bly of this kind. However, I will quote a little incident that may be of interest to Mr. Merrill.

Last winter it was my good fortune to take a cruise around the Caribbean Sea. We were in the Canal Zone at Christmas time and went to Colon to attend divine services. As we came up the gang plank about 2:00 A. M., a fellow said to me, "You are from Faribault." "Well," I said, "what do you know about Faribault, my friend?" He replied, "I have been in Faribault." "How did you know me?" I asked. He replied, "You've been a doctor there." "Yes," I replied. "Where did you come from?" He said, "One time I was a boy in the State School at Owatonna. I was a homely little cuss, but Mr. Keller went to Owatonna and picked me out and brought me to Faribault. I lived there a great many years. Later I joined the Canadian army, went to France, and was not killed. I am now in the quartermaster's department of this boat." I was very proud to hear of that. We don't know until we go on a trip like that how far-reaching these institutions are and what a credit many of the inmates are. This boy started out under a great handicap; now he is well qualified for his work in the quartermaster's department. I went up on the bridge one day and found him steering the vessel. The fact that he was able to attain a position of that kind, where he had in his hands the fate of a million-dollar boat and the lives of 300 passengers, makes him a great credit to the Owatonna School and to Mr. Merrill.

The Chairman: We have with us today Doctor McBroom, who will conduct a clinic. I am sure you all will be very much interested. Doctor McBroom.

28-CTF-DEM

A CLINIC—TYPES OF FEEBLE-MINDEDNESS

By D. E. McBroom, M. D., Senior Physician Minnesota School for Feeble-Minded

The scientific study of the feeble-minded is only about 20 years old, and the last few of these have witnessed an astonishing increase of popular and scientific interest in this subject. This interest has developed so suddenly and has become so widespread that the increase of knowledge and the establishment of methods, criteria and terminology have not kept pace with the new developments. Consequently there is considerable difference of opinion as to what feeble-mindedness is, and especially as to who may be properly included under this term. Considerable of the confusion now prevailing in the different conceptions of feeble-mindedness is caused by failure to discriminate between superficial manifestations and fundamental basis. This is due to the fact that the condition of mental defect has been defined from four, or more, different points of view, and the definitions thus compounded have been construed to better define the subject from the viewpoint of that particular branch of science.

CLASSIFICATION

Persons who are recognized as being below the line of normal intelligence have been at different periods called by different names. Originally called idiots, they were later designated as imbeciles, and still later as feeble-minded. But since more study has been put upon the problem it has become necessary to designate different degrees of defect, and by common consent the custom has grown up of applying the term idiot to the lowest grade, imbecile to the middle grade, and feeble-minded to the highest. In England this is the common classification. In America we have used the expression feeble-minded both in a specific and in a generic sense; specifically, to designate the highest division, and generically, the whole group. Our institutions for these defectives are generally known as Institutions for the Feeble-Minded.

Since the introduction of the Binet Measuring Scale of Intelligence and the grading of these children by their mental age, a closer classification has been followed. The American Association for the Study of the Feeble-Minded has adopted the following scheme: The term idiot is used to designate those of mental age up to 3 years; imbecile, those from 3 to 7 years, inclusive; for those from 7 to 12 years a new term has been coined—they are now called morons. The term moron, therefore, in America designates almost exactly what is meant by "feeble-minded" in England. This classification has been almost universally adopted and is a great step forward in the study of this problem. It answers almost every purpose from the sociological and psychological viewpoint. But owing to the fact that it does not take into consideration any of the physical abnormalities, it does not meet all the requirements of the medical and institutional people. So, from usage, we have about arrived at the point where we are combining this classification with the one that is more descriptive of the physical condition.

It is along this line of the combined classification that we have tried to arrange this little clinic to show you cases illustrating the different types, which we shall discuss briefly as we go over them.

The first group to which I wish to call your attention is the moron. This constitutes the largest and most important division, and in this group the sexes are equally divided. The higher members of this group are but little removed from the general populace, and would pass muster as normal if our diagnosis rested upon inspection only.

