew very fat quickly. She walked after she was a year old. She sees and hears and helps a little around the ward.

This next little girl over here was born in 1912. Her defect was noticed shortly after birth. The theory was that it was possibly congenital. In 1929 she was 50 inches tall. She was quiet and showed no interest in her surroundings. She was the oldest child in the family. The father is of low mentality. The mother is of low mentality. The first oldest girl after her appears normal. One of her brothers
are flattened. See how the sternum projects. Here is one condition where you
will look for this fifth finger. Their skin is usually rather sensitive, easily irritated,
so that we have more or less of a fight to keep the inflammation down. The glands
on the edge of their eyelids are very easily irritated, so that most of the time they
have sore eyes, which we are everlastingly fighting. They have low resistance to
disease, especially lung disease. Pneumonia in a case of this type is almost a death
sentence.

Now, seventy-five percent of these people die before they are twenty-five,
but here is a girl fifty-five years old. She has been with us since 1897.

Here is a little girl who has a twin sister here, but the twin is sick so she could
cannot come today. They are identical twins. We have in the literature histories
of only seven or eight cases in which both twins are Mongolians, but we have
something like eighty or ninety cases in which only one of the twins was a Mon­
golian.

Another very interesting thing about this type is that very frequently these
children have old mothers. In fact, it is said that when a woman thirty-eight
years old or older has a child, the chances are about fifty-fifty that it will be a Mon­
golian. They often appear at the end of large families. This twin belonged to a
family where there were twelve pregnancies. These twins are the result of the
tenement habit. The mother had her first child when she was twenty and her last
child when she was forty-six. She was forty-two years old when the twins were
born. She was forty-four when another Mongolian was born. But when she was
forty-six she had a normal child. So we can not be sure that the age of the mother
will cause this particular condition.

The cause of mongolism still remains a puzzle. In order to figure out the eti­
ology of this condition, here is the thing you have got to put together: The fact
that the parents are old. The fact that Mongolians come at the end of large families.

And the fact that you can have twins in which only one is a Mongolian. There
have been lots of theories and ideas about it. A man in Holland who has written
quite a book on the subject claims it is due to pressure on the child before birth;
that the amniotic sac is too small; that the baby is bent on itself too much, conse­
quently the center section of its brain does not develop, it is too narrow. But he
is the only one that adheres to this idea. The theory held by most of us is that
it is some sort of endocrine disorder. Which particular gland, we do not know. We
usually protect ourselves by saying it is a polyglandular disorder.

Not long ago one of the medical journals reported two cases in which there
were symptoms of thyroid enlargement, where the doctor gave what he called
"two or three large doses of x-ray." The symptoms of enlarged thyroid promptly
disappeared. But afterwards these two children showed marked signs of mono­
glism, which would seem to indicate that the thymus gland has something to do with
the production of this condition.

Doctor Breitmann, of Nuningrad, in his section on diagnosis in the Handbuch
under the name of Sarcos, has a form of measuring the body. From some five or six
thousand measurements that can be made of the human body, he has chosen
fifteen. The measurements are made in a perpendicular line from the vertex to
the lowest edge of the nose, from the root of the sternum to the mandibular line, mid-
mandibular line to umbilicus, umbilicus to groin, groin to knee, knee to ankle, ankle to floor. Also the length of the upper arm, forearm, hand and
foot are taken, as well as the half-mandibular distance and the length of the
distance. He finds that these measurements give him some very characteristic
pictures of endocrine disorders. I measured some thirty of our mongols and found
some marked physical characteristics of this condition. Particularly, the distance
from the inter-mandibular line to the umbilicus is long, and the lower leg is nearly
as long as the upper. In plotting these measurements it gives a characteristic
picture which resembles quite closely the one Doctor Breitmann gives for dys­
thymatism. This would seem to indicate that possibly a disorder of the thymus
has a good deal to do with this particular condition. We are not the only people
who think so. In Boston they are using Doctor Hanson’s thymus extract in the treatment of young mongol children.

Certain things can be done for these people. I have one little boy under treatment with endocrine extracts who has grown twice as fast physically as the ordinary child grows in the same length of time. He has a lot of energy and “pep” and initiative; he is very active; he can always find something to play with. His growth of intelligence is quite marked. A year and a half ago he could say only two words. Now he can put together sentences of half-a-dozen words. His attention is very active and scarcely anything escapes him. The fact that he is so full of energy and “pep” means a good deal.

People of this type are usually lazy. If there is a lot of fun to be had they have plenty of energy, but when there is work to be done—such as scrubbing and polishing a floor—that is very laborious and tiring for them. Henry, here, is a good scrubber. He does a lot of work.

