portance to wash out the bladder at regular intervals for a long time, and this may be done with a normal salt solution or a borax solution, while hexamethylenamin may be given well diluted in ten-grain doses, and especially when it becomes necessary to discontinue the lavage for a few days.

In this connection I may say that I never have seen a case of tabes in which there were any urethral lesions.

As a claim has recently been made that the determining cause of tabes is a lesion of the urethra, I wrote to Dr. James Pedersen, one of the most skilful genito-urinary surgeons and urethroscopists, who replies: "I am willing to say that I do not recollect having treated with benefit to the general condition any true case of locomotor ataxia. I can, however, say that cases with symptoms of spinal and cerebral neurasthenia, having at the same time genitourinary lesions, have, of course, been benefited by local treatment."

These patients require a warm winter climate and at all times one that is preferably dry. San Antonio is an excellent place, and Lower California is also suggested, provided that high altitudes are not sought or do not increase the patient's distress. There are various places in Colorado well adapted for the sojourn of tabetics.

It must not be forgotten that a considerable number of patients, specially in cases due to shock, trauma or hysteria, in which there is no syphilitic basis, may be cured in a comparatively short time and by very simple measures. I have elsewhere recorded a very interesting case of this kind, and since its publication I have had equal success with others.¹

25 Madison Ave.

CURATIVE EFFECT OF REST IN CHILDREN WITH PERSISTENT LOSS OF APPETITE.*

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There is occasionally seen in children a group of symptoms which are benefited by rest, and by no other treatment.

The little patient, from 2 to 10 years old, is brought to the physician with a general complaint that he has been in poor condition for several months, or that for a long time he has been alternately up and down, going to school for a few weeks and then collapsing into a curious state of physical prostration. There is usually no history of antecedent illness or predisposing cause. The parents will state that the child has a most uncertain appetite, and, in fact, at times will eat so little that it is a wonder that he can exist. Often the patient will refuse several meals in succession and will habitually reject the most important articles of diet—meat, eggs, vegetables. Often the boy or girl is subject to the most correct regimen; the meals are nicely prepared, most appetizing in variety and flavor, appealing to any normal childish palate, but the child remains absolutely indifferent to his food, taking the most minute quantities after prolonged urging. As a consequence of this voluntary semi-starvation, the chronic lack of appetite is associated with excessive muscular

weakness and certain nervous symptoms. The child shows a singular unrest, is unable to keep still, but tires under the least exertion. He can not run or walk any distance without fatigue.

A boy of this type will show no physical courage. All normal boys are combative, a little inclined to play the bully, eager to show their strength and skill. Pluck is a valuable asset for a boy. It is well for him to fight occasionally for his rights; it increases his self-respect and prevents much of that hateful nagging which is universal in school life.

The boy's parents and friends are secretly ashamed of his lack of nerve. A girl shows equally her feebleness by her languid movements and has to be urged to take exercise. For several months there may have been a steady loss of strength or recurring periods of prostration.

If under 5 years of age, the child may behave differently. Part of the time he is running about, fussing with his toys; in active motion for a few minutes, then lying down or wanting to be held. He is either in incessant motion or limp with fatigue. There is no rest for the child's attendant. He is capricious and ill-tempered; will not eat, play or sleep at the right time.

In temperament, such children may be of an attractive type, animated and graceful in manner, charming in expression and talk, but nervous and precocious. More often they are irritable, emotional, highly neurotic; at school they learn with difficulty, have small powers of concentration, are easily confused, and are much worried over the more rapid advance of their comrades. They are poor sleepers; if very young, will not take a noon nap; if older, do not fall asleep early in the evening—toss about in bed, awake, languid, unrefreshed.

There may be the history of an imperfect convalescence from an infectious disease, or a steady deterioration in physique without adequate apparent cause. Sometimes the parents will say that the child has had persistent treatment in the way of tonics, country or sea air, well-regulated gymnastics, with temporary benefit or utter failure, the child coming home a complete wreck from a long vacation. He has perhaps grown rapidly in height without any increase in weight, which is stationary or even diminished.

SYMPTOM-COMPLEX.

The patient should be carefully examined and every detail of his life considered. In the etiology of the malady, heredity generally plays a minor rôle. The parents are as likely to be of vigorous physique as of delicate, neurotic constitution. All local or constitutional diseases should be searched for as a cause for the patient's continued ill health. He or she will be found to be under weight with slender limbs and poorly developed muscles; pale and rather withered in appearance. The tongue will be clean, with no serious disturbance of digestion, no secretory or motor gastric lesion. There is a general constipation from inanition. The pulse may be rapid, irregular or often normal.