The *great majority appear to be practically normal physically*; nevertheless, Dr. Lapage found that over 90 per cent showed some of the so-called stigmata of degeneracy, and that these defects were usually in combination, while about 24 per cent were triple. (Tredgold.)

We can get an approximate idea of this group if we will recall the normal child of from 8 to 12 years of age, to which, of course, we must add the physical growth and especially sex development, which react upon them to produce certain characteristics not found in the normal person of the same mental age.

The typical moron is usually up to the average in ordinary matters of a concrete character. He expresses himself well, but fails in adjusting himself to any complex environment in which logical reasoning is required. He has no thought of the future or of anything beyond the immediate consequences of his acts, yields easily to sex temptations, and is usually improvident and drifts into pauperism. His attention is transitory, his memory poor. As a class they are imitators, are readily amused by anything ridiculous and are easily touched by anything pathetic. They constitute a very fertile field from which we harvest many of our petty criminals, prostitutes and minor offenders.

The boy that I have selected to represent this group is slightly sensitive regarding his condition, so I will not call him in until I have enumerated a few of his defects. Upon inspection he appears normal in every way, yet is a very low-grade moron, hardly qualifying as a moron.

His intelligence quotient is about .50. He is 26 years old, and small of stature; he walked and talked at 14 months and dentition occurred at about the same age. When he was 3 months old he was sick; he had several convulsions (although he is not an epileptic) and this is the attributed cause of his condition. His trouble was not noticed until he started school, where he attracted attention by his inability to learn, although he was finally promoted to the fourth grade. One maternal uncle is deaf and dumb.

Physical examination is negative; Wassermann negative. He is left-handed, has a high arched palate, small ears and small stature. He is excitable, restless, obstinate, bossy and very important; a fairly good worker under close supervision. Handicapped by his low mentality, this boy was successful in purchasing a high-priced automobile without having any funds to pay for same.

The next group that we will consider is that of imbecile, with mental ages from 3 to 7, inclusive. This class is about one-half as numerous as the moron. These children can understand language, especially that pertaining to their daily life. There is also memory of parents and some incidents of home life. They may be active or apathetic and often show a great deal of obstinacy. Sensation, self-preservation, perception, instincts and emotions are present, but fear is frequently not shown.

They can do some industrial work, under supervision, where the procedure is fixed and no judgment required.

In this class physical defects are more marked and we find numerous abnormalities. Occasionally giantism is seen, but as a rule the stature is several inches less than that of a normal person. In addition to that, the body is ill-formed, its balance and carriage are ungainly and stigmata of degeneracy are numerous and prominent. Various degrees of paralysis occur in a certain proportion of cases and probably about 40 per cent of all imbeciles suffer from epilepsy. (Tredgold.)

The expression of the imbecile is usually in itself sufficiently striking to attract attention. In this class there is a slight preponderance in the male sex. (959 males—843 females, Tredgold.)

To illustrate this group, we have chosen this boy. E. J. D., was born March 31, 1904, and appeared normal until 6½ years old, when he was injured by striking his head on the pavement. From that time on his present condition was manifest.

This boy is now past 24 years old, yet his mental age is 4-6, giving him an I. Q. of .30, which classifies him as a low-grade imbecile.

His family and personal histories are negative. Wassermann negative.

Physical examination shows nothing but a good-looking, well-nourished boy, that is inclined to be excitable, restless, and irritable, but easily managed. He does not present any of the usual stigmata of degeneracy and he handles himself much more gracefully than most imbeciles. He is able to do some work under supervision. He is not an epileptic.

IDIOCY

In this third classification we have the lowest degree of defect, with a mental age of from 3 years old to zero.

In Great Britain the idiot is legally defined in the mental deficiency act of 1913 as: "A person so deeply defective in mind from birth or from *an early age as to be unable to guard himself against common physical* dangers." (Tredgold.)

This class is about one-third as numerous as the imbeciles, and with regard to sex is nearly equal, with the males very slightly predominating. (Tredgold.)