With regard to this last group which I have shown you, in institution practice we expect about four percent of this type. Such boys and girls are only sent here for some specific reason—usually something in the home condition—that is, if there is some specific reason why they should come here we do not get them.

You will find that there is no trace of heredity in this group. You will find them in the best regulated and most ambitious and intelligent families. You go to private schools where they are spending a hundred dollars or more a month for their care and you will find many of this particular type of patients, which simply shows that they come from families that can afford that amount of expense.

In Russia they form ten percent of the defective population. In our institution, as a rule, they compose four percent. Their mental ages usually range around four years.

It has been only twice that I have seen one who could read. By a great deal of labor you can teach them to read, but it is of no particular use to them. In a short time, unless you keep right after them, they forget it.

The cretins and mongols form our most numerous group of patients whose mental deficiency is due to endocrine disorders. But eunuchoidism is not infrequently found and occasionally dystrophia adipsos-genitalis.

These boys represent the paralytic group whose condition is due to injury of the brain, which paralyzes the body and causes injury to their intellectual powers. They comprise approximately fifteen percent of our population. This paralytic group can be divided into three parts, according to the causes of the condition.

1. Because of birth injury. That is, during birth the head is injured; hemorrhage, usually, of the cerasus type, which injures the motor regions of the brain and produces this bodily condition.

2. Birth injury that is, during birth the head is injured; hemorrhage, usually, of the cerebellar type, which injures the motor regions of the brain and produces this bodily condition.

This young man with crutches is an example of that particular type. His father is a well-known physician. That was his diagnosis. He is twenty-four years old.

The chief characteristic of this paralysis is that it is spastic. The muscles particularly get stiff. If there is a stiffening of the right arm, they hold it in this position (demonstrates). The leg is usually in an extended position, like this. They walk like this. This shows that the injury is in the head, or the upper neuron.

2. Then there is another group, in which the condition seems to be caused by some inflammatory condition. Here meningitis and all the encephalitic conditions come in.

Only one-half of this man’s body is affected. He holds his hand in this particular position and he cannot straighten it out because of the paralysis. His left arm and left leg are affected. It is a hemiplegia, a half paralysis or paralysis of one side of the body. That condition is due possibly to meningitis.

3. Here we have the degenerative type.

The boys on the back row are brothers. We had three of them here at one time, all in that condition. This is what we speak of as a paralytic, paralysis of the legs and lower part of the body. They have this stiffness, rigid paralysis. The fact that these boys are brothers in the same condition indicates that it is a degenerative disease.

From the motor region in the brain we have a large tract of fibers leading down through the base of the brain into the spinal cord and ending in the cells of the anterior horn of the cord. This is known as the pyramidal tract, and is the tract through which willed movements are made. Any destruction or break in this tract will cause a loss of willed movements and a paralysis of the spastic or stiff type.

In the base of the brain we have the basal ganglia, the striate and lenticular nuclei, the third ventricle and the hypothalamic region. These are connected by fibers with the spinal cord and form what is known as the extrapyramidal system. Its function is to control and direct our automatic movements.

I had one boy that I had selected to illustrate this last group, because I knew his history and knew that the condition was due to encephalitis, but he has the rickets, so I could not bring him over.

This boy is the nearest I have to that condition. You see this shaking. That is involuntary on his part and is due to an injury to one of these basal ganglia (palidus). It is what we call paralytic agitans or Parkinsonism, and is often caused by encephalitis.

This boy is an early case of that particular disease. He is getting to the point where he is beginning to shake, and it is gradually becoming more marked.

Notice this boy’s face. There is a lack of expression and movement there, sort of a masked face. He has lost control of a lot of his automatic movements, motions which we usually make without thinking of them. If he happens to be out of balance he will keep on going backwards until he falls into something. He has had a number of injuries about his head on account of this condition. (Boy is told to rise from chair. Walks backward. Would have fallen if doctor had not caught him.) He simply lost his balance and could not catch it again. He is very helpless when anything is lovely, but some boys can assist and give him a “lift” and makes him mad, he can act as well as anybody. He is able to control himself then.

We have, then, the three types of infantile cerebral palsy cases: First, the birth-injury type. Second, the inflammatory, meningitis or encephalitis type. And, third, the degenerative type.

Doctor Sharp, of New York, claims that forty-five percent of these cases are of the degenerative type, thirty-five of the inflammatory type, and only twenty percent of the birth-injury type.

The paralytics are a very interesting group and, as I have said, form approximately fifteen percent of our population. In most of them we have a mixture of pyramidal and extrapyramidal symptoms. It is rather unusual to find cases