Particular attention should be given to the condition of the heart. The cardiac symptoms will often be interpreted by the personal equation of the physician's mind. A considerable cardiac dilatation may exist. The heart sounds may be normal or so-called functional murmurs heard at the apex or pulmonic areas. As a rule, the heart is in good condition and all organs and functions are in order.

1. *Railway and Other Injuries, etc.*, p. 209 et seq. New York, 1904, William Wood & Co.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Thus the positive symptoms in our symptom-complex are:

1. *Chronic Loss of Appetite*.—Patient under weight; indifferent to food.

2. *Extreme Weakness*.—Inability to run, walk or play; patient collapsed with fatigue at frequent intervals during the day.

3. *Nervous Disturbances*.—Deficient, restless sleep; lack of concentration at study. Some cases emotional and irritable; others apathetic. Child very fidgety in manner, illustrating the pathological law that deficient capacity for functional activity is associated with undue readiness for slight actions.

The condition under discussion is to be clearly distinguished from anorexia nervosa, first described by Sir William Gull, and recently ably reviewed by Forchheimer in an article, "Anorexia Nervosa in Children."

Playfair states that true anorexia nervosa is a very rare neurosis, a psychosis characterized by an aversion, an excessive disgust for food, indicating profound alteration in the nervous system.

Anorexia nervosa is a type of hysteria causing a rapid loss in weight without organic lesions. It is accompanied by delusions and by marked hysterical manifestations. The patient shows a strange unrest and tendency to overfatigue from constant walking, which leads to the exhaustion so easily produced in the starved body. The essential point, when dealing with anorexia nervosa, is to remove the patient from his domestic surroundings and to associate isolation with rest, massage and overfeeding. All authors agree that without isolation the treatment will certainly fail.

This article deals with a persistent loss of appetite or indifference to food, from nervous or muscular exhaustion, with no cerebral disturbance. The patient may be emotional, petulant, naughty, but there are no delusions, no hysteria. In both conditions there is a constant unrest and tendency to walk to the point of exhaustion, resulting in prostration and rapid emaciation.

The physician is apt to concentrate his attention on the anemia or cardiac dilatation, or to regard the child's nervousness and lack of appetite as the malady itself and not due to the underlying cause, a deficient power of muscle and nerve to sustain any prolonged effort.

Slight temporary cardiac dilatation is common enough in children and may produce weakness and anorexia, but the symptom-complex under discussion may also coexist with a heart of normal sounds and size.

The influence of school life in depressing the health of children is very much overrated. Sometimes the hygienic influences at home are at fault; generally the patient is not fit to go to school at all; any exertion, physical or mental, produces a deterioration in physique.

The patient's ill health is often perpetuated by the false idea that exercise and out-of-door life are beneficial. It will be found that whatever the child does is too much for his strength. Often the patient's extreme nervousness stimulates him to be in constant motion, to run about and play for a few minutes, and stop from exhaustion, a state analogous to the nervous gestures and lack of repose of a neurotic man or woman. Gymnastics increase the trouble; the most skilfully administered tonics—iron, arsenic, strychnin, etc.—produce no permanent improvement.

The case being thoroughly reviewed, and definite organic lesions being excluded, it will be evident that the underlying cause of the chronic exhaustion and anorexia is either a congenital lack of vigor, or is the result of faulty environment and habits and mode of living.

Such conditions occur in all stations of life, but are most frequent in children of a nervous type, whose interest in life is most intense, who may dominate the family by their strong will and persistent selfishness.

If the semi-invalidism and anorexia are merely due to too much milk, too monotonous a diet, to an imperfect convalescence with an insufficient period of rest and treatment, or too vigorous athletics, a change of regimen will insure a rapid and permanent restoration to health. But there are some children who early show an inherent weakness of constitution, a nervous excitability which may be a formidable handicap to their future career. Both in childhood and in maturity, after an unusual strain, they sink into a state of physical and intellectual prostration. If the constitution is correctly understood, they are quickly restored again.

TREATMENT.

I have adopted a plan of treatment in this chronic anorexia and prostration which may not be original, possibly is centuries old, but which is certainly effective, though strangely neglected. The idea is to give the patient a more or less prolonged period of inactivity, to allow him to rest until his reserve forces are accumulated. The inherent vigor of the patient is given opportunity to recruit. The parents are told that the cause of the child's ill health, poor appetite, insufficient sleep, ill temper, lack of muscular endurance, is chronic exhaustion, and that the boy or girl will probably improve if kept in bed two or three weeks and then given a short day of perfect freedom.