The various anatomical and physiological anomalies reach their maximum in the idiots. Some are grotesque, but the majority are such stunted, misshapen, hideous specimens, that they arouse feelings of repulsion, rather than of levity. Paresis and paralysis, with localized atrophies, are often present. Epilepsy is very frequent and occurs in about 56 per cent of cases. (Tredgold.) Most idiots are sterile but this is not always the case. (Tredgold.) They may be able to walk, and are often active. They are all dirty in their habits and occasionally rumination is seen.

They have no memory, perception or volition, and attention is almost entirely absent. Sensation may be present but is usually absent or very dull; thus we find them impervious to sounds, sights, tastes and odors.

They learn nothing from experience. They occasionally learn to vocalize, but never learn to talk. Movement is often abnormal in quality and quantity, and as a class they are universally prone to disease (especially tuberculosis) and to early death.

As an example of this class (idiots) this boy, M. L., is a very good example.

Here we see nothing particularly abnormal in looks, except that blank expression. He has some of the stigmata of degeneracy, the high-arched palate and adherent lobules.

The family and personal histories are negative. He is the only child. His condition was noticeable from infancy. He is now 18 years old and has a mental age of less than 3 years, classifying him as an idiot. He is not an epileptic.

The cases already shown illustrate the groups in the generally accepted classification, and it is probable that a large percentage of all defectives belong to the primary group. The majority of these, as already mentioned, present no special distinguishing features, beyond the anatomical, physiological and psychological anomalies common to this class in general.

A small proportion, however, present such special characteristics as to form distinct clinical types, and it is in these cases that we must combine the two classifications.

The first group we shall consider will be the microcephalics.

By this term we usually mean a person whose skull is less than 17 inches in its greatest circumstance. But I am of the opinion that the criterion should be one of shape, rather than size, and if we use this standard these cases would constitute about 5 to 6 per cent of all defectives.

The cause of this condition has attracted much attention, particularly from anatomists, some claiming it to be due to a premature closure of the cranial sutures, and others that it is due to a synostosis of the cranium. Tredgold thinks it is neither, but is the result of an inherited blight.

The two chief clinical distinguishing features of these cases are the peculiar configuration of the skull and the (usually) very small stature. In consequence of the diminished surface of bone to be covered, the scalp is nearly always extraordinarily thick and redundant and in some cases is permanently thrown into a series of deep furrows, running anteroposteriorly. The hair is usually coarse and wiry.

The second characteristic, that of diminished stature, is not so marked, but many of them are called dwarfs.

The intellectual capacity of these persons varies within considerable limits. The majority are idiots; some belong to the imbecile class. The mental features common to most of them are the absence of any sensory defect, a general vivacity, restlessness and muscular activity, a considerable capacity for imitation, and an inability for sustained effort. They usually have remarkably good hearing and sight, and are extremely quick in powers of observation. In disposition, the majority are affectionate and well-behaved. About one-half of them are subject to epilepsy. Under this heading, we have several remarkable cases to show you.

The first case is that of a girl, M. M., born Sept. 19, 1909, now being 18½ years old. Her mental age is 2-6, making her I. Q. .18, which places

her in the idiot class.

The girl's father is a degenerate, and he is also the father of this patient's mother.

Personal history is negative, and physical examination reveals a decided cardiac murmur, systolic in time. Her scalp is not fissured. The circumference of her head is 16 inches. She is not an epileptic. Up to the present time she has never menstruated.

The next two cases we will consider together as they are brother and sister. We have no data on the family.

Their personal history is negative, and their Wassermanns are negative. As in all of these cases the condition was present at birth.

The boy, W. B., the older, was born Feb. 9, 1914, making him 14 years old. He is an epileptic.

The girl, A. B., was born Feb. 12, 1916, making her age 12 years. They are both idiots, with a mental age of much less than 3 years.

They present no physical abnormalities. Their bodies are well developed. They are very active.

The circumference of the boy's head is 15.25 inches, and the girl's is a great deal smaller, measuring 13.75 inches—the smallest head we have at present in our institution. She is not an epileptic.

The outstanding point of interest in the next cases lies in the fact that they are twin sisters, the first children born to a very strong and active but unintelligent father and mother. The father was 25 years of age, the mother 19, at their birth, which was at full term and an ordinary labor. Each baby weighed 4 pounds; both were artificially fed; their condition was present at birth—small head and features and undersized.

Dentition occurred at about 1 year; they walked at 1½ years, and talked at about 4 years.

They have 2 brothers and 3 sisters living and well. None are dead. They are both right-handed, very active, but clumsy. They are not epileptics; the Wassermanns of both are negative.

They are now 24 years old (Sept. 7, 1903), and both are idiots with a mental age of less than 3 years. Bodies normal but small. The circumference of the older twin's (E. A.) head is 14.25 inches, and that of the second born (M. A.) is 14.5 inches in circumference. E. is a very little brighter than the other. Menstruation is now established in both girls. (Elizabeth has scar.)

In contrast with the cases we have just seen we shall now consider the unfortunate group known as hydrocephalics.

Hydrocephalus is an excessive accumulation of the cerebrospinal fluid, in the ventricles, or in the pia mater or both, characterized by enlargement of the head and more or less pronounced nervous phenomena. Much uncertainty still exists as to the cause, but syphilis and tuberculosis seem to play an important part. The peculiar enlargement of the skull makes diagnosis easy, it being uniformly increased in all directions and tending to assume a globular shape. The greatest circumference is at a level of the temples and varies from a little above the normal to about 30 inches. The forehead is high and protruding. The fontanelle is tense and the sutures often widely separated. The scalp is thick and often marked by

large and prominent veins. Impairment of sight and hearing is very common. Strabismus is frequent. Epileptic convulsions are usually present in the acute stage, but tend to diminish and often disappear as the case becomes chronic or arrested. Most patients are undersized. As a rule they are quiet, confiding, affectionate, obedient and willing, although paresis or muscular weakness may prevent them from doing what they wish.

We have two very good examples of this condition.

This case, a girl, M. E. D., was born June 2, 1917.

Enlargement of the head in this case was not noted until she was 2 months old, but at the age of 1 year her head measured 22.5 inches. Dentition took place at 9 months. Family history is unknown.

At the present time she is 11 years old and her mental age is less than 3.

Her head now measures 26 inches in circumference and the fontanelles and sutures are open. Her eyeballs are characteristic.

She is a very good example of a hydrocephalic idiot, and is not an epileptic.

Here we have another good example of the same condition, a girl, B. B. P. She was born Jan. 17, 1922. Father, mother, two sisters and one brother living and well.

Her condition became noticeable when only a few months old. She has an I. Q. of .10. She is exceptionally happy and good-natured, and shows more intelligence than usual where the deformity is so marked, and manifests it by pulling the lower lid down with the finger so as to expose the pupil.

She was admitted here on Oct. 12, 1927, at which time the head measured 27½ inches. Both fontanelles are open. Since her admission the head has changed a great deal in shape, and has increased one-half inch in circumference, now measuring 28 inches, showing the condition is progressive. She is not an epileptic.

In conjunction with the last two groups, I wish to call your attention to this boy, who is neither a microcephalic nor a hydrocephalic but due to the contour of the skull might easily be mistaken for either, if seen alone. This is the decidedly rare condition known as oxycephaly (steeple head, tower skull) and is probably an after-effect of meningitis, brought about by premature union of the frontal and coronal sutures.

The particular characteristics are the skull and eyes, the skull rising high in the frontal region to a sharp point at the vertex. The palpebral fissures slant downwards and outwards and there is marked oxophthalmos. Vision is usually impaired, due to optic atrophy; severe headaches are usually present.

This boy, L. M., was the fourth child in the family; born at full term; ordinary labor; weight, 9 pounds. Bottle-fed and suffered from malnutrition. Father aged 34, mother 25, at time of birth. One brother and two sisters are well and healthy. Mother died of appendicitis.