This advice will at first seem heroic; the mother demurs at the incessant care and attention which the child, if young and self-willed, will require. A good nurse is a valuable adjunct, always assuming her to be of a good temper, agreeable disposition and able to control and divert the little invalid.

The directions are that the boy or girl be put to bed and kept there for two weeks. In winter the patient, well wrapped up, may be given an airing with the windows open. In the summer the child may be put in a hammock or may lie on a lounge out of doors. A younger child may be placed in a perambulator, but no driving or automobiling, which excite and tire the patient and may offset the good of the enforced confinement, is permitted. The body should be sponged off and well rubbed, morning and evening, as a matter of toilet, and also to relieve the restlessness. A suitable, nutritious diet, well cooked, varied and attractive, with no especial restrictions should be served.

The child's attendant may amuse him with games and toys or read diverting stories, but may never scold or irritate it. Tonics may, of course, be given, but they are accessory, not essential elements of treatment.

EFFECTS OF THE REST.

The youngster will at first rebel at the irksome restraint and interference with his wishes and will cry and fret to get up. In three or four days the patient will grow more tranquil, realizing that his will is not the law of the household, and will commonly make less trouble in bed than when he was fussing about the house. He is no longer incited to study, to play or to compete with other children. In the absence of fatigue and nervous strain the child turns to eating and sleeping. After a few days in bed, the effects of rest will be evident in the appetite. The child will show a keen and critical interest in his meals, consuming enormous por-

tions. The food is perfectly digested. As the constipation in the case is due to underfeeding and lack of muscular tone, no laxative is now necessary. Sleep will come quickly in the evening—quiet, continuous, refreshing slumber.

The fine appetite of convalescence from an acute disease is due partly to the cry of the tissues for nourishment to restore the wasted cells, but also to the maintenance of muscular inactivity. The nervous secretory mechanism of digestion is not inhibited by fatigue or exercise past the power of endurance.

Less food is required in conditions of rest than of activity, but it is a clinical fact that the way to make a tired, growing child or an overworked, neurotic adult eat is to make him take rest. There is less difficulty in fattening an emaciated patient in bed than when he is up and about. Sleep intensifies the value of rest, insuring more absolute relaxation. The exact length of the stay in bed depends naturally on the previous condition and the response to treatment.

Rest should be continued until there has been a considerable gain in weight, a good appetite and natural sleep for ten or twelve days. There will now be a return of muscular vigor with a repose of manner as contrasted in the jerky, twitchy actions before commencing treatment.

An average period for the treatment of complete inactivity would be about two weeks. The nutrition, strength and appetite being satisfactory, the child may be dressed and given an hour's perfect freedom, out of doors if preferred. Improvement continuing, the period of activity may be progressively increased one hour more daily every three or four days until the child has six hours' perfect freedom in the middle of the day, out of doors for a part of the time. If the child be still delicate, or if the health be not quite at a normal standard, the short day should be continued for several months.

At this phase in the treatment, nutrition is much stimulated by a change of air, country or seashore, the patient being properly restricted in violent athletics and trials of strength. It will now be found that the powers of endurance of both muscular and nervous system are permanently augmented, that there is natural sleep, a steady increase in weight and a ravenous appetite with perfect digestion.

Most noticeable is the change in the disposition and character of the patient; the physical effect of the discipline and long tranquility result in the disappearance of the child's petulance and disobedience.

The boy or girl will develop good powers of mental concentration in study and conversation. The child will have spirit enough to play or walk or run for the relatively short time for which freedom is allowed. When the case is again medically reviewed, the cardiac dilation will have disappeared, the anemia will have been cured.

After a period of from two to four months, restraint is no longer necessary; the child may live its normal life. A recurrence of the anorexia is unlikely. The child will have grown in height and weight, is practically presented with an improved constitution. Some children have a large capital of strength, then others can bear only a few hours of activity, a minimum of mental strain. Their capacity should be estimated by their parents and physician, and their habits and career arranged accordingly.

It will at once occur to the reader that not all chil-

dren with poor appetites require weeks of rest in bed. True; there are numerous borderline conditions in which two or three days of inactivity or a midday rest will suffice; but in these cases the languor or nervousness and anorexia are of short duration. If the symptoms have lasted for several months, the short or partial rest-cure is a waste of time; the invalidism will presently recur. To obtain a good result the full details of the treatment just described will have to be carried out.