Walked and talked at 2 years; is left-handed; is very striking example of web fingers and toes. He is now 19 years old. (Born Aug. 28, 1909.) His mental age is 5-6, giving I. Q. of .40, an imbecile. Not epileptic.

The next group, namely, the mongolian, is one that should be discussed at length, because of the apparent increase in the number of cases coming under this heading. But time does not permit.

This is one of the most clearly defined and best known groups of defectives, and is so called from a more or less close resemblance to the Asiatic type of countenance—the slanting eyes and round face. This group constitutes about 5 per cent of defectives in adults and a still larger proportion in children.

The cause of this condition is still shrouded in obscurity, but recent investigators have suggested that it is due to the abnormal functioning of the glands of internal secretion. It is generally agreed that the condition is due to something that interferes with prenatal development. As a rule there is only one defective in the family where mongolians occur, and they generally come from the better class of people. They are often the last born in large families.

The chief characteristics of this group are the slanting eyes, round face, short stubby fingers, rough skin, poor circulation, a decided lack of occipital protuberance and the large thickened tongue with hypertrophied papillae and irregular, transverse fissures. The hair is dry, scanty and wiry. Cerebral complication, paralysis and epilepsy are exceedingly rare in this group. As a rule, mongols die early. They are rarely met with above the age of 30 years and the average age at death is about 14 years. The chief cause of death is tuberculosis.

It is a remarkable fact that the mentality of the mongolians is almost always about that of a child 4 years old. (Goddard.)

These cases are oftentimes wrongly diagnosed as cretins.

In order to demonstrate the leading characteristics of this group, we have had to select a number of cases, owing to the fact that no one patient has all of the many stigmata that belong to this classification.

This first boy, H. M., was born Jan. 27, 1908. He has a mental age of 3-4 years, giving him an I. Q. of .22. He is now 20 years old, which makes him comparatively an old man for this type.

He is a typical case and presents most of the outstanding stigmata belonging to this class, i.e., the short stubby fingers; scant, wiry hair; slanting eyes, round head; and rough skin. He has a pleasant disposition and is a great imitator.

In this next case, P. D., many of the diagnostic points are more pronounced. Here we have a wonderful example of the broad, thick tongue, with hypertrophied papillae, and a very pronounced transverse fissuring; also an exaggerated type of the flat nose in addition to the short, stubby fingers; round head, wiry hair; high-arched palate; poor teeth, indistinct speech, etc.

This boy was born Dec. 18, 1916, when the father was 31 and the mother 29 years old. Both parents and 5 brothers and sisters are living and well, but mother is very neurotic. This boy is now 12 years old with a mental age of 4-8 giving him an I. Q. of .44.

This boy, J. N., was born July 9, 1907, when the father was 46 and the mother 37 years old. He has 9 brothers and sisters living and well.

His mental age is 3½ years, giving him an I. Q. of .26. Wassermann negative.

His condition was not noticed until he was 2 years old, although I am of the opinion it was manifest before then, as the mother is very devoted but extremely ignorant.

The father was committed to the insane asylum when the boy was one year old. He also presents most of the points characteristic of this type.

This girl, M. L. P., was born Feb. 23, 1909, at full term; ordinary labor; weighed 6 pounds; was breast-fed and has been peculiar since birth, with dwarfed body and small head.

She walked and talked at 2½ years and dentition occurred at 1 year. She is the eighth and last child in the family. Father was 49 and mother 42 years old at time of her birth. Her brothers and sisters are all living, well and healthy. Paternal grandmother was peculiar and disappeared. Otherwise family history is negative.

She is left-handed. Never menstruated until a year ago and is not an epileptic. She has no power of observation and is apathetic. Although she is 19 years old her mental age is 3-6 and the I. Q. is .25.

The predominating points of interest in this girl are the slanting eyes, the fissured tongue, and the marked distance between the toes.

This next case, E. G., was born March 11, 1909, at full term and with ordinary labor; weighed 8 pounds; and was breast-fed. Her condition was noticeable at birth. Her father and mother were both 42 years old at the time and she was the seventh and last child born.