If these patients are untreated, what becomes of them? The final result is apt to be a chronic delicacy of constitution, a lack of endurance, a fragile physique which will tell in after life. Still, adolescence brings new strength and varied interests and the majority of children struggle into a fair constitution in adult life.

ILLUSTRATIVE CASE.

Patient.—Girl, aged 5, only child. Complaint, lack of appetite and progressive emaciation.

History.—The patient has eaten almost nothing for two weeks; is absolutely indifferent to her food. She was born after a normal labor; was nursed three months; was afterward fed on cow's milk. She had occasional attacks of indigestion (vomiting), lasting a day or two, but had had no infectious diseases. During July she played with a cousin three years older. The incessant activity necessary to keep up with a stronger child produced the final collapse.

Examination.—Child of an active, nervous temperament; was always in motion; had no noon-day rest; was constipated; was a withered-looking child; weight, 28 pounds. Average weight at 5 years, 39 pounds; had lost 7 pounds in one year. Physical examination was negative.

Treatment.—The little girl was put to bed for one week. The second week she was allowed to lie in a cot out of doors. She proved most amiable and amenable to treatment. After the second day in bed she began to eat ordinary diet. In the first week she gained 3 pounds; in the second week, 1 pound. She was then taken into the country and given from one to two hours a day perfect freedom on her feet. Four months later I saw her again. She was plump and rosy, with a good appetite and regular stools. She now has from five to six hours daily of freedom to run and play. Her present weight is 34¾ pounds, a gain of 6¾ pounds in four months.

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ABSTRACT OF DISCUSSION.

DR. ARTHUR W. FAIRBANKS, Boston: I have been preaching of the advantages of rest in the diseases of childhood for a number of years; and at Atlantic City a year ago I put forth one more plea for its more general employment. I believe that nervous energy, the nervous impulse to expenditure of muscular exertion in excessive amount by children is out of all proportion to their ability to respond without damage to the organism. He who will use his eyes will find confirmation of this fact on every side. I believe that the chief deleterious effect of this extravagant expenditure of muscular energy is felt by the heart, as part of the muscular system, but by far the most important part. I was interested to hear Dr. Snow say that dilatation of the heart is an occasional feature of these cases. He says that such children are unable to run, walk or play. That was exactly the condition in a series of cases that I studied. I have termed these subjective and objective disturbances in heart function, an "essential insufficiency of the heart," which, in its effects, is of infinitely more serious consequence than insufficiency of the muscles elsewhere. In my paper last year, of which this was the title, I described cases identical with those mentioned by Dr. Snow, cases I have observed during eight or ten years. If one will question these children he will find subjective complaint suggestive of insufficient heart as well as objective evidence of the same. I have always maintained that the diseases and accidents of childhood, when they do not result in permanent ill effects, are really often blessings in disguise, for they enable the child to

get the rest that he would not otherwise receive. Many times parents will say, after a child has had an attack of measles, or some other slight illness, that the child is better than it ever was before. I do not think that the period of rest advocated by Dr. Snow is long enough. With a two weeks' rest, it would be only a question of time when the symptoms would recur, if in fact all of them disappear in so short a time. I also advocate the use of massage and warm saline baths. Later I use exercises, such as are employed in cardiac diseases. This entails careful nursing, but it is perfectly feasible to carry this out in any case at home, and all the results Dr. Snow has mentioned will follow if the case is treated in that way. The mistake is too often made by the family physician of not paying sufficient attention to conditions that do not present a picture described in his text-books.

DR. SAMUEL J. WALKER, Chicago: Dr. Snow has outlined much of the course of treatment I carry out in many of my own cases. I think that we can not emphasize too much the value of rest in the chronic loss of weight and of appetite and in all of the conditions below par. Dr. Kerley read a paper on malnutrition at Atlantic City that also made a marked impression on me, as it advocated the extreme value of rest in these cases not only in chronic loss of appetite but in all cases in which the child is below par. Where you suspect tuberculosis and can not get anything positive in the way of physical signs, what do you do? If the child is petulant, irritable, has a little rise of temperature in the afternoon, is losing in weight perhaps, what is the treatment? Rest, fresh air, hygiene, etc., all that Dr. Snow has brought out. Or take another class of cases. In many cases, weeks before the development of the typical choreic condition, there is this irritability, restlessness, and so forth, that precedes the development of the condition. Under such a method of rest as Dr. Snow has described the child's condition could be so improved that chorea would not develop.