She has one brother and three sisters living, all normal. Dentition took place at 1 year. She walked at 3; talked at 4 years. She is obstinate, noisy and destructive, but not epileptic.

Her Wassermann is negative, reflexes exaggerated. She has a rough, coarse voice and a fissured tongue.

She is 19 years old and has a mental age of 3-4 with an I. Q. of .21.

This other case, a girl, J. S., was born May 28, 1916, at full term; ordinary labor, weighed 5.5 pounds and was the eleventh child, born when the father was 47 and the mother 43 years old. Seven brothers and 3 sisters living and well.

Family history negative, with one exception. This girl's oldest sister married a first cousin and their first baby is feeble-minded.

As a baby she did not sit up until a year old. Teething took place at 1½ years, and she walked when 2½ years old. She has always been destructive, and of a rough and ugly disposition. She will also run away.

She is right-handed. Reflexes are diminished. She usually allows her tongue to protrude. She shows a marked separation of the toes. She is now 12 years old and her mental age is less than 3.

The next group we will consider are the cretins. It is now established beyond any doubt that cretinism is dependent upon an absence or diminished secretion of the thyroid gland. It is a condition of wide incidence, being found in every quarter of the globe, but mostly prevalent in Switzerland.

This condition is one that is noticeable in early childhood. They are usually fat and puffy and generally remain dwarfs. The skin is yellow, dry and thickened and wrinkled and has the appearance of being too large for the body.

The head is large and the fontanelles are late in closing. The nose is broad and flat, the lips are thick and swollen and the tongue so large that it often hangs out of the open mouth.

The belly is protuberant and the legs short and crooked, the whole body unwieldly, its balance unsteady, and its gait ungainly. The neck is short and thick and the supraclavicular fossae contain cushions.

The hair is thin, coarse and dry; the nails are brittle, the teeth poor. The genitals are poorly developed and puberty is delayed.

Their body temperature is low and they are more or less deaf. They are always apathetic, stupid, and lacking in memory and decision. They are not easily excited, but are sometimes vindictive.

They are usually heavy eaters, but very careless. Death is usually due to some inter-current disease, but occasionally they live to be 50 years old.

I have several remarkable specimens to show you today.

This first case, M. B., is a very good example of the typical cretin, without any outstanding points of interest.

Here the thyroid is absent. Menstruation occurs irregularly. This girl was born Nov. 10,1893, making her almost 35 years old. Her mental age is 3-4, giving her an I. Q. of .22. (Dr. Dvorak.) She is not an epileptic.

This girl, C. F., was born Dec. 13, 1897. Her father was Spanish (22 years old) and mother Norwegian (26 years old). Father and 3 brothers are living and well. Mother died at age of 34 of pulmonary tuberculosis. Mother had one first cousin that was feeble-minded.

This baby was the first born; at full term; ordinary labor; weighed 11 pounds. At birth she had 6 fingers on one hand (the supernumerary has been removed) and her condition has been noticeable since then. She is right-handed.

Dentition occurred at the age of 3. She walked at 7 and talked at 9 years of age.

She has the dwarfed stature, prominent abdomen with protruding umbilicus, large wrists and ankles and short, thick neck, together with the dark, swarthy skin and black, straight hair.

The girl has never menstruated. Her powers of observation, attention and memory are very poor.

Her age is 30 years and her mental age is 4-6, making her I. Q. .30. She is not an epileptic.

This girl, J. J., was born June 18, 1885, the second child born. Father, aged 29, and mother, aged 23. She was born at full term; ordinary labor; was breast-fed. Family history negative (three brothers and two sisters living and well). Her condition began to be noticeable when 8 months old.

She has the square head, wiry hair, thick tongue and the usual skin and posture of a cretin.

She menstruates regularly, but at times hemorrhages. This was stopped after a course of thyroids.

The most interesting thing in connection with this case is that she has developed epilepsy and this is a very rare condition in cretinism.

She is 43 years old and her mental age is less than 3.

The thing that I wish to call your attention to in this next case, H. L., is the marked deformity of the legs, showing an extreme case of knock-knees.

The girl was born June 27, 1889, at full term, delivery normal, the first born, when father was 32 and the mother 22 years of age. There were several feeble-minded children in the mother's family.

She has one sister living and healthy. She was breast-fed and was very weak as a baby. She walked and talked at 6 years old.

She is left-handed, dwarfed in stature, has the coarse, wiry hair and square head, the typical skin and the supraclavicular pads. She has never menstruated and is not an epileptic.

She is now 39 years old and her mental age is less than 3.

These next two cases are of more than ordinary interest owing to the fact that they are sisters. The older girl, N. M. D., was born Sept. 15, 1895, when the father was 23 and the mother 25 years old. The parents were second cousins. They had 7 children, 5 were normal and these 2 were cretins.

Mother died, aged 41, of cerebral hemorrhage. This girl was the first born; full term; normal delivery; weighed 3 pounds; was breast-fed for 3 months, then artificially fed. Dentition took place at 6 months, but she stopped growing when between 1 and 2 years old. She walked and talked at 7 years.

She has the large head and dwarfed body, with knock-knees, and a geographic tongue. Another point in this case to which I wish to call your attention is the enlarged but deficient thyroid. She is 33 years old with a mental age of 2-10 and I. Q. of .19.

Her sister, F. D., was born almost 10 years later, Dec. 2, 1904. She was born at full term; ordinary delivery; was the fifth child; was breast-fed for 2 months. Teething occurred at 7 months and she walked and talked at 5 years. She has about the same physical characteristics and her thyroid is palpable.

This girl is a little brighter than her sister. She is 24 years old and has a mental age of 3-6, giving her an I. Q. of .23.

They both menstruate irregularly. Their Wassermanns are negative and neither are epileptics.

They are very much devoted to each other.

This next case is one of the most interesting we have because of the family history.

This boy, A. H., was born March 21, 1908; a full term baby, normal delivery and weighed 11 pounds at birth. He was breast-fed until 1½ years old, but was a sickly baby. His condition was noticeable at birth.

Mother had chorea while carrying this child, and she was 33 and the father 42 years old at the time of his birth.

The parents had 14 children, 10 of whom are dead (4 boys and 6 girls), and of these 10 children 2 were dwarfs or cretins, and there are 4 living, 2

of whom (this boy and a brother) are cretins. Tuberculosis and chorea are prevalent throughout the entire family history.

This boy did not walk until he was 8 years old. He has a mental age 3-8 years, giving him an I. Q. of .24. He shows the outstanding points of cretinism, and is very happy and contented.

Thyroid treatment does not seem to effect him in any way.

This case of cretinism illustrates a type of the disease that is very rare in this country, but is met with more frequently in Switzerland—that is, the large stature.

This boy, C. E. H., was born Dec. 12, 1899, and was the first baby born to parents 48 and 29 years of age, respectively. The mother had chorea when she was 18 years old and had one brother who was feeble-minded, while the maternal grandmother was insane at times.

This boy has one sister living, well and healthy. He was born at full term, by a difficult instrumental delivery, and weighed 8 pounds. His present condition began to manifest itself when he was 3 months old. He was a strong, healthy baby.

He walked at 5 years; talked at 10 years. He is 5 feet 1 inch tall and weighs 186 pounds. He is right-handed, and clean in habits. He illustrates very nicely the big thick tongue; the coarse, wiry hair; the supraclavicular pads; the barrel chest; and especially the dry, scaly skin. He is now past 28 years old but his mental age is less than 3 years.

The Chairman: I want to extend to you, Doctor McBroom, our appreciation of your very able clinic. I do not know whether we who are fathers and mothers appreciate the blessing of having normal children, but your demonstration should at least give us food for thought.

We are now invited to luncheon by Doctor and Mrs. Murdoch, and will adjourn until 1:30, when there will be some drills and exercises by children of this school. I think there will also be some sort of an entertainment by pupils from the School for the Blind.