DR. CHARLES DOUGLAS, Detroit: The cases reported here to-day give the impression that we should apply this method in a great many conditions other than the ones immediately presented to us. There is no doubt of the beneficial effects of this form of treatment. If we would look further into the physiologic processes going on we should be able to apply this method in other conditions as well as those mentioned. There can be no doubt that these children are overtaxing their strength just as a nursing mother often does when laboring too much. Enforced rest allows the nutrition to be appropriated, thus strengthening the digestive glands. The child is thus enabled to digest a larger amount of food and we see the benefit in a general improvement.

DR. T. D. PARKE, Birmingham, Ala.: Within the last few months I have seen proof of Dr. Snow's theory in a child showing the condition spoken of. The child had been spoiled and was under a nurse, who had absolutely no control over it. I insisted on the employment of a trained nurse. The child was kept in bed two or three weeks with all the windows open. Its appetite soon returned, as no effort was made to coax it, and after that there was steady improvement in weight and general condition. Anyone who attended the scientific exhibit at Atlantic City and saw a demonstration there, will never again question the desirability of keeping the muscle of the heart in good condition. The experimenter had a reservoir of water connected with a tube that communicated with the left ventricle through the aortic orifice. As the reservoir was raised, the water flowing into the ventricle under pressure, mechanically closed the mitral valve. When the reservoir was lowered the resiliency of the heart wall forced out the excess of water into the tube and the valve opened, thus giving a beautiful illustration of diastole and systole. The same experiment can be repeated through the pulmonary orifice for the right ventricle. These children are apt to have weak muscles generally. Wherever we find the muscle generally weak we must expect the heart muscle to be weak; and when the musculature of the heart becomes weak and too much strain is put on it, dilatation is apt to result. We should bear this in mind whenever a child has undergone a prolonged exhausting illness.

DR. C. G. KERLEY, New York: One year ago, as Dr. Walker remarked, I read a paper along similar lines and advo-

cated a modified rest-cure. I still think that that is far better than the scheme advanced by Dr. Snow. I fail to see why a child who has simply a loss of appetite should be kept in bed. I get better results, I am sure, by having the child take his breakfast in bed. He is allowed to get up at 10 o'clock and remain until 12 o'clock. Then he has dinner and rests until 2 or 2:30 p. m. He is then allowed to be up for two or three hours in the afternoon. I believe that Dr. Snow would get better results by giving the child a change of air and a change of scene than he does by keeping the patient constantly in bed without any variety in his life. The whole matter is simply a question of the conservation of vitality. Most children overdo physically, particularly when playing with other children. They overdraw on their bank account of vitality and the result is a loss of appetite and all the other changes that go with an excessive expenditure of energy.

DR. C. RUTHERFORD, Chicago: I desire to call attention to the value of prolonged rest and enforced feeding in incipient tuberculosis. Last year in a case of tuberculosis of the hip-joint, by rest and forced feeding most excellent results were obtained.

DR. IRVING M. SNOW, Buffalo: I agree with Dr. Fairbanks especially that the period of rest should be prolonged in cases of dilatation of heart. But in the paper I presented to-day I was not speaking of that. It is a fact, too, that what one considers a dilatation of the heart is dependent somewhat on the physician's idea of where the apex should be. Dr. Fairbanks thinks that the period of rest is too short; Dr. Kerley thinks that it is too long; but I have found that by keeping children entirely at rest for two weeks we can keep up the progressive gain in weight. I do not think that the time of rest in bed mentioned by Dr. Kerley is enough. I think the child should be kept in bed a fair number of days. The child is simply left alone; in this paper I do not advocate forced feeding.

HYPERPYREXIA IN CHILDREN.

ITS CAUSE AND TREATMENT.*

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Pyrexia is one of the most complex of all symptoms of disease and one of the symptoms most constantly present in pathogenic disturbances of metabolism. It is rarely absent in acute infections or in severe trauma, and more frequently characterizes the nature of the disease and the severity of the trauma than any other symptom, except the rashes peculiar to certain contagious diseases.

Despite the many difficulties and indeterminable problems met in the study of the various causes of fever and the complexity of its maintenance, a large number of investigators have assiduously pursued series of researches, with the result that, as yet, science is without an altogether satisfactory solution of the subject. In the light of our present view of the fundamental causes of fever, so far as they are known, a brief retrospect of the past half century would seem both permissible and interesting from the standpoint of contrasting the theories and hypotheses of the past with the more recent discoveries of micro-organisms, their influence on metabolism and as primary causes of disease, particularly if we are now to consider pyrexia, in infectious diseases, as "a response, in the metabolism, to the invasion of micro-organisms, and toxic disturbances of the nervous regulation of temperature."

As far back as the middle of the nineteenth century the subject of pyrexia was one of great interest to those

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.